



ADVANCE MITIGATION PROGRAM
Thirteen Ecoregion Subsections of the
Southern California Coast and Southern
California Mountains and Valleys
Regional Advance Mitigation Needs
Assessment

Version 1.0

Establishing Caltrans' Need for Advance Mitigation
for Caltrans District 7 and Surroundings
forecast fiscal years 2019/20 to 2028/29

California Department of Transportation – District 7

December 2021

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LIST OF ACRONYMS

Acronym	Definition
ACE	Areas of Conservation Emphasis
ADC	Area of Deferred Certification
AMA	Advance Mitigation Account
AMP	Advance Mitigation Program
AMP Guidelines	<i>Advance Mitigation Program Final Formal Guidelines</i>
ASBS	areas of special biological significance
Basin Plan	water quality control plan
BEI	Bank Enabling Instrument
BLM	Bureau of Land Management
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CCA	Critical Coastal Area
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CEHC	California Essential Habitat Connectivity Project
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNRA	California Natural Resources Agency
CO ₂	carbon dioxide
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships
DPS	distinct population segment
EFH	essential fish habitat
ESA	Endangered Species Act
ESHA	environmentally sensitive habitat area
ESU	evolutionarily significant unit
FGC	California Fish and Game Code
FHWA	Federal Highway Administration
FishPAC	Fish Passage Advisory Committee
FWS	U.S. Fish and Wildlife Service

GAI	geographic area of interest
GAP	Gap Analysis Program
GIS	geographic information system
HCP	habitat conservation plan
HU	hydrologic unit
HUC	hydrologic unit code
LCP	Local Coastal Program
LUP	land use plan
MCA	mitigation credit agreement
MPO	metropolitan planning organization
NCCP	natural community conservation plan
NEPA	National Environmental Policy Act
NHD	National Hydrology Dataset
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
OPC	Ocean Protection Council
RAMNA	Regional Advance Mitigation Needs Assessment
RCIS	regional conservation investment strategy
RTPA	regional transportation planning agency
RWQCB	Regional Water Quality Control Board
SAMNA	Statewide Advance Mitigation Needs Assessment
SAMNA Reporting Tool	Statewide Advance Mitigation Needs Assessment Reporting Tool
SEA	Significant Ecological Area
SHC	Streets and Highways Code
SHOPP	State Highway Operation and Protection Program
SHOPP Ten- Year Book	<i>State Highway Operation and Protection Program Ten-Year Project Book Fiscal Years 2019/20—2028/29</i>
SHS	State Highway System
State Water Board	State Water Resources Control Board
STIP	State Transportation Improvement Program
SWAP	State Wildlife Action Plan
TDS	total dissolved solids

UA	uncertified area
USC	U.S. Code
USDA	U.S. Department of Agriculture
EPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
Water Boards	State Water Resources Control Board and Regional Water Quality Control Boards
WOTUS	waters of the U.S.

EXECUTIVE SUMMARY

This Thirteen Ecoregion Subsections of the Southern California Coast and Southern California Mountains and Valleys Regional Advance Mitigation Needs Assessment (“RAMNA”) was developed with the goal of realizing the benefits of long-range planning to help manage the risks and priorities of the California Department of Transportation (“Caltrans”) Advance Mitigation Program (“AMP”). It was developed in accordance with the AMP Final Formal Guidelines (“AMP Guidelines”)¹ and incorporates information and feedback received from outreach to the natural resource regulatory agencies,² the Federal Highway Administration, other transportation agencies, Native American tribes, interested parties, and the public. Caltrans District 7 is the lead district for this planning-level effort.

Background. In 2017, California Streets and Highways Code (“SHC”) § 800 et seq. was amended to create the AMP within Caltrans and to provide the seed capital for an Advance Mitigation Account (“AMA”), to be operated by Caltrans as a revolving account. The stated intent of the legislation was for Caltrans, through the AMP, to realize the potential of advance mitigation to “accelerate transportation project delivery” and to “protect natural resources through transportation project [compensatory] mitigation” [SHC § 800(a)]. To this end, SHC § 800.6(a) identifies 11 specific activities as authorized allowable expenditures under the AMA and provides for the AMA to be replenished under specific conditions. The 11 activities authorized by SHC § 800 et seq. consist of purchasing or establishing compensatory mitigation credits^{3,4} developed through an authorized regulatory mechanism.⁵ Upon delivery, the credits are expected to be both available and at hand for Caltrans and natural resource regulatory agencies to use as offsets to transportation project impacts. The actual finding, however, of a specific credit’s adequacy and/or suitability to offset an impact, as well as the placement of natural resource regulatory agency compensatory mitigation conditions on transportation

¹ <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/amp-final-formal-guidelines-a11y.pdf>

² For the AMP, “natural resource regulatory agencies” refers specifically to the signatories to the 2020 *Master Process Agreement for Planning and Developing Advance Mitigation throughout California for the California Department of Transportation Advance Mitigation Program*. The signatories are California Department of Fish and Wildlife; State Water Resources Control Board; U.S. Army Corps of Engineers Los Angeles, Sacramento, and San Francisco districts; U.S. Environmental Protection Agency; U.S. Fish and Wildlife Service; National Marine Fisheries Service; and California Coastal Commission.

³ Compensatory mitigation is a mitigation strategy that is preferentially applied only after it has been determined that there will be unavoidable adverse impacts on natural resources and other efforts to minimize, rectify, and reduce the impact have been incorporated into a transportation project’s design. Traditionally, this determination occurs late in a transportation project’s development process, at which time, the compensatory mitigation action is both funded and implemented concurrently with the transportation project.

⁴ Credits are the usual currency of mitigation established through an advance mitigation project; however, other values may also be established.

⁵ Authorized regulatory mechanisms include the regulatory processes to establish mitigation banks and in-lieu fee programs.

projects, is conducted in the future through each transportation project's environmental studies and permits.

Purpose. Described in the AMP Guidelines, advance mitigation planning is the AMP's process for justifying, proposing, scoping, and securing internal Caltrans AMA funding approval for advance mitigation projects. Advance mitigation planning consists of five steps. Steps 1 and 2 serve to focus the assessment (see Section ES.1, below). Step 3 is this RAMNA. Steps 4 and 5 of the AMP's advance mitigation planning process narrow down the suite of potential advance mitigation projects to a few that have a high probability of meeting the AMP's goals (see Section ES.10, below).

A RAMNA is a desktop study that consists of the best readily available information for Caltrans Districts to refer to when scoping and proposing advance mitigation projects to be funded by the AMA. The information was sensibility checked by other Caltrans functional units, natural resource regulatory agencies, and others before it was finalized. When the Caltrans AMP invests in advance mitigation projects to purchase compensatory mitigation credits, Caltrans assumes that the credits are aligned with existing natural resource regulatory agency goals and objectives. When the Caltrans AMP invests in advance mitigation projects to establish compensatory mitigation, it will aim to establish credits approved by multiple natural resource regulatory agencies. Whether purchased or established, Caltrans intends for credits to be delivered on a schedule that will revolve the AMA.

Through the RAMNA's review process, the conservation goals and objectives provided in the RAMNA were vetted with the natural resource regulatory agencies. Caltrans thinks incorporating natural resource regulatory agency goals and objectives into advance mitigation project scopes improves the chances that the compensatory mitigation credits will be (1) usable as transportation project impact offsets and (2) "protect natural resources through transportation project [compensatory] mitigation" [SHC § 800(a)].

Each chapter is briefly summarized below.

Figure ES-1 shows the geographic area of interest ("GAI") road infrastructure.

Figure ES-1. GAI Road Infrastructure



ES.1 Geographic Area of Interest and Resource Focus

Focusing this assessment improves the probability that advance mitigation projects undertaken by Caltrans will yield credits (or similar) that will be usable and comply with an appropriate established regulatory framework. Focusing the assessment also improves the chances that resultant credits will be available on a timeframe that will revolve the AMA. Hence, for advance mitigation planning, Caltrans focused the RAMNA on a specific time period, a specific area, and typical compensatory mitigation needs.

The time period assessed in this RAMNA is for fiscal years 2019/20 through 2028/29, a planning period consistent with Caltrans:

- Long-term transportation plans conceptualized in the *State Highway Operation and Protection Program Ten-Year Project Book Fiscal Years 2019/20—2028/29* (“SHOPP Ten-Year Book”; Caltrans 2021a). Transportation projects in the SHOPP Ten-Year Book have not undergone the environmental and permitting process.
- Modeled compensatory mitigation needs published in the *Statewide Advance Mitigation Needs Assessment⁶ Report Second Quarter 2019/20 Fiscal Year* (“SAMNA Report”; Caltrans 2021b). Compensatory mitigation needs in the SAMNA Report are modeled and do not reflect an environmental and permitting process.

The GAI assessed in this RAMNA consists of 13 ecoregion subsections of the Southern California Coast Ecoregion Section and Southern California Mountains and Valleys Ecoregion Section. The GAI overlaps all or part of 22 eight-digit hydrological unit code (“HUC-8”) subbasins. GAIs are established at a HUC-8 or ecoregion scale to define appropriate planning areas for mitigation implementation and anticipated use areas that align with natural resource regulatory agency practices (Caltrans 2019a). Caltrans District 7, in communication with other transportation agencies, selected the GAI because SAMNA model results for fiscal years 2019/20 through 2028/29 (Caltrans 2021b) indicate that investing AMP funds to implement landscape-scale mitigation in these subcoregions is likely to maximize State Highway Operation and Protection Program (“SHOPP”) and State Transportation Improvement Program (“STIP”) funded transportation project acceleration while maximizing environmental benefits.

Because the SAMNA model forecast impacts on hundreds of species’ habitats, to further focus the planning effort, Caltrans District 7 identified species for which natural resource regulatory agencies condition transportation projects and transportation projects would most likely benefit if compensatory mitigation credits were available. These “species of mitigation need”⁷ are the coastal California gnatcatcher (*Polioptila californica*), California red-legged frog (*Rana draytonii*), least Bell’s vireo (*Vireo bellii pusillus*), mountain lion (*Puma concolor*), and southwestern willow flycatcher (*Empidonax traillii extimus*).

⁶ The SAMNA Reporting Tool is a geographic information system (“GIS”) overlay model developed by Caltrans to support advance mitigation planning (Caltrans 2018).

⁷ Species of mitigation need are selected to focus the assessment.

Compensatory mitigation for aquatic resources in the GAI,⁸ including threatened and endangered fish species and riparian habitat, were also identified as both a historical transportation project compensatory mitigation need and an anticipated future transportation project compensatory mitigation need within Caltrans District 7.

While the entirety of Caltrans District 7 is within the GAI, portions of Caltrans Districts 5, 6, 8, 11, and 12 overlap the area as well (Figure ES-1). The portion of the GAI within Caltrans District 6, however, does not include State Highway System (“SHS”) roads and is not discussed further.

ES.2 Environmental Setting

Information on the GAI’s environmental setting is provided in Chapter 2 and its associated appendices. To develop an understanding of the GAI that is consistent with natural resource regulatory agency tools and references, geospatial data from the SAMNA Reporting Tool, California Department of Fish and Wildlife’s (CDFW’s) BIOS, and other readily available information are summarized and presented. Climate change resiliency, wildlife connectivity, biodiversity, and conserved lands are among the information presented. Coastal zone and critical habitat maps are provided.

The GAI consists of approximately 7.8 million acres in southern California. It consists of seven ecoregion subsections of the Southern California Coast Ecoregion Section and six ecoregion subsections of the Southern California Mountains and Valleys Ecoregion Section. All or part of 22 HUC-8 sub-basins are located within the GAI. Six HUC-8 subbasins span both ecoregion sections, while eight are located in the Southern California Coast Ecoregion Section and seven are located within the Southern California Mountains and Valleys Ecoregion Section.

ES.3 Relevant Plans, Policies, and Regulations

Compensatory mitigation is informed by regulatory requirements, regulatory pathways for credit establishment, and conservation. Laws, regulations, comprehensive plans, conservation plans, and land management plans that are applicable and relevant to the GAI will be consulted by Caltrans to inform both regional understanding and advance mitigation project scoping.

Caltrans identified 293 documents that may be relevant to advance mitigation planning and advance mitigation project delivery: 36 laws, guidelines, and regulations; 23 statewide and regional resource management plans; 18 plans and permits focused on species of mitigation need; 33 state agency, federal agency, Native American tribal, and local government land management plans; 10 water resources plans and documents; 164 county, city, and local government general plans; and 9 nongovernmental

⁸ For the purposes of this document, aquatic resources include all fish, wetlands, and non-wetland waters regulated by CDFW, U.S. Fish and Wildlife Service, California Coastal Commission, State Water Resources Control Board and Regional Water Quality Control Boards, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and National Marine Fisheries Service.

organization conservation and management documents. A summary and links to these documents can be found in Chapter 3.

ES.4 Existing Mitigation Opportunities

For the purposes of the RAMNA, existing mitigation opportunities are potential opportunities for Caltrans to use AMA funds to purchase compensatory mitigation that was previously approved by one or more natural resource regulatory agencies. In accordance with SHC § 800.6(a), the approved credits or values eligible for purchase may have been established through a conservation bank, mitigation bank, natural community conservation plan (“NCCP”), habitat conservation plan (“HCP”), in-lieu fee program, or mitigation credit agreement (“MCA”) developed in accordance with a CDFW-approved regional conservation investment strategy (“RCIS”).

Chapter 4 and its associated appendix present readily available information regarding existing mitigation opportunities for the GAI. In brief, Caltrans identified 4 HCP/NCCPs that Caltrans may be eligible to participate in, 22 pending or active conservation and mitigation banks, 5 in-lieu fee programs, 2 RCISs (in progress), and no MCAs.

Existing mitigation opportunities can also inform both regional understanding and advance mitigation project scoping because they may be expressions of resource agency conservation goals and objectives⁹ and may be suitable for concurrent transportation project mitigation.

ES.5 Estimated Impacts

Prior to developing a focused advance mitigation project scope to purchase or establish mitigation credits or values, as authorized SHC § 800.6(a), Caltrans must determine whether it needs advance mitigation credits. Since environmental and permitting processes have not yet taken place, Caltrans must rely on estimating future SHOPP transportation project¹⁰ impacts through the SAMNA model, as well as qualitative assessments of STIP-eligible transportation project needs,¹¹ to define the range of its potential advance mitigation needs.

Chapter 5 and its associated appendices provide transportation project impact estimates for fiscal years 2019/20 through 2028/29. Results for the whole GAI are provided in Chapter 5, while results are organized by Caltrans District in Appendices K through O. In the GAI, 132 SHOPP transportation projects and 12 STIP-eligible transportation projects

⁹ For the purposes of this RAMNA, conservation goals and objectives are a broad set of regional natural resource sustainability goals and objectives that are consistent with both regulatory requirements and conservation science.

¹⁰ Caltrans undertakes SHOPP transportation projects to address maintenance, safety, operation, and rehabilitation of the SHS; such projects do not add new capacity to the system.
<https://catc.ca.gov/programs/state-highway-operation-and-protection-program>

¹¹ Metropolitan planning organizations, regional transportation planning agencies, and other public agencies also undertake transportation projects to address non-SHOPP STIP-funded transportation improvements.

are in their conceptualization phase for the planning period. Many of these planned transportation improvements are not forecast to affect terrestrial and biological resources and many forecast impacts may be avoided during transportation project delivery. Nevertheless, the compensatory mitigation estimates presented reflect the best available information about compensatory mitigation needs at this time.

Impact estimates for the species of mitigation need are summarized in Table ES-1. Since natural resource regulatory agencies routinely place species of mitigation need conditions on transportation projects, it is likely that Caltrans transportation project schedules would benefit from available credits for these species. Similarly, impact estimates for aquatic resources are summarized in Table ES-2 (whole GAI) and in Table ES-3 (coastal zone only). When Caltrans scopes advance mitigation projects to establish mitigation, Caltrans intends to center the advance mitigation projects on the species of mitigation need, aquatic resources, and/or riparian habitat, and to address conservation benefits and values for other special-status terrestrial species and resources. It is likely that STIP-eligible transportation projects would have compensatory mitigation conditions placed on them by natural resource regulatory agencies, similar to conditions placed on SHOPP transportation projects.

ES.6 Benefiting Transportation Project Considerations

One intent of the AMP's founding legislation is for Caltrans to realize the potential of advance mitigation to accelerate transportation project delivery. At this time (December of fiscal year 2020/2021), Caltrans is almost 2 years into the SHOPP Ten-Year Book planning period. Hence, for the time period under consideration, fiscal years 2019/20 through 2028/29, Caltrans District 7 intends to prioritize purchasing or developing mitigation credits or values that are planned for the middle and end of the 10-year planning period.

Given the expected timing of mitigation need, at this time (December of fiscal year 2020/2021) credits or values that can be purchased or established by 2023/2024 (within the next 2 years) could address a subset of the impacts presented in Chapter 5 and its appendices. For example, mitigation credits purchased or established in 2 years could potentially address:

- 82.0 acres of California red-legged frog habitat compensatory mitigation need in the Southern California Coast Ecoregion Section, potentially contributing to the acceleration of 35 transportation projects
- 24.6 acres of coastal California gnatcatcher habitat compensatory mitigation need in the Southern California Mountains and Valleys Ecoregion Section, potentially contributing to the acceleration of 16 transportation projects

Organized by species of mitigation need, aquatic resources, and riparian habitat, the complete temporal analysis of Caltrans needs is provided in Chapter 6 for the whole GAI, while the temporal analysis for each Caltrans District is provided in Appendices K to O.

Table ES-1. Summary of Estimated SHOPP Terrestrial Species of Mitigation Need Impacts in the GAI (in acres)

Ecoregion	Coastal California Gnatcatcher: No. of Caltrans SHOPP Projects^a	Coastal California Gnatcatcher: Estimated Habitat Impact (acres)	California Red-legged Frog: No. of Caltrans SHOPP Projects^a	California Red-legged Frog: Estimated Habitat Impact (acres)	Least Bell' s Vireo: Number of Caltrans SHOPP Projects^a	Least Bell' s Vireo: Estimated Riparian Habitat Impact (acres)	Mountain Lion: No. of Caltrans SHOPP Projects^a	Mountain Lion: Estimated Habitat Impact (acres)	Southwestern Willow Flycatcher: No. of Caltrans SHOPP Projects^a	Southwestern Willow Flycatcher Estimated Habitat Impact (acres)
Southern California Coast ^b	27	16.9	57	106.8	11	1.8	36	117.7	13	1.8
Southern California Mountains and Valleys ^c	25	29.1	31	36.8	10	1.2	31	38.7	10	1.9

^a Some SHOPP transportation projects and some habitats cross more than one ecoregion.

^b Results are summarized for the seven subsections that make up this portion of the GAI. Caltrans Districts 5, 7, and 12 overlap the Southern California Coast Ecoregion portion of the GAI.

^c Results are summarized for the six subsections that make up that make up this portion of the GAI. Caltrans Districts 7, 8, and 12 overlap the Southern California Mountain and Valleys Ecoregion.

Table ES-2. Summary of Estimated SHOPP Aquatic Resource and Riparian Impacts in the GAI (in acres)

Ecoregion	Fish: Number of Caltrans SHOPP Projects^{a,b}	Fish: Estimated Habitat Impact (acres)^b	Wetland: Number of Caltrans SHOPP Projects^a	Wetland Estimated Habitat Impact (acres)	Non-Wetland Waters: Number of Caltrans SHOPP Projects^{a,c}	Non-Wetland Waters: Estimated Riparian Habitat Impact (acres)^c	Riparian: Number of Caltrans SHOPP Projects^{a,d}	Riparian: Estimated Habitat Impact (acres)^d
Southern California Coast ^e	22	2.8	56	2.9	57	8.6	9	1.9
Southern California Mountains and Valleys ^f	13	0.8	11	0.7	19	3.4	8	2.0

^a Some SHOPP transportation projects, some habitats, and some HUC-8 subbasins cross more than one ecoregion.

^b Threatened and endangered fish species habitat impacts are forecast by the SAMNA Reporting Tool.

^c "Non-wetland waters" is a general term that can apply to waters of the United States ("WOTUS"), waters of the state, or both.

^d The sum of montane riparian and valley foothill riparian habitat impacts are provided.

^e Results are summarized for the seven subsections that make up this portion of the GAI, which corresponds with all or part of 14 HUC-8 subbasins. Caltrans Districts 5, 7, and 12 overlap the Southern California Coast Ecoregion portion of the GAI.

^f Results are summarized for the six subsections that make up that make up this portion of the GAI, which corresponds with all or part of 13 HUC-8 subbasins. Caltrans Districts 7, 8, and 12 overlap the Southern California Mountain and Valleys Ecoregion.

Table ES-3. Summary of Estimated SHOPP Aquatic Resource and Riparian Impacts in the Coastal Zone Portion of the GAI (in acres)

Ecoregion	Fish: Number of Caltrans SHOPP Projects^{a,b}	Fish: Estimated Habitat Impact (acres)^b	Coastal Wetland: Number of Caltrans SHOPP Projects^a	Coastal Wetland Estimated Habitat Impact (acres)	Coastal Non-Wetland Waters: Number of Caltrans SHOPP Projects^{a,c}	Coastal Non-Wetland Waters: Estimated Riparian Habitat Impact (acres)^c	Coastal Riparian: Number of Caltrans SHOPP Projects^{a,d}	Coastal Riparian: Estimated Habitat Impact (acres)^d
Southern California Coast ^e	22	2.8	17	2.0	18	2.8	2	0.2
Southern California Mountains and Valleys ^f	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

^a Some SHOPP transportation projects, some habitats, and some HUC-8 subbasins cross more than one ecoregion.

^b Threatened and endangered fish species habitat impacts are forecast by the SAMNA Reporting Tool.

^c "Non-wetland waters" is a general term that can apply to WOTUS, waters of the state, or both.

^d The sum of montane riparian and valley foothill riparian habitat impacts are provided.

^e Results are summarized for the seven subsections that make up this portion of the GAI, which corresponds with all or part of 14 HUC-8 subbasins. Caltrans Districts 5, 7, and 12 overlap the Southern California Coast Ecoregion portion of the GAI.

^f This portion of the GAI is outside of the coastal zone.

It should be noted that at this time, several transportation projects have been delayed or eliminated and the timing of Caltrans needs may change. Caltrans will consider the updated transportation schedule when scoping and funding advance mitigation projects. The feasibility of addressing the needs through the SHC § 800.6(a) authorized activities is discussed in Chapter 9.

ES.7 Conservation Goals and Objectives

To increase the probability that advance mitigation project scopes promoted within and/or undertaken by Caltrans will successfully meet natural resource regulatory agency goals and objectives, this RAMNA was reviewed by these agencies and their comments and suggestions were incorporated.

Wildlife Resources Goals and Objectives

When establishing wildlife resources compensatory mitigation credits in accordance with SHC § 800.6(a), Caltrans will seek to align advance mitigation project scopes with the conservation goals and objectives of the multiple natural resource regulatory agencies that have the authority to approve wildlife resource-related credit establishment, and have the authority to approve their application to offset transportation project-related impacts. At a broad scale, Caltrans' understanding of the wildlife resources goals and objectives presented in this RAMNA encompass protecting, preserving, and enhancing large-scale ecological processes, environmental gradients, biological diversity, and regional linkages. Informed by relevant plans, policies, and regulations, the goals and objectives presented summarize how state and federal natural resource regulatory agencies, land managers, and other interested parties have prioritized regional conservation that preserves intact habitat and provides habitat linkages and connectivity. In recognition of transportation project acceleration needs, wildlife goals and objectives place an emphasis on species of mitigation need habitats in the GAI; however, advance mitigation for the benefit of species of mitigation is anticipated to have broader benefits for multiple special-status species that rely on the same habitats. Caltrans' understanding of natural resource regulatory agency wildlife goals gathered for this RAMNA include:

- Conserving and expanding habitat for sensitive wildlife species
- Preserving, enhancing, and increasing connectivity between blocks of habitat
- Supporting resiliency of the landscape to climate change
- Decreasing mortality of sensitive species
- Providing multi-species benefits

Objectives and sub-objectives are provided under each of the above goals in Chapter 7 to guide Caltrans advance mitigation project scoping toward those actions that would create the greatest functional lift for wildlife resources in the GAI. Sub-objectives capture more specific measures from conservation and land management plans that address threats to the aforementioned resources.

Aquatic Resources Goals and Objectives

When establishing aquatic resources compensatory mitigation credits in accordance with SHC § 800.6(a), Caltrans will seek to align advance mitigation project scopes with the conservation goals and objectives of the multiple natural resource regulatory agencies that have the authority to approve aquatic resource-related credit establishment and have the authority to approve their application to satisfy conditions on transportation projects. At a broad scale, Caltrans' understanding of aquatic resources goals and objectives presented in the RAMNA encompasses restoring, maintaining, and enhancing large-scale ecological processes, environmental gradients, biological diversity, and regional linkages. Aquatic resources goals developed for this RAMNA prioritize:

- Providing for no net loss of aquatic resources area, functions, and values
- Restoring and maintaining the chemical, physical, and biological integrity of waters
- Restoring or enhancing and expanding habitat for coho salmon and steelhead
- Supporting resiliency of aquatic resources to climate change
- Providing multi-resource benefits

Sub-objectives are included for each goal in Chapter 8 to guide Caltrans project scoping toward those actions that would create the greatest functional lift for aquatic resources in the GAI. Sub-objectives also capture more specific measures from conservation and land management plans that address threats to the aforementioned resources.

ES.9 Authorized Activity Summary

A summary of Caltrans' need for compensatory mitigation credits in the GAI and the feasibility of each SHC § 800.6(a) authorized activity to address is provided in Chapter 9. As pointed out in Chapter 6, given the expected timing of mitigation need, at this time (December of fiscal year 2021/22) mitigation that can be purchased or established by 2023/24 (within the next 2 years) could potentially address:

Within the Southern California Coast Ecoregion portion of the GAI, approximately:

- 1.6 acres of wetland, 4.3 acres of non-wetland waters, 2.4 acres of threatened and endangered fish habitat impacts, and 1.2 acres of riparian habitat, potentially contributing to the acceleration of 13, 35, 13, and 5 transportation projects, respectively
- 8.2 acres of coastal California gnatcatcher habitat impacts, potentially contributing to the acceleration of 16 transportation projects
- 82.0 acres of California red-legged frog habitat impacts, potentially contributing to the acceleration of 35 transportation projects
- 1.2 acres of least Bell's vireo habitat impacts, potentially contributing to the acceleration of 6 transportation projects
- 99.9 acres of mountain lion habitat, potentially contributing to the acceleration of 23 transportation projects
- 1.3 acres of southwestern willow flycatcher habitat impacts, potentially contributing to the acceleration of 9 transportation projects

Within the Southern California Mountains and Valleys Ecoregion portion of the GAI, approximately:

- 0.4 acre of wetland, 1.6 acres of non-wetland waters, 0.8 acre of threatened and endangered fish habitat, and 0.9 acre of riparian habitat impacts, potentially contributing to the acceleration of 7, 10, 6, and 4 transportation projects, respectively
- 24.6 acre of coastal California gnatcatcher habitat impacts, potentially contributing to the acceleration of 16 transportation projects
- 26.6 acres of California red-legged frog habitat impacts, potentially contributing to the acceleration of 17 transportation projects
- 0.9 acre of least Bell's vireo habitat impacts, potentially contributing to the acceleration of 7 transportation projects
- 27.8 acres of mountain lion habitat, potentially contributing to the acceleration of 18 transportation projects
- 1.0 acre of southwestern willow flycatcher habitat impacts, potentially contributing to the acceleration of 6 transportation projects

All or some of these needs could form the basis for the Caltrans District to develop an advance mitigation project scope implementing one or more of the SHC § 800.6(a) authorized activities.

Broadly speaking, SHC § 800.6(a) authorized activities can be divided into two groups: (1) purchasing compensatory mitigation that has been previously established and approved by the natural resource regulatory agencies through a conservation/mitigation bank, HCP/NCCP, in-lieu fee program, or MCA; or (2) establishing and receiving approval of compensatory mitigation credits, such as establishing a mitigation bank in accordance with existing laws, policies, procedures, templates, and guidance. The time it takes to perform each authorized activity varies; however, purchasing or paying fees for compensatory mitigation credits would likely take less time than establishing compensatory mitigation credits.

Caltrans Districts will consider all feasible options when developing advance mitigation project scopes. At this time (December of fiscal year 2020/2021), purchasing credits approved through a bank or in-lieu fee instrument, or establishing new credits through a bank or in-lieu fee instrument, is likely feasible. The feasibility of each authorized activity to meet the forecast mitigation need in time to accelerate transportation projects will depend on the availability of a regulatory and administrative pathway and other conditions.

As pointed out above, when Caltrans scopes advance mitigation projects to establish mitigation, Caltrans intends to center the advance mitigation projects on the species of mitigation need, aquatic resources, and/or riparian habitat, as well as address conservation benefits and values for other special-status terrestrial species and resources. Caltrans also intends to scope credit establishment projects that align with conservation goals and objectives, address multi-resource benefits, and address overlapping jurisdictions.

ES.10 Next Steps

Caltrans Districts will use the advance mitigation options identified in the RAMNA to inform advance mitigation project scoping, which will consider needs; conservation data and plans; input received from natural resource regulatory agencies, the Federal Highway Administration, metropolitan planning organizations, regional transportation planning agencies, other public agencies that implement transportation improvements, Native American tribes, interested parties, and the public; feasibility in consideration of mitigation need and timing; and other information presented here and that is publicly available to develop a high-level advance mitigation project scope to be included in an advance mitigation project's nomination materials. Once a nominated advance mitigation project is approved by the Caltrans Director, the Caltrans District will begin advance mitigation project delivery, which includes stakeholder engagement, project alternative analysis, coordination with natural resource regulatory agencies with the authority to approve compensatory mitigation, contracting with third parties and/ or credit sponsors, and developing an agency-approved instrument and/or one or more advance mitigation project-specific interagency agreement.

As with all compensatory mitigation established through any advance mitigation process, the mitigation's suitability to address a specific transportation project's impact is determined in the future, on a case-by-case basis, when transportation project mitigation requirements are known.

1. INTRODUCTION

California's State Highway System ("SHS") relies on long-range planning documents to guide its operation and maintenance. In this *Thirteen Ecoregion Subsections of the Southern California Coast and Southern California Mountains and Valleys Regional Advance Mitigation Needs Assessment* ("RAMNA"), the California Department of Transportation ("Caltrans") District 7 presents its forecast of natural resource compensatory mitigation¹ needs for 13 ecoregion subsections for a 10-year planning horizon. The RAMNA was developed with the goal of realizing the benefits of advance mitigation, which:

- anticipates that unavoidable transportation project impacts will be identified in the future, and
- consists of having compensatory mitigation available that has already been vetted and agreed upon by natural resource regulatory agencies as representing mitigation actions before transportation projects are completely designed and funded.

When compensatory mitigation actions are independent of transportation project delivery timelines, there is an opportunity to (1) improve the schedule and cost predictability of complying with natural resource regulatory agency compensatory mitigation conditions on transportation projects and (2) consolidate the anticipated compensatory mitigation from multiple transportation projects into fewer and larger mitigation actions, establishing mitigation credits that provide a greater ecological value than implementing multiple small project-by-project actions. Credits are the usual currency of advance mitigation actions.

This document is intended to be both an internal communication tool between Caltrans' Functional Units² and an external communication tool for Caltrans to communicate with the Federal Highway Administration ("FHWA"), natural resource regulatory agencies, other transportation agencies (that is, metropolitan planning organizations ["MPOs"], regional transportation planning agencies ["RTPAs"], and other public agencies that implement transportation improvements), Native American tribes, interested parties, and the public. It will be posted on the Advance Mitigation Program ("AMP") website: <http://www.dot.ca.gov/env/advancemitigation/>.

¹ Compensatory mitigation is a mitigation strategy that is preferentially applied only after it has been determined that there will be unavoidable adverse impacts on natural resources and other efforts to minimize, rectify, and reduce the impact have been incorporated into a transportation project's design. Traditionally, this determination occurs late in a transportation project's development process, at which time, the compensatory mitigation action is both funded and implemented concurrently with the transportation project.

² "Functional Unit" is a general term used by Caltrans to describe its organizational structure. Caltrans functional units include, but are not limited to, transportation planning, environmental, surveys, right-of-way, real property asset management, materials, traffic, structure design, hydraulics, construction, maintenance, landscape architecture, utilities, and engineering.

1.1 AMP Overview

In 2017, the California Streets and Highways Code (“SHC”) § 800 et seq. was amended to create the AMP within Caltrans and to provide the seed capital for an Advance Mitigation Account (“AMA”), to be operated by Caltrans as a revolving account. The stated intent of the legislation is for Caltrans, through the AMP, to realize the potential of advance mitigation to both “accelerate transportation project delivery” and “protect natural resources through transportation project [compensatory] mitigation” [SHC § 800(a)]. To this end, the legislation identifies specific activities as authorized allowable expenditures under the AMA and provides for the AMA to be replenished under specific conditions. Generally speaking, the 11 activities authorized in SHC § 800.6(a) consist of purchasing or establishing compensatory mitigation credits developed through an appropriate regulatory mechanism, which are then available for use by transportation projects to offset adverse impacts on natural resources (Table 1-1). Natural resource regulatory agencies and Caltrans will determine the appropriateness of a credit’s use on a case-by-case basis, when Caltrans proposes use of the credit to satisfy a specific condition placed on a transportation project.

Table 1-1. Advance Mitigation Project Types^a

Advance Mitigation Project Type	Authorization
Caltrans pays mitigation fees or other costs or payments associated with coverage of transportation projects under an approved natural community conservation plan (“NCCP”) ^b and/or an approved habitat conservation plan (“HCP”).	SHC § 800.6(a)(2)
Caltrans purchases credits from an existing conservation bank.	SHC § 800.6(a)(1)
Caltrans purchases credits from an existing mitigation bank.	SHC § 800.6(a)(1)
Caltrans purchases credits from an existing in-lieu fee program.	SHC § 800.6(a)(1)
Caltrans purchases credits developed through a mitigation credit agreement (“MCA”), established under a California Department of Fish and Wildlife (“CDFW”)-approved regional conservation investment strategy (“RCIS”). ^c	SHC § 800.6(a)(3)(A)
Caltrans funds the establishment of a Caltrans or third-party sponsored and operated conservation bank, in accordance with applicable state and federal standards.	SHC § 800.6(a)(1)
Caltrans funds the establishment of a Caltrans or third-party sponsored and operated mitigation bank in accordance with applicable state and federal standards.	SHC § 800.6(a)(1)
Caltrans funds the establishment of a Caltrans or third-party sponsored and operated in-lieu fee program in accordance with applicable state and federal standards.	SHC § 800.6(a)(1)
Caltrans funds the implementation of conservation actions and habitat enhancement actions ^{c,d} to generate mitigation credits pursuant to an MCA ^b established under a CDFW-approved RCIS. ^c The scope may include Caltrans first entering into or funding the preparation of an MCA. ^c The scope may also include Caltrans first entering into or funding the preparation of an RCIS. ^c	SHC § 800.6(a)(3) SHC § 800.6(a)(3)(A)

Advance Mitigation Project Type	Authorization
Caltrans acquires, restores, manages, monitors, enhances, and preserves lands, waterways, aquatic resources, or fisheries, or funds the acquisition, restoration, management, monitoring, enhancement, and preservation ^e of lands, waterways, aquatic resources, or fisheries, that would measurably advance a conservation objective specified in an RCIS if the department concludes that the action or actions could conserve or create environmental values that are appropriate to mitigate the anticipated potential impacts of planned transportation improvements.	SHC § 800.6(a)(3)(B)
When the other mitigation options (above) are not practicable, Caltrans may perform mitigation in accordance with a programmatic mitigation plan ^f pursuant to SHC § 800.9. The programmatic mitigation plan shall include, to the maximum extent practicable, the information required for an RCIS. ^c	SHC § 800.6(a)(4) SHC § 800.9

^a Caltrans intends to contract or subcontract implementation tasks when appropriate and as required.

^b When Caltrans is a permittee under the NCCP, or if Caltrans qualifies as a Participating Special Entity and the project is a covered activity in the NCCP

^c See: <https://www.wildlife.ca.gov/Conservation/Planning/Regional-Conservation>

^d Under specific conditions, fish passage and wildlife crossing structures may qualify as enhancement actions under an RCIS in accordance with the California Fish and Game Code ("FGC") § 1850–1861.

^e The State Water Boards do not typically approve establishment of or accept preservation credits.

^f Programmatic mitigation plans are defined in 23 U.S. Code ("USC") § 169(a) (SHC § 800.9). No more than 25 percent of the funds in the AMA may be allocated for this purpose over a 4-year period [SHC § 800.6(a)(4)].

1.1.1. AMP Guidelines

Approved at the end of 2019, the *Advance Mitigation Program Final Formal Guidelines* ("AMP Guidelines") describe how—through advance mitigation planning and advance mitigation project delivery—the Caltrans AMP will fulfill its intended purpose (Caltrans 2019a). As shown in Figures 1-1 and 1-2, the AMP Guidelines present a 10-step process, the first 5 of which are the advance mitigation planning phase and the next 5 are the advance mitigation project delivery phase. Implementation of each step of the planning phase improves the probability that advance mitigation projects undertaken by Caltrans in the project delivery phase will yield credits (or similar) that will be usable and comply with an appropriate established regulatory framework. The AMP Guidelines also describe how transportation projects will reimburse the AMA for advance mitigation project investments, thereby making the funds available to undertake the next advance mitigation project.

Figure 1-1. Advance Mitigation Planning Phase



Source: Caltrans (2019a)

Figure 1-2. Advance Mitigation Project Delivery Phase



Source: Caltrans (2019a)

1.1.2. Advance Mitigation Planning Phase

Caltrans advance mitigation planning starts with modeled estimates of potential impacts on more than 600 wildlife and aquatic resources and, through successive steps, focuses and refines Caltrans' need for advance mitigation in order to inform advance mitigation project scopes that will be approved by the Caltrans Director. As elaborated below, at this time, Steps 1 and 2 of the AMP's 5-step advance mitigation planning phase are complete. The RAMNA satisfies Step 3 (Figure 1-1; Caltrans 2019a) and provides the results of a regional assessment of Caltrans' advance mitigation needs in 13 ecoregion subsections overlapping or located within the Southern California Coast and Southern California Mountains and Valleys ecoregion sections.³

³ Pursuant to SHC § 800.9, to the maximum extent practicable, the information required for an RCIS is presented in this RAMNA. During CDFW's review of an RCIS, CDFW determines whether the goals and objectives presented in the RCIS are consistent with FGC § 1852, subdivision (c)(8).

Caltrans District 7 will first use the information and analysis presented in this RAMNA to inform Step 4 of the advance mitigation planning phase. Step 4 is the point in the advance mitigation planning process when Caltrans justifies, proposes, and scopes an advance mitigation project based on its needs (Caltrans 2019a). Advance mitigation project scopes informed by this RAMNA will provide enough information, at the appropriate level of detail, for an advance mitigation project to be nominated to the Caltrans Director for funding approval. The advance mitigation planning phase will conclude when the Caltrans Director approves a specific nominated Caltrans District 7 advance mitigation project for funding (Step 5; Caltrans 2019a). Thereafter, Caltrans District 7 will use the RAMNA as a reference (Caltrans 2019a).

1.1.3. Advance Mitigation Project Delivery Phase

Steps 6 through 10 consist of the AMP's advance mitigation project delivery phase. Advance mitigation project delivery is undertaken after an advance mitigation project has been approved by the Caltrans Director and has been programmed⁴ (Caltrans 2019a; see Figure 1-2). The phase consists of implementing the authorized activities under SHC § 800.6(a), which are existing advance mitigation mechanisms or procedures under development.

1.1.4. Program Constraints

Implicit to the AMP, the AMP Guidelines, advance mitigation planning, and advance mitigation project delivery are a number of established laws, policies, and processes including, but not limited to, the following:

- Gas tax-derived funds may be used to develop only those mitigation credits or values anticipated to be needed to fulfill the mitigation requirements of transportation improvements [California Constitution, Article XIX § 2(a)].
- AMA funds are likely not sufficient to address all of Caltrans' anticipated compensatory mitigation needs.
- Long-term transportation planning is dynamic, and compensatory mitigation needs may change over a 10-year planning horizon as funding sources and transportation project lists are refined and updated.
- Advance mitigation planning does not imply an endorsement of a transportation project alternative.
- Establishing compensatory mitigation in advance of transportation project impacts does not create any presumption or guarantee that a future transportation project impact will be authorized by a natural resource regulatory agency. Avoidance and minimization considerations continue to be required.
- Establishing compensatory mitigation in advance of transportation project impacts does not create any presumption or guarantee that the advance compensatory

⁴ Programming refers to the process Caltrans employs to set priorities for funding advance mitigation projects at the Caltrans District and project level. Through programming, Caltrans commits revenues over a multiyear period to a specific advance mitigation project.

mitigation will be considered adequate and/or suitable by a natural resource regulatory agency for a specific transportation project's impact. Appropriateness of use of advance mitigation credits developed will be assessed on a case-by-case basis. For example, using mitigation credits from a conservation bank where only preservation exists would not qualify for wetland or riparian impacts at some regulatory agencies.

- Regulatory agency approvals are discretionary and often conditional; well-executed advance mitigation does not necessarily increase the likelihood of obtaining agency approval for any particular transportation project.
- The 2008 Mitigation Rule expresses a preference for advance mitigation (in several forms) but also provides flexibility for off-site and out-of-kind mitigation where important aquatic resources in a watershed area have been identified as priority areas because of the importance of such resources, widespread loss of such resources, and/or the likelihood of successful execution of mitigation at priority sites.
- Advance mitigation projects should optimize their conservation benefit in such a way that the number and types of mitigation credits (or similar) are maximized.
- Advance mitigation projects, like transportation projects and conservation projects, have financial, technical, and strategic risks and require a scope, schedule, and budget.
- Advance mitigation projects to establish credits allow for longer timelines for plant establishment, which is crucial to success.
- Transportation projects must include mitigation costs in the scoping and programming of their budgets because they are required by law to reimburse the AMA for use of mitigation produced by the AMP [SHC § 800.6(b)].
- The AMA is a revolving account. With a revolving account, reimbursed funds are reinvested into new advance mitigation projects.

The above list is not presented in any order or priority.

1.2 Caltrans District 7 Transportation Infrastructure⁵

Headquartered in Los Angeles, Caltrans District 7 consists of Los Angeles and Ventura Counties. Caltrans District 7 has 50 field offices that maintain 42 freeways and highways with 1,473 centerline miles that provide maximum benefits to the traveling public. The SHS roadways range from scenic two-lane highways to controlled-access freeways. Interstate 5, a major north-to-south route connecting northern and southern California, and Interstate 15, a major north-to-south route connecting coastal Southern California with the Mojave Desert region, traverse Caltrans District 7.

⁵ Adapted from: <https://dot.ca.gov/caltrans-near-me/district-7/district-7-popular-links/d7-profile>

Other transportation agencies that implement transportation improvements within Caltrans District 7's boundaries (MPOs, RTPAs, and other public agencies) include the Alameda Corridor-East Construction Authority, Santa Monica Public Works, Los Angeles Department of Transportation, Los Angeles County Metropolitan Transportation Authority, Ventura County Transportation Commission, and others. The aforementioned transportation agencies are eligible for State Transportation Improvement Program ("STIP") funding.

Figure 1-3 shows the road infrastructure in the geographic area of interest ("GAI") for this RAMNA.

Figure 1-3. GAI Road Infrastructure



1.3 Regulatory Framework Summary

Unavoidable adverse natural resource impacts that could result from transportation projects are defined under environmental policies, laws, and regulations including, but not limited to:

- California Endangered Species Act (“CESA”) (California FGC § 2050 et seq.)
- California Environmental Quality Act (“CEQA”) (Public Resources Code § 21000 et seq.)
- Federal Clean Water Act (“CWA”), Sections 401, 402, and 404 (33 USC § 1251–1376)
- Federal Endangered Species Act of 1973 (“ESA”) (16 USC § 1531–1543), as amended
- Lake and Streambed Alteration Program (FGC § 1600 et seq.)
- National Environmental Policy Act (“NEPA”) (42 USC § 4321 et seq.)
- Porter-Cologne Water Quality Control Act (California Water Code § 13000 et seq.)

Natural resource regulatory agencies that may need to be engaged for transportation projects that may adversely impact natural resources in the GAI are listed in Table 1-2.

Table 1-2. Natural Resource Regulatory Agencies with Oversight over Natural Resources in the GAI

Partner	Web Address
California Coastal Commission (“CCC”)	http://www.coastal.ca.gov/
CDFW, South Coast Region	https://wildlife.ca.gov/regions/5
CDFW, Inland Deserts Region	https://wildlife.ca.gov/regions/6
California Regional Water Quality Control Board (“RWQCB”) Los Angeles, with small areas of overlap with:	https://www.waterboards.ca.gov/losangeles/
RWQCB Central Coast	https://www.waterboards.ca.gov/centralcoast/
RWQCB Central Valley	https://www.waterboards.ca.gov/centralvalley/
RWQCB Lahontan	https://www.waterboards.ca.gov/lahontan/
RWQCB Santa Ana	https://www.waterboards.ca.gov/santaana/
RWQCB San Diego	https://www.waterboards.ca.gov/sandiego/
State Water Resources Control Board (“State Water Board”)	https://www.waterboards.ca.gov/
U.S. Army Corps of Engineers (“Corps”), South Pacific Division, Los Angeles District	http://www.spl.usace.army.mil/
U.S. Environmental Protection Agency (“EPA”), Region 9	http://www.epa.gov/region9/

Partner	Web Address
U.S. Fish and Wildlife Service ("FWS"), Carlsbad Field Office	https://www.fws.gov/carlsbad/
FWS, Palm Springs Field Office	https://www.fws.gov/carlsbad/PalmSprings/AboutUs/PSFWOContactUs.html
FWS, Ventura Office	https://www.fws.gov/ventura/
National Marine Fisheries Service ("NMFS") West Coast, California Coastal Office	https://www.westcoast.fisheries.noaa.gov/

Each of the natural resource regulatory agencies listed in Table 1-2 may include compensatory mitigation as a transportation project condition after it has been determined that there will be unavoidable permanent, adverse impacts and that other efforts to minimize, rectify, and reduce the impact have been incorporated in the transportation project's design and delivery. These natural resource regulatory agencies may also recognize the use or application of compensatory mitigation credit that was established through an instrument or other formal interagency agreement as satisfying a transportation project's compensatory mitigation condition(s). As a lead agency under CEQA and NEPA, Caltrans may also determine compensatory mitigation is required.

Some natural resource regulatory agencies also have established regulatory frameworks for establishing compensatory mitigation. These are defined under environmental laws, regulations, policies, and guidelines including, but not limited to:

- *Conservation Bank and Mitigation Bank Applications and Fees* (FGC § 1797 et seq.)
- *Advance Mitigation and Regional Conservation Investment Strategies*, mitigation credit agreements (FGC § 1856)
- *Compensatory Mitigation for Losses of Aquatic Resources, Final Rule* (33 Code of Federal Regulations ["CFR"] Parts 230, 325, and 332 and 40 CFR Part 230)
- *Final Regional Compensatory Mitigation and Monitoring Guidelines for South Pacific Division* (Corps 2015)
- *Memorandum of Understanding Concerning Mitigation and Conservation Banking and In-Lieu Fee Programs in California* (California Natural Resources Agency ["CNRA"] et al. 2011).

As discussed previously, credits are the usual currency of mitigation established through an advance mitigation project; however, other values may also be established. Establishing conservation banks, mitigation banks,⁶ and in-lieu fee programs requires an

⁶ The goal of conservation banks is, typically, to offset adverse impacts on a species, while the goal of mitigation banking is to replace the function and values of specific wetland habitats that will be adversely affected.

instrument. Existing policies and regulations prescribe what an instrument must contain and address, as well as the terms of use for the credits generated by the mitigation bank, conservation bank, or in-lieu fee program. Similarly, establishing HCPs and NCCPs requires an agreement.

1.4 SAMNA

Predicting likely future transportation project effects on natural resources takes place at the intersection of transportation planning and conservation planning. In 2020, consistent with Step 1 of the advance mitigation planning process (Figure 1-1), the AMP forecast Caltrans' statewide compensatory mitigation needs for the transportation improvements conceptualized in the *State Highway Operation and Protection Program Ten-Year Project Book Fiscal Years 2019/20—2028/29* ("SHOPP Ten-Year Book") for fiscal years 2020 to 2029 (Caltrans 2021a). The forecast was performed using the Caltrans Statewide Advance Mitigation Needs Assessment Reporting Tool ("SAMNA Reporting Tool"), a geographic information system ("GIS") overlay model developed by Caltrans to support advance mitigation planning (Caltrans 2021b). Potential impacts for all 12 Caltrans Districts were estimated. Statewide, 765 transportation projects and over 600 wildlife and aquatic resources were evaluated through the SAMNA Reporting Tool, yielding thousands of results (Caltrans 2021b). The results for Caltrans District 7 are provided in Appendix G of Caltrans 2021b.

For consistency and as appropriate, tables, figures, and information presented throughout this document, including in Chapter 2, *Environmental Setting*, are consistent with the geospatial data within the SAMNA Reporting Tool. SAMNA Reporting Tool geospatial data and model assumptions are described more fully in Caltrans 2021b. Results are presented in four different reports: terrestrial and aquatic species and subspecies, special-status fish, waters, and wetlands. The unit of measure for impacts is acres.

SAMNA Caveats: The Statewide Advance Mitigation Needs Assessment ("SAMNA") is strictly and specifically intended to be used by Caltrans to justify, propose, and scope advance mitigation projects (Caltrans 2021b). The SAMNA results:

- Are not to be used to substitute for or preempt any requirements to conduct detailed transportation project-level environmental scoping and analysis to inform the programming of individual transportation projects;
- Do not relieve Caltrans project planners from first avoiding and then minimizing impacts;
- Do not preclude the requirements under CEQA and NEPA for environmental analysis of and permitting for individual transportation projects; and
- Do not constitute a commitment on the part of an individual transportation project to implement the estimated compensatory mitigation. A transportation project's actual impacts and compensatory mitigation commitments will be determined during its environmental and permitting processes.

Use of the SAMNA methods shall not support the endorsement of or any other conclusion concerning any transportation project or transportation project alternative. Use or misuse of these methods and results for any purpose other than that which is intended shall be the sole responsibility of the individuals or entities conducting or supporting that use or misuse, who shall be fully liable, therefore.

1.5 GAI and Resource Focus

Given the quantity of resources evaluated through the SAMNA, limited AMA funding, and the need for the AMP to revolve the account, Caltrans focused this analysis on a geographic area with wildlife habitats and aquatic resources where planned transportation project schedules would likely benefit from (1) having compensatory mitigation credit purchase transactions completed and/or (2) having compensatory mitigation credit supplies increased.

Focusing this analysis improves the probability that advance mitigation projects undertaken by Caltrans will yield credits (or similar) that will be usable and comply with an appropriate established regulatory framework. Caltrans intends for any mitigation-related measures to support these environmental resources in the GAI to benefit other environmental resources as well.

1.5.1. GAI

As pointed out in Section 1.4, the RAMNA is designed to be consistent with SAMNA Reporting Tool geospatial data and model assumptions. One of those decisions is the areal presentation of modeled results. In consultation with the natural resource regulatory agencies, it was determined that presenting SAMNA results by HUC-8 and ecoregion, and not political boundaries, would steer advance mitigation planning toward better ecological outcomes: the 2008 Mitigation Rule specifies the HUC-8 as the basis of service areas for mitigation banks, and CDFW's State Wildlife Action Plan ("SWAP") is organized by ecoregion.

To identify an area to focus upon, consistent with Step 2 of the advance mitigation planning process (Figure 1-1), in 2021, Caltrans District 7 subject matter specialists:

- Reviewed the entirety of Caltrans District 7's SAMNA results by HUC-8 and ecoregion (Caltrans 2021b; available on www.advancemitigation.dot.ca.gov)
- Reviewed the SAMNA results' associated future transportation project locations and activities anticipated for the State Highway Operation and Protection Program ("SHOPP") (Caltrans 2021a);
- Reviewed non-SHOPP STIP-eligible transportation improvement plans for the next 10 years;
- Observed that the portions of Caltrans District 7 located within the Southern California Coast and Southern California Mountains and Valleys ecoregion sections have forecast compensatory mitigation needs during the planning period;
- Observed that the aforementioned ecoregion sections span an area much larger than Caltrans District 7, the primary planning entity; and

- Identified the 13 ecoregion subsections within the Southern California Coast and Southern California Mountains and Valleys ecoregion sections as locations where Caltrans District 7, other Caltrans Districts, and other public agencies that implement transportation improvements could benefit from advance mitigation planning—hereafter called the “GAI” (Figure ES-1, Figure 1-3).

Because the sub-ecoregions form an ecological boundary and not a political boundary, some of the GAI overlaps other Caltrans Districts (Figure 1-3). No transportation infrastructure is located within the portion of the GAI that overlaps Caltrans District 6. However, in addition to Caltrans District 7, in the GAI, transportation projects are planned for Caltrans Districts 5, 8, 11, and 12.

1.5.2. Species of Mitigation Need

Compensatory mitigation for species in the GAI was identified as both a historical transportation project compensatory mitigation need and an anticipated future transportation project compensatory mitigation need within Caltrans District 7. SHOPP transportation projects have historically been conditioned by natural resource regulatory agencies for some species more routinely than others and have benefited from mitigation credits, when available.

Caltrans does not typically need compensatory mitigation credits for species where impacts can be avoided or minimized. Hence, to further focus the planning effort, Caltrans District 7 identified species that, if compensatory mitigation credits were available, transportation projects could potentially benefit. These “species of mitigation need” are the coastal California gnatcatcher (*Polioptila californica*), California red-legged frog (*Rana draytonii*), Least Bell’s vireo (*Vireo bellii pusillus*), mountain lion (*Puma concolor*), and southwestern willow flycatcher (*Empidonax traillii extimus*). Coastal California gnatcatcher is a state species of special concern and is federally listed as threatened, California red-legged frog is federally listed as threatened and a state listed species of special concern, Least Bell’s vireo is federally and state listed as endangered, mountain lion is a state candidate for endangered, and southwestern willow flycatcher is federally and state listed as endangered. Threatened and endangered fish species were evaluated as aquatic resources (Section 1.5.3). These species inform the analysis of estimated impacts provided in Chapters 5 and 6, as well as the discussion in Chapter 7, *Wildlife Resources Conservation Goals and Objectives*, and Chapter 8, *Aquatic Resources Conservation Goals and Objectives*.

1.5.3. Aquatic Resources

Compensatory mitigation for aquatic resources⁷ and riparian habitat in the GAI were also identified as both a historical transportation project compensatory mitigation need and an anticipated future transportation project compensatory mitigation need within Caltrans

⁷ For the purposes of this document, aquatic resources include all fish, wetlands, and non-wetland waters regulated by CDFW, FWS, CCC, the State Water Board and RWQCBs, Corps, EPA, and NMFS.

District 7. SHOPP transportation projects have historically been conditioned by natural resource regulatory agencies for aquatic resources and riparian habitat, and have benefited from mitigation credits, when available.

The GAI overlaps 22 hydrologic unit code (“HUC”) sub-basins where compensatory mitigation for aquatic resources impacts are forecast:

- Aliso-San Onofre (18070301)
- Antelope-Fremont Valleys (18090206)
- Calleguas (18070103)
- Cuyama (18060007)
- Los Angeles (18070105)
- Middle Kern-Upper Tehachapi-Grapevine (18030003)
- Mojave (18090208)
- Newport Bay (18070204)
- San Antonio (18060009)
- San Gabriel (18070106)
- San Jacinto (18070202)
- San Luis Rey-Escondido (18070303)
- Santa Ana (18070203)
- Santa Barbara Coastal (18060013)
- Santa Clara (18070102)
- Santa Margarita (18070302)
- Santa Maria (18060008)
- Santa Monica Bay (18070104)
- Santa Ynez (18060010)
- Seal Beach (18070201)
- Ventura (18070101)
- Whitewater River (18100201)

These sub-basins inform the analysis of estimated threatened and endangered fish, wetland, non-wetland water, and riparian impact estimates provided in Chapters 5 and 6, as well as the discussion in Chapter 8, *Aquatic Resources Conservation Goals and Objectives*.

1.6 RAMNA

This RAMNA is a planning-level document that:

- Provides a desktop analysis of relevant available information pertaining to the portions of the Southern California Coast and Southern California Mountains and Valleys ecoregion sections, referred to as the GAI;
- Applies to fiscal years 2019/20 to 2028/29 (planning period), which is concurrent with the time period addressed by the SHOPP Ten-Year Book (Caltrans 2021a);

- Discusses potential compensatory mitigation conditions that may be placed on future transportation projects by the seven natural resource regulatory agency signatories⁸ to the *Master Process Agreement for Planning and Developing Advance Mitigation throughout California for the California Department of Transportation Advance Mitigation Program* (Caltrans et al. 2020);
- Focuses on wildlife habitats and aquatic resources that have a high probability of requiring transportation project-related compensatory mitigation in the GAI and planning period;
- Documents Caltrans' forecast of potential wildlife and aquatic resource⁹ compensatory mitigation needs for the GAI and planning period, as reported by the SAMNA (Caltrans 2021b);
- Identifies information that will be important to Caltrans when scoping any of the AMP's authorized activities in the GAI, in accordance with SHC § 800.6(a), including documenting the existing compensatory mitigation supply;
- Incorporates information and feedback received from outreach to the natural resource regulatory agencies, FHWA, MPOs, RTPAs, other public agencies that implement transportation projects, Native American tribes, interested parties, and the public; and
- Analyzes Caltrans' options to meet its compensatory mitigation needs in the GAI through the AMP's authorized activities.

Because early technical assistance and communication may increase the probability that advance mitigation projects promoted within and/or undertaken by Caltrans will successfully meet the AMP's purpose, in accordance with the AMP Guidelines, Caltrans has requested that this RAMNA be reviewed by FHWA, natural resource regulatory agencies, other transportation agencies (MPOs, RTPAs, and other public agencies that implement transportation improvements), Native American tribes, interested parties, and the public. Their reviews and any information they provide will also be consulted by Caltrans when it promotes and approves specific advance mitigation projects for development and funding (Caltrans 2019a).

1.7 Coordination History

With respect to external communications, the AMP Guidelines describe three communication milestones within the advance mitigation project planning process (Caltrans 2019a). Each is summarized in the following sections.

⁸ Natural resource regulatory signatories are CDFW; State Water Board; U.S. Army Corps of Engineers Los Angeles, Sacramento, and San Francisco districts; EPA; FWS; NMFS; and CCC.

⁹ *Aquatic resources* is defined in Section 1.5.3, footnote 8.

1.7.1. MPOs, RTPAs, and Other Transportation Agencies that Implement Transportation Improvements

The AMP guidelines state that Caltrans will contact MPOs, RTPAs, and other public agencies that implement transportation projects to request specific information about their potential STIP transportation projects, to help inform the potential demand for compensatory mitigation in that area (Section 7.2 of Caltrans 2019a). District 7 Transportation Planning conducted outreach and contacted the partners listed in Table 1-3.

Table 1-3. Regional Transportation Interaction and Outreach Summary

Date	Description
September 2019, October 2019, November 2019, February 2020	Southern California Association of Governments. Discussed STIP-eligible transportation project list.
May 10, 2021	Southern California Association of Governments, Alameda Corridor Construction Authority, Los Angeles Department of Transportation. Discussed STIP-eligible transportation project list.
May 6, 2021	Ventura County Transportation Commission. Discussed STIP-eligible transportation project list.

1.7.2. RAMNA Review

The AMP Guidelines (Caltrans 2019a) state:

Before the RAMNA will be used to support advance mitigation project planning, Caltrans will, per 23 USC 169(a): consult with each natural resource regulatory agency with jurisdiction over the environmental resources considered in the RAMNA; make a draft of the RAMNA available for review and comment by applicable natural resource regulatory agencies, FHWA, Native American Tribes, local transportation agencies, local advance mitigation programs, local interested parties, and the public; request that, along with their review, natural resource regulatory agencies, Native American Tribes, FHWA, local transportation agencies, local advance mitigation programs, interested parties, and the public provide Caltrans any additional information relevant to and appropriate for the RAMNA; consider any comments and information received from natural resource regulatory agencies, FHWA, Native American Tribes, local transportation agencies, local advance mitigation programs, local interested parties, and the public on the draft RAMNA; and incorporate information and address such comments in the final RAMNA as appropriate.

On July 23, 2021, Caltrans distributed this RAMNA for review by FHWA, natural resource regulatory agencies, other transportation agencies (MPOs, RTPAs, and other public agencies that implement transportation improvements), Native American tribes, interested parties, and the public. Table 1-4 lists the commenters and the date of their

communication. All comments received were considered, addressed, and incorporated into the document, as appropriate.

Table 1-4. Comments Received by Caltrans on the RAMNA

Commenter	Date of Comment Letter
CDFW ^a	October 1, 2021
CCC	September 23, 2021
EPA	September 30, 2021
FWS	September 29, 2021
Corps, Los Angeles District	September 28, 2021
State Water Board	September 30, 2021
NMFS	November 9, 2021
TreePeople Land Trust	August 27, 2021
Land Veritas Corporation	August 20, 2021
Southern California Association of Governments	November 3, 2021
Fernandeño Tataviam Band of Mission Indians	September 15, 2021 ^b

^a SHC § 800 et seq. specifically directs Caltrans to consult with CDFW on all activities pursuant to the AMP.

^b Met to discuss Caltrans Advance Mitigation Program and advance mitigation planning for Caltrans District 7.

1.7.3. Interagency Meeting and Coordination

The Master Process Agreement states that prior to finalizing the RAMNA, “Caltrans will arrange and facilitate at least one ... meeting [with natural resource regulatory agencies] to discuss the RAMNA, conservation goals and objectives, overlapping agency statutory and regulatory requirements, and other relevant topics” (Section IV, Subsection A, Provision 6). In accordance with the Master Process Agreement, a meeting between Caltrans and the natural resource regulatory agencies was held within 60 days of distribution of the RAMNA. The meeting participants and meeting dates are presented in Table 1-5. The discussion has informed this document.

Table 1-5. Interagency Meetings

Meeting Participants ^a	Meeting Date
CCC, CDFW, Corps, EPA, FWS, State Water Board	September 21, 2021
CCC	October 4, 2021
CDFW	October 15, 2021
Corps, Los Angeles District	September 29, 2021
EPA	October 1, 2021
FWS	October 14, 2021
State Water Board	October 15, 2021

^a With Caltrans

1.8 Document Organization

This document is organized as shown in Table 1-6.

Table 1-6. Document Organization

Chapter	Title	Content
Chapter 1	Introduction	This chapter introduces the RAMNA, placing it in context of the AMP Guidelines, transportation network, and regulatory framework.
Chapter 2	Environmental Setting	This chapter describes the GAI analyzed in the RAMNA. It relies on geospatial data from the SAMNA Reporting Tool and other readily available information.
Chapter 3	Relevant Plans, Policies, and Regulations	This chapter briefly describes laws, regulations, comprehensive plans, conservation plans, and land management plans that are applicable and relevant to the GAI that can inform both regional understanding and advance mitigation scoping.
Chapter 4	Existing Mitigation Opportunities	This chapter summarizes the mitigation credits (or similar) currently available to Caltrans and/or pending that are applicable to the environmental resources discussed in the RAMNA and located within or in the vicinity of the GAI.
Chapter 5	Modeled Estimated Impacts	This chapter summarizes the SAMNA forecast and regional estimates of compensatory mitigation need for the GAI.
Chapter 6	Benefiting Transportation Project Considerations	This chapter summarizes relevant information about potentially benefiting transportation projects, including scheduling considerations and constraints. A time frame for the need for forecast mitigation is provided and analyzed. The potentially benefiting transportation projects' acceleration priorities are documented in this chapter.
Chapter 7	Wildlife Resources Conservation Goals and Objectives	This chapter presents Caltrans' understanding of the GAI's wildlife conservation goals and objectives, with which Caltrans seeks to align its advance mitigation projects.

Chapter	Title	Content
Chapter 8	Aquatic Resources Conservation Goals and Objectives	This chapter presents Caltrans' understanding of the GAI's aquatic, wetland, and water resources conservation goals and objectives, with which Caltrans seeks to align its advance mitigation projects.
Chapter 9	Assessment of Authorized Activities	This chapter describes options and analyzes the feasibility of purchasing and/or establishing mitigation credits (or similar) in the GAI that have a high probability of successfully accelerating transportation project delivery and protect natural resources through transportation project mitigation.
Chapter 10	References	This chapter lists references cited in the RAMNA.
Appendices	Various	<p>Appendices supporting this document:</p> <p>Appendix A – GIS Sources</p> <p>Appendix B – Ecoregion Subsection Descriptions</p> <p>Appendix C – Land Cover Types</p> <p>Appendix D – Certified Local Coastal Programs</p> <p>Appendix E – Complete SAMNA Species Results</p> <p>Appendix F – Hydrologic Units</p> <p>Appendix G – List of 303(d) Impaired Waters</p> <p>Appendix H – Aquatic Resource Locations</p> <p>Appendix I – Transportation Project Activity List</p> <p>Appendix J – Conservation and Mitigation Bank Service Areas Outside of District 7</p> <p>Appendix K – Aquatic Resources Impact Estimates, by Transportation Project Delivery Year, for Sub-basins in District 5 within the GAI</p> <p>Appendix L – Aquatic Resources Impact Estimates, by Transportation Project Delivery Year, for Sub-basins in District 7 within the GAI</p> <p>Appendix M – Aquatic Resources Impact Estimates, by Transportation Project Delivery Year, for Sub-basins in District 8 within the GAI</p> <p>Appendix N – Aquatic Resources Impact Estimates, by Transportation Project Delivery Year, for Sub-basins in District 11 within the GAI</p> <p>Appendix O – Aquatic Resources Impact Estimates, by Transportation Project Delivery Year, for Sub-basins in District 12 within the GAI</p>

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2. ENVIRONMENTAL SETTING

In this chapter, Caltrans describes the GAI in terms of vegetation, land ownership, topography, coastal zone, climate, land cover, invasive species, special-status species, connectivity, and aquatic resources. Aquatic resources consist of fish, wetlands, and non-wetland water resources. Intended to inform advance mitigation project scoping, this assessment relied on readily available literature and GIS sources, including the vegetation and other geospatial data layers developed for the SAMNA Reporting Tool (Caltrans 2021b). Sources used for this assessment are cited throughout the chapter, and links to GIS sources are provided in Appendix A.

On each figure, Caltrans has provided the general location of planned SHOPP and STIP-eligible transportation projects that, during the 10-year planning period addressed by this document, natural resource regulatory agencies may condition with compensatory mitigation. The GAI's road infrastructure is described in Chapter 1, and additional information about planned SHOPP and STIP-eligible transportation projects is provided in Chapter 5.

2.1 Southern California Coast and Southern California Mountains and Valleys Ecoregion Subsections in the GAI

The GAI encompasses approximately 7.8 million acres in southern California. It consists of the 13 subecoregions within the Southern California Coast and Southern California Mountains and Valleys ecoregion sections that Caltrans District 7 overlaps (Table 2-1, Figures 2-1 and 2-2). Ecoregion sections are defined as the largest ecological unit of the U.S. Department of Agriculture ("USDA"), Forest Service ("USFS") National Hierarchical Framework of Ecological Units, which are nested within larger provinces (Cleland et al. 1997). The Southern California Coast ecoregion section is within the larger California Coastal Chaparral Forest and Shrub Province, and the Southern California Mountains and Valleys ecoregion section is within the larger California Coastal Range Open Woodland – Shrub – Coniferous Forest – Meadow Province (McNab et al. 2007).

Ecoregion sections and subsections in the GAI were extracted from the SAMNA Reporting Tool (Caltrans 2021b). Brief ecoregion subsection descriptions are provided in Appendix B. Land cover is described by ecoregion subsection in Section 2.6 and is depicted on maps in Appendix C.

Table 2-1. Subsections of the Southern California Coast and Southern California Mountains and Valleys Ecoregion Sections in the GAI

Section	Subsection Name	Code ^a	Acreage ^b	Subsection as Percentage of GAI ^b
Southern California Coast	Santa Ynez Valleys and Hills	261Ba	613,552	8
Southern California Coast	Santa Ynez-Sulphur Mountains	261Bb	821,262	11
Southern California Coast	Oxnard Plain-Santa Paula Valley	261Bd	245,997	3
Southern California Coast	Simi Valley-Santa Susana Mountains	261Be	342,315	4
Southern California Coast	Santa Monica Mountains	261Bf	259,691	3
Southern California Coast	Los Angeles Plain	261Bg	1,316,340	17
Southern California Coast	San Rafael-Topatopa Mountains	M262Ba	1,046,504	13
Southern California Mountains and Valleys	Northern Transverse Ranges	M262Bb	806,180	10
Southern California Mountains and Valleys	Sierra Pelona-Mint Canyon	M262Bc	331,064	4
Southern California Mountains and Valleys	San Gabriel Mountains	M262Bd	570,166	7
Southern California Mountains and Valleys	Upper San Gabriel Mountains	M262Be	276,218	4
Southern California Mountains and Valleys	Santa Ana Mountains	M262Bf	510,723	7
Southern California Mountains and Valleys	Fontana Plain-Calimesa Terraces	M262Bj	666,799	9
Total			7,806,811	100%

Source: Caltrans 2021c

^a USFS ecological unit subsection codes

^b Numbers were rounded to the nearest whole number.

Figure 2-1. Ecoregion Sections and the GAI



2.2 Land Ownership in the GAI

The GAI spans parts of Los Angeles, Santa Barbara, Ventura, Orange, Riverside, San Bernardino, Kern, and San Diego Counties (Figure 2-3). Approximately 50.2 percent of land in the GAI is privately owned and managed (Table 2-2, Figure 2-3). Approximately 40.5 percent is federally administered and managed by the USDA USFS; the U.S. Department of the Interior’s Bureau of Land Management (“BLM”), FWS, and National Park Service (“NPS”); the U.S. Department of Defense, on its military bases; the U.S. Bureau of Reclamation; and the Corps. National park land includes the Santa Monica Mountains National Recreation Area. USFS land includes the Los Padres, Angeles, and Cleveland National Forests. Approximately 3.8 percent of land in the GAI consists of state-owned and -managed lands, including lands managed by the California Department of Parks and Recreation, CDFW, California Department of Water Resources, California State Lands Commission, and other public lands. The remaining 5.8 percent of land in the GAI is owned or managed by Native American tribes, counties, cities, special districts, and nonprofit conservancies and land trusts (Table 2-2, Figure 2-3).

Table 2-2. Land Ownership in the GAI

Land Owner or Land Use	Number of Parcels	Total Acreage per Agency/Owner ^a	Ownership as Percentage of GAI
USFS	314	2,801,813	36.1
Private (unassigned)	61,624	2,528,055	32.6
Private (agricultural/rural)	5,140	1,371,083	17.7
City, county, and special district	7,931	318,058	4.1
U.S. military bases	148	219,697	2.8
Other public lands ^b	24,808	148,280	1.9
California Department of Parks and Recreation	135	117,182	1.5
Nonprofit conservancy and land trust	546	116,622	1.5
NPS	88	33,703	0.4
BLM	337	22,405	0.3
U.S. Bureau of Reclamation	16	21,241	0.3
CDFW	85	18,929	0.2
Tribal lands	54	18,606	0.2
Corps	63	13,062	0.2

Land Owner or Land Use	Number of Parcels	Total Acreage per Agency/Owner ^a	Ownership as Percentage of GAI
FWS	13	9,360	0.1
California Department of Water Resources	4	7,803	0.1
Total		7,765,899	100%

Sources: Bureau of Indian Affairs; California Protected Lands Database; California Conservation Easement Database; Caltrans 2021c; U.S. Census Bureau; USDA; and California Department of Technology for land parcels

^a Numbers were rounded to the nearest whole number.

^b Includes, but is not limited to, San Diego State, California State Lands Commission, and University of California.

2.2.1. Protected Lands

The California Protected Areas Database, developed by GreenInfo Network, provides an inventory of lands that are owned in fee or protected for open space purposes, throughout California, by over 1,000 public and nonprofit organizations. These protected lands are managed for the preservation of biological diversity and other natural, recreational, and cultural uses. It is important to note, however, that these data are based on best available public information at the time of development and, as such, may not represent all protected lands in California.

In the California Protected Areas Database, lands are assigned U.S. Geological Survey (“USGS”) Gap Analysis Program (“GAP”) status ranks that define the degree of protection for biodiversity conservation using a 1 to 4 coding system. Areas with a GAP status of 1 are managed for biodiversity; areas with a GAP status of 2 are managed for biodiversity with disturbance events suppressed; areas with a GAP status of 3 are managed for multiple uses, potentially including mining or off-road vehicle use; and areas with a GAP status of 4 have no known mandate for biodiversity protection. The method of applying these California Protected Areas Database ranks is done in collaboration with the USGS’ Protected Areas Database of the U.S.

Not all California Protected Areas Database lands have GAP status ranks, and some may be out of date. Nevertheless, available protected lands and their associated GAP status ranks are indicated on Figure 2-4. As Figure 2-4 shows, no GAP status 1 lands are identified in the database for the GAI, and most of the planned SHOPP transportation projects are in areas with a GAP status of 3. Most of the planned STIP-eligible transportation projects are in areas with no GAP status. Lands with conservation easements are also identified in the California Protected Areas Database; some of the planned SHOPP and STIP-eligible transportation projects are proximate to conservation easements (Figure 2-4).

Figure 2-3. Land Ownership

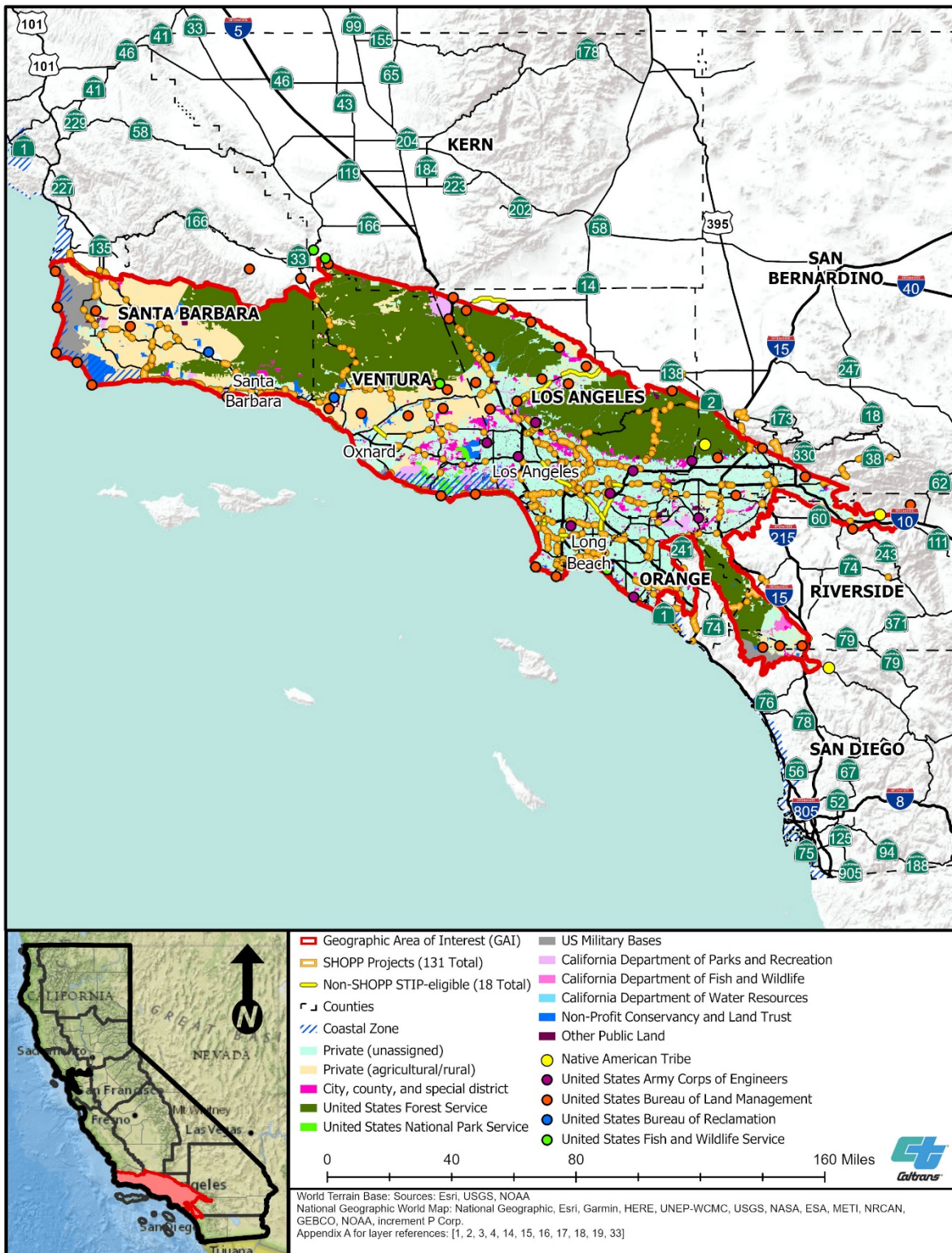


Figure 2-4. Protected Lands



2.3 Topography

The 22 sub-basins that make up the GAI are bounded by the Pacific Ocean on the west and south, the Southern Coast Ranges to the north, the Transverse Ranges to the north and east, and the Peninsular Ranges to the southeast (Figure 2-5). Mountain ranges in the GAI include the San Gabriel Mountains, Santa Monica Mountains, Santa Susana Mountains, Simi Hills, and Santa Ynez Mountains. The GAI includes narrow, low to moderate elevation ranges and broad fault blocks, alluvial lowlands, and coastal terraces (McNab et al. 2007). Elevations in the GAI range from sea level to approximately 10,066 feet above mean sea level in the San Gabriel Mountains.

2.4 Coastal Zone

Public Resources Code Section 30103(a) of the California Coastal Act defines California's coastal zone as the land and water area of the State of California from the Oregon border to the border of the Republic of Mexico, as depicted on maps identified and set forth in the Coastal Act of 1976, and represents the jurisdiction of the CCC. The coastal zone extends seaward to the state's outer limit of jurisdiction, including all offshore islands, and extends inland generally 1,000 yards from the mean high tide line of the sea. In significant coastal estuarine, habitat, and recreational areas, the coastal zone extends inland to the first major ridgeline paralleling the sea or 5 miles from the mean high tide line of the sea, whichever is less, and in developed urban areas the zone generally extends inland less than 1,000 yards. As indicated on Figure 2-6, the coastal zone covers a small portion of the GAI; even so, several planned transportation projects are expected to occur in the coastal zone.

2.4.1. Local Coastal Programs

The Coastal Act requires mitigation for impacts on coastal habitats and other types of coastal resource impacts (for example, visual impacts) that are outside the scope of this document. The CCC regulates potentially impactful projects in the coastal zone primarily through the issuance of Coastal Development Permits. Local Coastal Programs ("LCPs") are planning tools used to guide development in the coastal zone through preparation of land use plans and implementation of zoning ordinances. In coastal local jurisdictions where the CCC has reviewed an LCP for consistency with Coastal Act requirements and certified the LCP, the local government assumes Coastal Development Permit authority within its jurisdiction, with certain exceptions (the CCC retains jurisdiction on tidelands—including former tidelands—submerged land, and land subject to the public trust).

Figure 2-5. Topography



Figure 2-6. Coastal Zone



Mapped in Appendix D, there are 22 CCC-certified LCPs used by local governments to guide development in the coastal zone in coordination with the CCC. There are 19 LCP areas or segments that have not been certified by the CCC. In addition, there are 10 uncertified areas: 4 Areas of Deferred Certification and 6 other uncertified areas. An uncertified area may be an area that was created through annexation, an area that was subsequently identified but may not have been included in an LCP segment, or an area that has applied for certification but has not yet been accepted by the CCC. A type of uncertified area, Areas of Deferred Certification are geographic areas that have not been officially segmented for purposes of LCP preparation and were not certified during review of the LCP. The CCC retains permit authority until an LCP is effectively certified for these areas.

2.4.2. Environmentally Sensitive Habitat Areas

The California Coastal Act defines an environmentally sensitive habitat area (“ESHA”) as “any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments” (Section 30107.5). Under the Coastal Act Section 30240, an ESHA shall be protected against any significant disruption of habitat values, and only uses dependent on those resources (for example, nature study) are allowed in those areas. Furthermore, development in areas adjacent to an ESHA must be sited and designed to prevent significant degradation of the ESHA. Whether a habitat or location is considered an ESHA is determined by evaluating the on-ground-resources and surrounding ecological context.

Although maps or descriptions of ESHAs are included in some of the LCPs covering the GAI, there may be ESHAs that have been added since the LCPs were certified because of new listings of special-status species or the identification of new sensitive natural communities or other areas that meet the definition of ESHAs under Coastal Act Section 30107.5. Specific ESHA definitions and policies vary among the 22 CCC-certified LCPs in the GAI (Appendix D). LCPs may list specific species habitats as ESHAs or may designate geographic areas as ESHAs because of the presence of rare or valuable plants or animal species or habitat. Designation of ESHAs is not limited to habitat for federally or state listed species or designated critical habitat. State Water Board designated ocean areas of special biological significance (“ASBS”; see Section 2.18); coastal wetlands and lagoons; tidepools; wilderness and primitive areas; and more may also be considered ESHAs. ESHAs are typically threatened by habitat fragmentation, disturbance, degradation, or other anthropogenic factors. Areas identified as ESHAs in the LCPs in the GAI include, but are not limited to, coastal sage scrub, coastal bluff scrub, coastal dunes, oak woodland, native grassland, riparian habitat, white-tailed kite habitat, raptor roosting habitat, monarch butterfly habitat, western snowy plover habitat, least tern habitat, marshes, vernal pools, estuaries, streams, wetlands, subtidal reefs, rocky points and intertidal areas, tidepools, sloughs, kelp beds, marine mammal rookeries and hauling grounds, beach and shoreline, and seabird nesting and roosting areas (City of Goleta 2021; City of Santa Monica 2018; Santa Barbara County 2019).

2.4.3. Critical Coastal Areas

California's Critical Coastal Areas ("CCA") program fosters collaboration among local stakeholders and government agencies to coordinate efforts to protect high resource value coastal waters from polluted runoff. This nonregulatory program, which is part of California's Nonpoint Source Pollution Program, is coordinated by CCC staff through a multiagency statewide committee. The committee includes, but is not limited to, the CCC, Caltrans (stormwater), CDFW, the State Water Boards, and EPA.

The criteria for identifying CCAs reflect the CCA program's dual goals of improving degraded coastal water quality and providing extra protection from polluted runoff to coastal waters with a recognized high resource value. To be a CCA, an area must meet one or more of the following criteria:

- Coastal watershed areas where an impaired waterway on the 1994 303(d) list is, or flows into, a bay or estuary.
- Coastal watershed areas where an impaired waterway on the 1998 303(d) list flows into a state or federal Marine Managed Area.
- Shoreline areas within San Francisco Bay where an impaired waterway on the 1998 303(d) list flows into wildlife refuges, waterfront parks, and beaches, as specified in the San Francisco Bay Plan.
- Coastal watershed areas that flow into an ASBS.
- Coastal watershed areas where an impaired waterway on the 2010 303(d) list is, or flows into, a Principal Bay or Estuary, as identified in CDFW (2001).
- Coastal watershed areas where an impaired waterway on the 2010 303(d) list is adjacent to a state Marine Protected Area, as defined in 14 Code of California Regulations § 632(a)(1)(A–C).

For more information about water quality and the 303(d) list, see Section 2.15. ASBSs are discussed in Section 2.18.

Statewide, 119 CCAs have been identified, 15 of which occur in the GAI. These are listed below by sub-basin:

- Santa Ynez Sub-basin
 - Santa Ynez River CCA
 - Goleta Slough CCA
 - Carpinteria Marsh CCA
- Calleguas Sub-basin
 - Mugu Lagoon/Revelon Slough CCA
- Santa Monica Bay Sub-basin
 - Mugu Lagoon to Latigo Pt. CCA
 - Malibu Creek CCA
 - Topanga Canyon Creek CCA

- Santa Monica Canyon CCA
- Ballona Creek CCA
- Newport Bay Sub-basin
 - Upper Newport Bay CCA
 - Newport Beach Marine Life Refuge CCA
 - Irvine Coast Marine Life Refuge CCA
 - Heisler Park Ecological Reserve CCA
- Aliso-San Onofre Sub-basin
 - Aliso Creek CCA
 - San Juan Creek CCA

The inland boundary of a CCA is the coastal zone boundary, as defined in the California Coastal Act. The shoreline boundary is determined on a case-by-case basis.

2.5 Climate

The GAI is characterized by large variations in temperature, humidity, precipitation, and cloud cover on account of topographical variation. The coastal plains have mild, wet winters and warm, dry summers characteristic of a subtropical Mediterranean climate. The inland slopes and basins of the Transverse Ranges have more extreme climatic variation. Most of the precipitation occurs as rainfall from November to March, with snowfall at high elevations. In Los Angeles County, the average annual rainfall is 15.7 inches, ranging from 13.7 inches in the coastal plains to 34.2 inches in the mountains. In Ventura County, average annual rainfall is 16.1 inches, with the coastal lowlands receiving as little as 5 inches in dry years and the mountains receiving as much as 40 inches in wet years (Los Angeles RWQCB 2020). The part of the GAI that includes portions of Orange, Riverside, and San Bernardino Counties has an average annual rainfall of 15 inches (Santa Ana RWQCB 2019).

In the next 30 years, the climate is expected to change. Sea-level rise predictions used in California for planning purposes are summarized in Section 2.5.1. Results of Caltrans' climate vulnerability assessment are summarized in Section 2.5.2. The predicted resilience of the GAI to effects resulting from climate change is summarized in Section 2.5.3.

2.5.1. State of California Sea-level Rise Guidance

The CNRA and Ocean Protection Council ("OPC") *State of California Sea-Level Rise Guidance: 2018 Update* provides guidance to California state agencies for incorporating sea-level rise projections into planning, permitting, investment, and other decisions (CNRA and OPC 2018).

The stepwise approach provides guidance on how to select sea-level rise projections by evaluating risk and vulnerability. The following recommendations provide guidance on preferred sea-level rise planning and adaptation approaches, with an understanding that

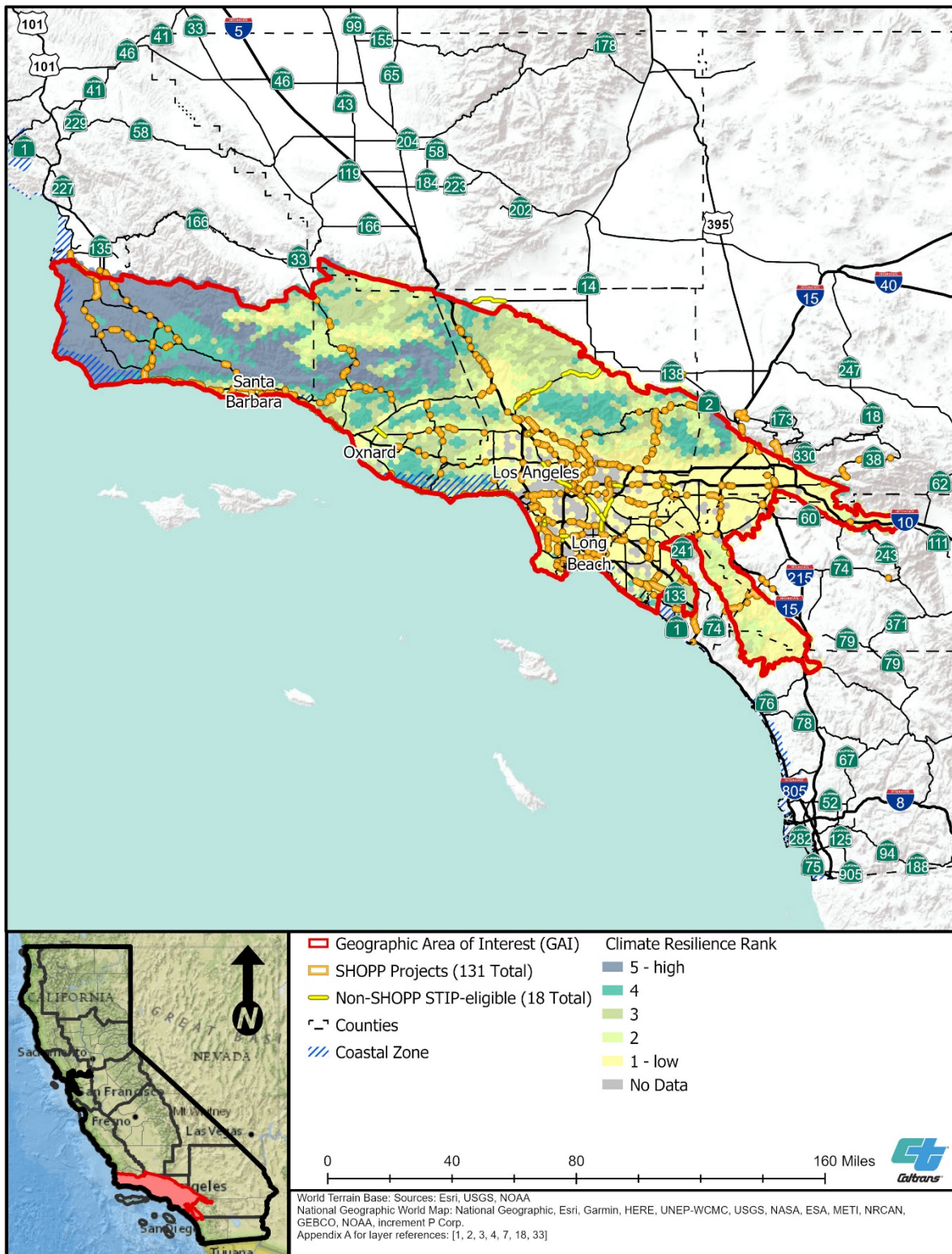
the diversity of communities, uses, and natural resources along California's coastline, as well as planning for new development versus existing structures, may merit different approaches to building resilience. Adaptation planning and strategies should:

1. Prioritize social equity, environmental justice, and the needs of vulnerable communities.
2. Prioritize protection of coastal habitats and public access.
3. Consider the unique characteristics, constraints, and values of existing water-dependent infrastructure, ports, and public trust uses.
4. Consider episodic increases in sea-level rise caused by storms and other weather-related events.
5. Coordinate and collaborate with local, state, and federal agencies when selecting sea-level rise projections; where feasible, use consistent sea-level rise projections across multiagency planning and regulatory decisions.
6. Consider local conditions to inform decision making.
7. Include adaptive capacity in design and planning.
8. Assess risk and conduct adaptation planning at community and regional levels, when possible.

The guidance includes sea-level rise projections centered on the year 2030, which overlaps the RAMNA's planning period (CNRA and OPC 2018). The guidance is based on the *Rising Seas in California: An Update on Sea-Level Rise Science* report (OPC 2017), which reflects the most current understanding of sea-level rise science and modeling of global sea-level rise. Based on the CNRA and OPC (2018) guidance report, the Santa Barbara, Santa Monica, and Los Angeles tide gauges are located along the southern California coast in the GAI (Figure 2-7).

Sea-level rise projections for 2030 are based on the representative concentration pathway 8.5 (high emissions scenario) because that represents expected conditions over the next 10 years. The 2030 sea-level rise projections range from 0.4 to 0.7 foot for the Santa Barbara tide gauge, 0.5 to 0.8 foot for the Santa Monica tide gauge, and 0.5 to 0.7 foot for the Los Angeles tide gauge (CNRA and OPC 2018).

Figure 2-7. Terrestrial Climate Resilience Rankings



2.5.2. Climate Vulnerability Assessment

In 2019, Caltrans performed a statewide climate change vulnerability assessment for the SHS (Caltrans 2019b). The analysis provided in the *Caltrans Climate Change Vulnerability Assessments: District 7 Technical Report* (Caltrans 2019b) is based on global climate change data compiled by the Intergovernmental Panel on Climate Change. Caltrans applies three future emissions scenarios for greenhouse gas emission concentrations in the technical report—representative concentration pathway 2.6, which assumes global annual greenhouse gas emissions will peak in the next few years and then begin to decline substantially; representative concentration pathway 4.5, which assumes emissions will peak around 2040 and then begin to decline; and representative concentration pathway 8.5, which assumes that high emission trends continue to the end of the century—for three future 30-year periods centered on the years 2025 (2010 to 2039), 2055 (2040 to 2069), and 2085 (2070 to 2099).

The effects of climate change in the GAI pose risks for transportation infrastructure reliability and capacity. Transportation systems were designed for historical climate conditions; changing climatic conditions, including an increased frequency of extreme weather events, are expected to disrupt and damage the SHS. Predicted climate change effects consist of projected extended periods of higher temperatures in the summer; large fluctuations in precipitation, with dry years becoming drier and wet years becoming wetter; and an increased risk of wildfire and flooding over the three time periods analyzed in the technical report (Caltrans 2019b). Climate change effects during the three future 30-year periods are expected to exacerbate coastal hazards, including storm surges that increase erosion, scour, and washouts underneath the SHS, damaging highways, drainage infrastructure, and rock slope shore protection; increase flooding, landslide, and mudslide frequency; and worsen the severity of wildfires, which can destabilize slopes, destroy roadside infrastructure, and cause debris to collect in drainage infrastructure. At higher elevations, extreme temperatures are expected to rise, which may result in tree mortality and changing snowmelt patterns (Caltrans 2019b).

Local relative sea-level trends based on tide gauge measurements of monthly mean sea level data from 1962 to 1990 for the Santa Barbara tide gauge, 1933 to 2019 for the Santa Monica tide gauge, and 1923 to 2019 for the Los Angeles tide gauge indicate that sea levels along the coast of the GAI have risen at a rate equivalent to 0.51 foot, 0.34 foot, and 0.73 foot in 100 years, respectively (National Oceanic and Atmospheric Administration [NOAA] n.d.). Based on the NOAA model for estimated sea-level rise presented in the *Caltrans Climate Change Vulnerability Assessments: District 7 Technical Report*, the Pacific Coast Highway is one of the sections of the SHS that could become more vulnerable to high surf damage and periodic storm surges as sea levels rise (Caltrans 2019b).

2.5.3. Climate Resiliency

A climate change-resilient natural community area is a terrestrial location expected to remain stable in the face of climate change (CDFW 2018a). The predicted resilience of

the GAI to effects resulting from climate change was acquired from CDFW's Areas of Conservation Emphasis ("ACE," version 3) terrestrial climate change resilience dataset. This dataset consists of the modeled probability that a given terrestrial location may function as a plant or wildlife refugium from climate change, meaning that it would be relatively buffered from the effects of climate change, conditions would likely remain suitable for plants and wildlife currently residing in the area, and ecological functions would be more likely to remain intact. The ACE dataset combines climate refugia model results from eight future climate scenarios based on different combinations of global climate models, emissions scenarios, and time horizons. The eight scenarios assessed included two potential future climates—both a hotter and drier future and a warmer and wetter future; two future carbon dioxide ("CO₂") scenarios—one with no reductions in CO₂ emissions and one with a peak in 2040 followed by a significant decline in CO₂ emissions; and two 29-year time intervals—2040 to 2069 and 2070 to 2099. Terrestrial locations were assigned climate resilience ranks ranging from 1 (low resilience or low probability that the terrestrial location will contain climate refugia) to 5 (high resilience or high probability that the terrestrial location will contain climate refugia) (CDFW 2018a).

Resiliency is an important consideration when establishing compensatory mitigation. The terrestrial climate change resilience rank from the ACE dataset (CDFW 2018a) is presented on Figure 2-7. There is a clear pattern of higher resilience in the westernmost and highest elevation (Transverse Ranges) portions of the GAI (Figures 2-4 and 2-6). Resilience in these areas ranges from 3 to 5, with the vast majority of this area showing climate resiliency rankings of 4 or 5. Resilience is lowest in the lower-elevation central and southern portions of the GAI.

2.6 Land Cover Types

General land cover types and the subcoregions in which they occur are depicted on the maps provided in Appendix C. Land cover types in the GAI were extracted from the SAMNA, which developed its vegetation data layer by merging CDFW's California Wildlife Habitat Relationships ("CWHR") Vegetation Classification and Mapping Program GIS database, the USFS Classification and Assessment with Landsat of Visible Ecological Groupings, and the California Department of Forestry and Fire Protection vegetation layer (Caltrans 2021d). Based on these data, shrub-dominated habitats account for the largest habitat type, encompassing 45.7 percent of the GAI, with mixed chaparral the most common (Table 2-3, Appendix C). Developed habitats and non-vegetated habitat types (barren areas) combined account for 29.1 percent of the GAI, with urban the most common. Tree-dominated habitats account for 13.3 percent of the GAI, with coastal oak woodland the most common. Herbaceous-dominated habitats account for 11.5 percent of the GAI, with annual grassland the most common. Aquatic habitats account for 0.5 percent of the GAI, with lacustrine the most common. Land cover is generally shown on Figure 2-8.

Table 2-3. Land Cover Types in the GAI

CWHR Habitat Type	Acres^a	Cover as Percentage of GAI^b
Tree-dominated Habitats	703,446	13.25
Blue Oak Woodland	1,572	0.03
Blue Oak-Foothill Pine	1,819	0.03
Closed-Cone Pine-Cypress	1,677	0.03
Coastal Oak Woodland	249,870	4.71
Desert Riparian	32	<0.01
Eastside Pine	19,276	0.36
Eucalyptus	3,406	0.06
Jeffrey Pine	19,056	0.36
Joshua Tree	265	<0.01
Juniper	21,198	0.40
Montane Hardwood	96,931	1.83
Montane Hardwood-Conifer	39,613	0.75
Montane Riparian	3,464	0.07
Palm Oasis	3	<0.01
Pinyon-Juniper	109,370	2.06
Ponderosa Pine	810	0.02
Sierran Mixed Conifer	84,061	1.58
Subalpine Conifer	377	0.01
Valley Foothill Riparian	45,093	0.85
Valley Oak Woodland	4,572	0.09
White Fir	981	0.02
Shrub-dominated Habitats	2,425,642	45.68
Alkali Desert Scrub	50	<0.01
Bitterbrush	666	0.01
Chamise-Redshank Chaparral	119,244	2.25
Chamise-Redshank Chaparral; Mixed Chaparral	<1	<0.01
Coastal Scrub	530,934	10.00
Desert Scrub	21,690	0.41
Desert Wash	30,885	0.58

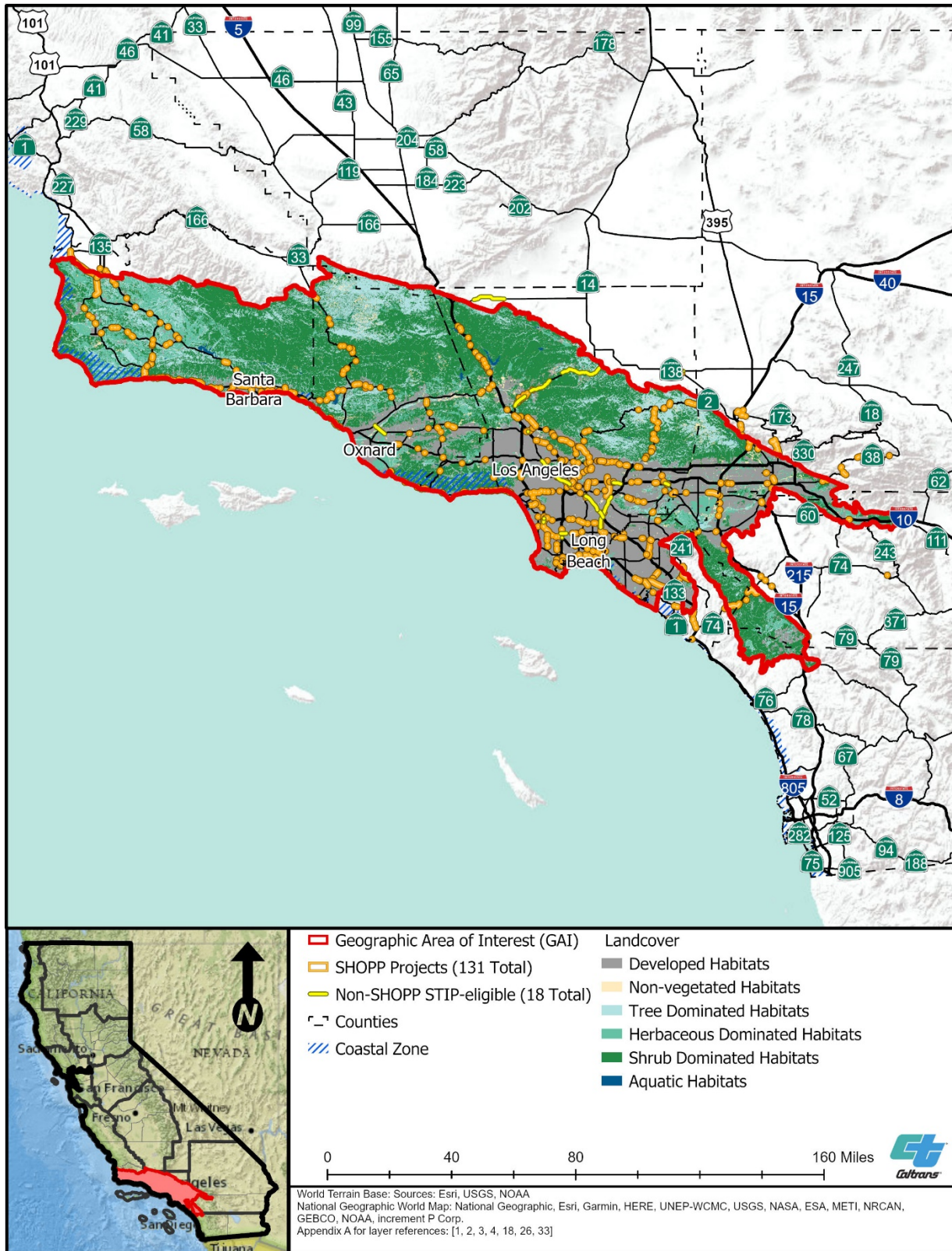
CWHR Habitat Type	Acres^a	Cover as Percentage of GAI^b
Mixed Chaparral	1,606,282	30.25
Montane Chaparral	67,813	1.28
Sagebrush	48,079	0.91
Herbaceous-dominated Habitats	612,291	11.53
Annual Grassland	481,467	9.07
Fresh Emergent Wetland	3,729	0.07
Pasture	117,841	2.22
Perennial Grassland	4,699	0.09
Saline Emergent Wetland	3,095	0.06
Wet Meadow	1,460	0.03
Aquatic Habitats	24,339	0.46
Lacustrine	20,912	0.39
Marine	2	<0.01
Riverine	3,420	0.06
Riverine; Lacustrine	5	<0.01
Water	<1	<0.01
Developed Habitats	1,440,258	27.13
Cropland	1,795	0.03
Cropland; Orchard - Vineyard	727	0.01
Deciduous Orchard	92,768	1.75
Evergreen Orchard	4,957	0.09
Rice	2,133	0.04
Urban	1,330,858	25.06
Vineyard	7,020	0.13
Non-vegetated Habitats	103,720	1.95
Barren	103,720	1.95
Total	5,309,696	100%

Source: Caltrans 2021d

^a Numbers were rounded to the nearest whole number.

^b Numbers were rounded to the hundredths.

Figure 2-8. Major Land Cover^a



^a For greater detail, see Appendix C.

2.7 Invasive Species

Both invasive plant and animal species are known to occur in the GAI. Invasive species include plants and animals that are not native to an area, typically have high growth and reproductive rates, and are able to outcompete native plants and animals, often because of a lack of natural predators or controls (FWS 2012a; National Wildlife Federation 2019). Invasive species may affect native species, including special-status species, by directly competing for resources, preying on native species, introducing or spreading diseases, reducing the complexity and biodiversity of ecosystems, and altering soil chemistry and water availability (FWS 2012a). They can also increase wildfire potential (FWS 2012a; CDFW 2018b).

Three organizations maintain invasive species databases for California. The Invasive Species Council of California maintains a list of invasive plant and animal species throughout the state of California (California Invasive Species Advisory Committee 2010). The California Department of Food and Agriculture also maintains a list of noxious weeds for California (USDA Natural Resources Conservation Service 2003). The California Invasive Plant Council (“Cal-IPC”) maintains a California invasive plant inventory that categorizes nonnative plant species based on the severity of their potential ecological impacts (Cal-IPC 2021).

In the GAI, invasive plant species have been specifically identified as threats or stressors to terrestrial and aquatic biological resources (CDFW 2018b). Nonnative, invasive plant species with a high ranking by Cal-IPC are those that have the most severe ecological effects and are the most widely distributed geographically, although species with a moderate or limited ranking can also have negative local ecological effects. Invasive plant species that are identified as problematic for the Southern California Coast and Southern California Mountains and Valleys ecoregion sections in the California SWAP include, but are not limited to, giant reed (*Arundo donax*), black mustard (*Brassica nigra*), highway iceplant (*Carpobrotus edulis*), artichoke thistle (*Cynara cardunculus*), pampas grass (*Cortaderia selloana*), fennel (*Foeniculum vulgare*), English ivy (*Hedera helix*), perennial pepperweed (*Lepidium latifolium*), fountain grass (*Pennisetum setaceum*), castor bean (*Ricinus communis*), tamarisk or saltcedar (*Tamarix* spp.), and greater periwinkle (*Vinca major*) (CDFW 2015).

Additional invasive plant species that occur in the GAI include tree-of-heaven (*Ailanthus altissima*), wild oat (*Avena* spp.), Sahara mustard (*Brassica tournefortii*), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), cheatgrass (*Bromus tectorum*), tocalote (*Centaurea melitensis*), poison hemlock (*Conium maculatum*), Bermuda grass (*Cynodon dactylon*), barley (*Hordeum* spp.), Italian ryegrass (*Festuca perennis*), water primrose (*Ludwigia hexapetala* and *L. peploides*), water-milfoil (*Myriophyllum aquaticum* and *M. spicatum*), tree tobacco (*Nicotiana glauca*), Canary Island date palm (*Phoenix canariensis*), Himalayan blackberry (*Rubus armeniacus*), Russian thistle (*Salsola tragus*), Spanish broom (*Spartium junceum*), and Mexican fan palm (*Washingtonia robusta*) (Cal-IPC 2021).

Nonnative animals that are/may be present in the GAI and that can negatively affect aquatic species include western mosquitofish (*Gambusia affinis*), New Zealand mudsnails (*Potamopyrgus antipodarum*), quagga mussels (*Dreissena bugensis*), Asian clams (*Corbicula fluminea*), American bullfrog (*Lithobates catesbiana*), nonnative crayfish (*Procambarus* spp.), African clawed frog (*Xenopus laevis*), and introduced sport and bait fish, including sunfish, bass, bluegill, carp, and fathead minnow (CDFW 2015). Introduced nonnative animals such as bullfrogs, crayfish, and fish can negatively affect native animals such as California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), arroyo toad (*Anaxyrus californicus*), southwestern pond turtle (*Actinemys pallida*), and other aquatic species by competing for food resources, acting as disease vectors, and preying on the native animals (Hayes et al. 2016).

Nonnative animals that are/may be present in the GAI and that can negatively affect terrestrial wildlife or habitat through competition, predation, or parasitism include goldspotted oak borer (*Agrilus auroguttatus*), polyphagous shot hole borer (*Euwallacea* spp.), feral animals, brown-headed cowbirds (*Molothrus ater*), and red fox (*Vulpes vulpes*) (CDFW 2015). Invasive animal species that are/may be associated with urban areas include common ravens (*Corvus corax*), domestic dogs (*Canis lupus familiaris*), domestic cats (*Felis catus*), and Argentine ants (*Linepithema humile*) (CDFW 2015). The common raven is native to California, but is considered a subsidized predator, benefiting from urbanization and human-altered habitats to increase its range.

2.8 Special-status Species

Special-status species known to occur or with the potential to occur in the GAI were extracted from the SAMNA Reporting Tool's species-attributed vegetation data layer, which was developed using the CWHR (CDFW 2019a), the Jepson Herbarium's floristic province layer, CDFW's RareFind 5 database (CDFW 2019b), and other information (Caltrans 2021b). Special-status species included in the SAMNA are those that are considered federally and/or state threatened or endangered species, state candidate threatened or endangered species, state fully protected species, state species of concern, state rare species, and federal sensitive species (which includes species that are USFS sensitive and/or BLM sensitive). The species-attributed list developed for the SAMNA Reporting Tool depends on a species having a defined geographic range or having occurrences documented in the California Natural Diversity Database (Caltrans 2021b); although it is the best information currently available, the SAMNA Reporting Tool's species list highlights the uncertainties in this foundational information.

Threatened and endangered fish species with the potential to occur in the GAI are discussed in Section 2.17.4, and special-status terrestrial species are summarized below. Based on a search of the SAMNA Reporting Tool's species-attributed vegetation layer, 110 non-fish special-status species are known to occur or have the potential to occur in the portion of the GAI that lies within the Southern California Coast ecoregion section and 103 non-fish special-status species are known to occur or have the potential to occur in the portion of the GAI that lies within the Southern California Mountains and Valleys

ecoregion section. The numbers of these special-status species by habitat type are shown in Tables 2-4 and 2-5 for the Southern California Coast and Southern California Mountains and Valleys ecoregions, respectively. Because a species may use more than one habitat, the numbers are not additive.

The complete SAMNA results for terrestrial species by habitat type are provided in Appendix E. As described in Appendix E, for subspecies without documented home ranges, the SAMNA results are provided at the species level. Also, footnotes are included for those special-status subspecies that do not have the potential to occur in the GAI. Note that although SAMNA results are suitable for advance mitigation project scoping, establishing compensatory mitigation credits approved by one or more natural resource regulatory agency requires site-specific studies.

Table 2-4. Number of Potentially Occurring Special-status Species, by Land Cover Type – Southern California Coast Ecoregion Section in the GAI

Land Cover Type	Cover as Percentage of GAI	Plants	Invertebrates	Amphibians	Reptiles	Birds	Mammals
Tree-dominated Habitats	See below	See below	See below	See below	See below	See below	See below
Coastal Oak Woodland	<0.01	0	0	6	7	14	18
Eucalyptus	0.03	0	0	6	6	14	17
Montane Riparian	0.13	0	0	1	3	7	16
Sierran Mixed Conifer	2.22	0	0	2	2	9	14
Valley Foothill Riparian	0.06	0	0	5	7	16	17
Shrub-dominated Habitats	See below	See below	See below	See below	See below	See below	See below
Chamise-Redshank Chaparral	0.01	0	0	2	6	12	14
Coastal Scrub	<0.01	28	1	5	8	14	21
Desert Wash	0.41	0	0	1	2	6	16
Mixed Chaparral	0.58	19	0	6	7	13	19
Herbaceous-dominated Habitats	See below	See below	See below	See below	See below	See below	See below
Annual Grassland	13.25	15	2	5	6	19	18
Fresh Emergent Wetland	0.03	1	0	3	3	11	7
Pasture	0.03	0	0	0	2	5	13
Perennial Grassland	0.03	0	0	2	4	10	14
Aquatic Habitats	See below	See below	See below	See below	See below	See below	See below
Lacustrine	0.06	0	0	3	2	9	5

Land Cover Type	Cover as Percentage of GAI	Plants	Invertebrates	Amphibians	Reptiles	Birds	Mammals
Developed Habitats	See below	See below	See below	See below	See below	See below	See below
Deciduous Orchard	2.06	0	0	1	1	6	10
Evergreen Orchard	0.02	0	0	1	1	1	9
Urban	0.01	0	0	0	1	11	11
Non-vegetated Habitats	See below	See below	See below	See below	See below	See below	See below
Barren	0.02	0	0	0	2	12	11

Source: Caltrans 2021b

Table 2-5. Number of Potentially Occurring Special-status Species, by Land Cover Type – Southern California Mountains and Valleys Ecoregion Section in the GAI

Land Cover Type	Cover as Percentage of GAI	Plants	Invertebrates	Amphibians	Reptiles	Birds	Mammals
Tree-dominated Habitats	See below	See below	See below	See below	See below	See below	See below
Coastal Oak Woodland	<0.01	0	0	5	10	14	19
Eastside Pine	27.13	0	0	0	0	10	13
Jeffrey Pine	0.01	0	0	1	2	8	11
Montane Hardwood	0.04	0	0	5	4	12	15
Montane Hardwood-Conifer	25.06	1	0	6	4	12	17
Pinyon-Juniper	9.07	0	0	1	2	6	13
Sierran Mixed Conifer	2.22	0	0	5	2	11	15
Valley Foothill Riparian	0.06	0	0	5	9	18	19
Shrub-dominated Habitats	See below	See below	See below	See below	See below	See below	See below
Chamise-Redshank Chaparral	0.01	0	0	2	6	11	15
Coastal Scrub	<0.01	14	1	5	8	12	22
Desert Wash	0.41	0	0	1	2	5	18
Mixed Chaparral	0.58	17	0	6	10	16	22
Montane Chaparral	30.25	0	0	2	3	7	17
Sagebrush	1.28	0	0	0	2	8	17
Herbaceous-dominated Habitats	See below	See below	See below	See below	See below	See below	See below
Annual Grassland	13.25	13	1	4	7	16	18
Fresh Emergent Wetland	0.03	0	0	2	3	8	7
Pasture	0.03	0	0	0	2	2	13

Land Cover Type	Cover as Percentage of GAI	Plants	Invertebrates	Amphibians	Reptiles	Birds	Mammals
Aquatic Habitats	See below	See below	See below	See below	See below	See below	See below
Lacustrine	0.06	0	0	2	2	4	5
Developed Habitats	See below	See below	See below	See below	See below	See below	See below
Urban	0.01	0	0	0	1	12	11
Non-vegetated Habitats	See below	See below	See below	See below	See below	See below	See below
Barren	0.02	0	1	1	2	9	8

Source: Caltrans 2021b

2.9 Critical Habitat

FWS and NMFS regulate impacts on critical habitat under the ESA. The ESA (16 USC § 1531–1544) defines critical habitat for a threatened or endangered species as (i) “specific areas within the geographical area occupied by the species at the time it is listed ... on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection;” and (ii) “specific areas outside the geographical area occupied by the species at the time it is listed ... upon a determination by the Secretary that such areas are essential for the conservation of the species.” Further, the ESA clarifies that critical habitat “shall not include the entire geographical area which can be occupied by the threatened or endangered species.” Critical habitat designations reflect a rigorous process. Before publishing the rule finalizing the critical habitat designation, FWS publishes proposals to designate critical habitat in the *Federal Register* and considers information received during the public comment period (FWS 2017a).

The GAI includes federally designated final critical habitat for 31 species (FWS 2019; NMFS 2019):

- arroyo toad
- Braunton’s milk-vetch (*Astragalus brauntonii*)
- California condor (*Gymnogyps californianus*)
- California red-legged frog
- California tiger salamander
- Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*)
- coastal California gnatcatcher (*Polioptila californica californica*)
- Conservancy fairy shrimp (*Branchinecta conservatio*)
- Gaviota tarplant (*Deinandra increscens* ssp. *villosa*)
- La Graciosa thistle (*Cirsium scariosum* var. *loncholepis*)
- least Bell’s vireo
- Lompoc yerba santa (*Eriodictyon capitatum*)
- Lyon’s pentachaeta (*Pentachaeta lyonii*)
- mountain yellow-legged frog (*Rana muscosa*)
- Munz’s onion (*Allium munzii*)
- Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*)
- Riverside fairy shrimp (*Streptocephalus woottoni*)
- San Bernardino Merriam’s kangaroo rat (*Dipodomys merriami parvus*)
- San Diego ambrosia (*Ambrosia pumila*)
- San Diego fairy shrimp (*Branchinecta sandiegonensis*)
- Santa Ana sucker (*Catostomus santaanae*)
- southern California Distinct Population Segment (“DPS”) steelhead (*Oncorhynchus mykiss irideus* pop. 10)
- southwestern willow flycatcher

- spreading navarretia (*Navarretia fossalis*)
- thread-leaved brodiaea (*Brodiaea filifolia*)
- tidewater goby (*Eucyclogobius newberryi*)
- Vandenberg monkeyflower (*Diplacus vandenbergensis*)
- Ventura marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*)
- vernal pool fairy shrimp (*Branchinecta lynchi*)
- western snowy plover (*Charadrius nivosus nivosus*)
- western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)

Critical habitat is an important consideration when establishing compensatory mitigation. Designated critical habitat for these species is indicated on Figure 2-9. Note that designated critical habitat represented by points on Figure 2-9 are units too small to depict at the regional level assessed in this RAMNA.

2.10 Essential Fish Habitat

NMFS is responsible for ensuring impacts on essential fish habitat (“EFH”) are addressed. EFH was defined by Congress in 1996 in an amendment to the Magnuson-Stevens Fishery Conservation and Management Act. EFH covers federally managed fish and invertebrate species that are not found strictly in fresh water and includes all aquatic habitat types where fish spawn, breed, feed, or grow to maturity (NMFS 2017). Habitat types include coral reefs, kelp forests, bays, wetlands, rivers that connect to the ocean, and deep ocean habitat. EFH is protected by imposing fishing limitations and requiring consultation with NMFS prior to any federal work with the potential to affect fish habitat. NMFS designates EFH for sharks, tuna, and other migratory species that cross regional boundaries. Habitat for other managed fish species is determined by regional fishery management councils (NMFS 2017). The GAI includes EFH for Pacific groundfish (Figure 2-10).

2.11 Connectivity

Roads can be barriers to special-status wildlife species movement and block migration and access to and from suitable upstream habitat for special-status fish species. Improving habitat connectivity and permeability of the SHS may provide a mechanism for maintaining biodiversity in the face of California’s human population growth and climate change (CDFW 2020a).

2.11.1. Wildlife Movement

Caltrans identified five connectivity assessments applicable and relevant to the GAI: California Essential Habitat Connectivity (“CEHC”) Project, ACE, South Coast Missing Linkages Project, the Los Angeles General Plan’s Significant Ecological Areas (“SEAs”), and CDFW’s Wildlife Barriers Report. Each is briefly summarized below.

Figure 2-9. Designated Critical Habitat

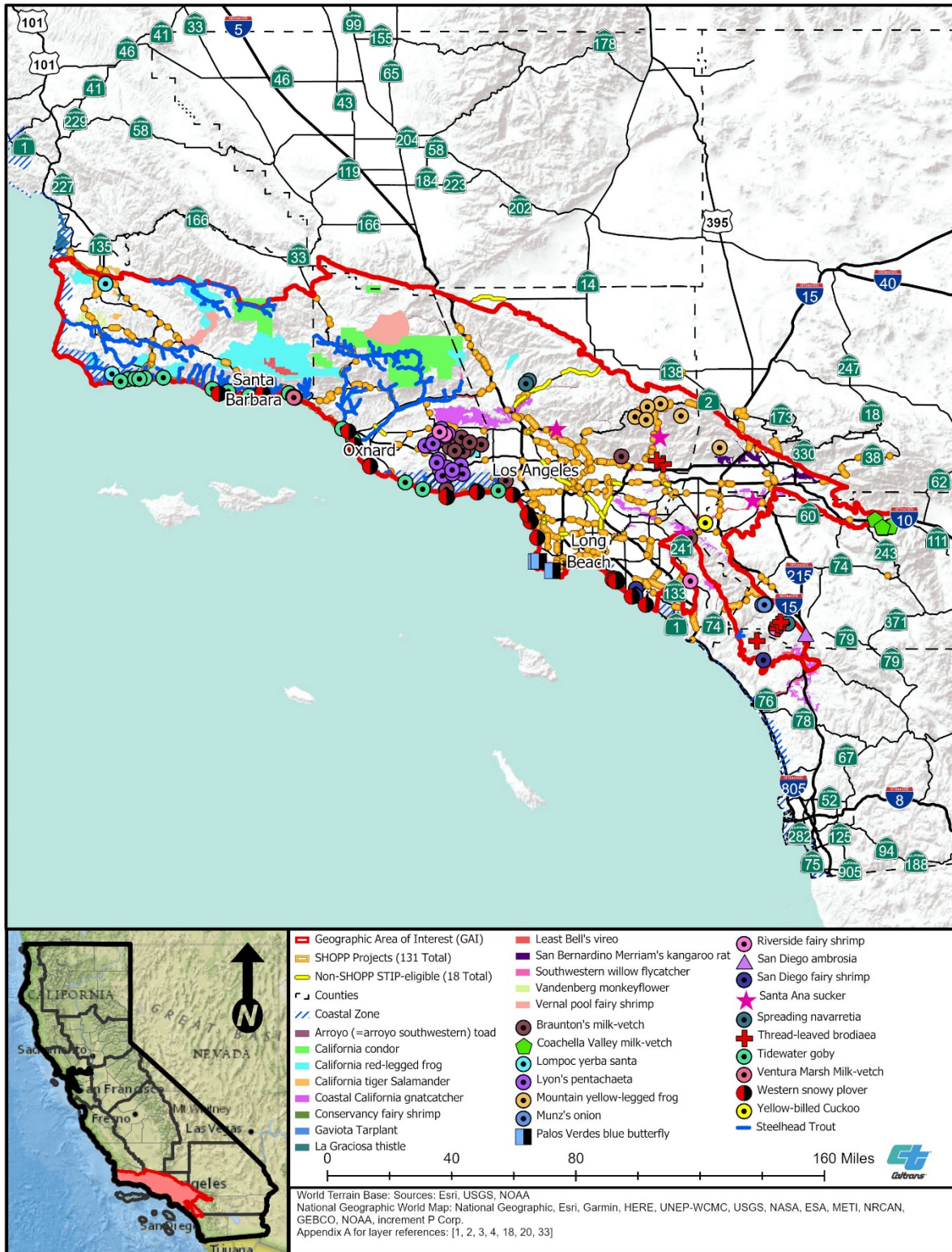
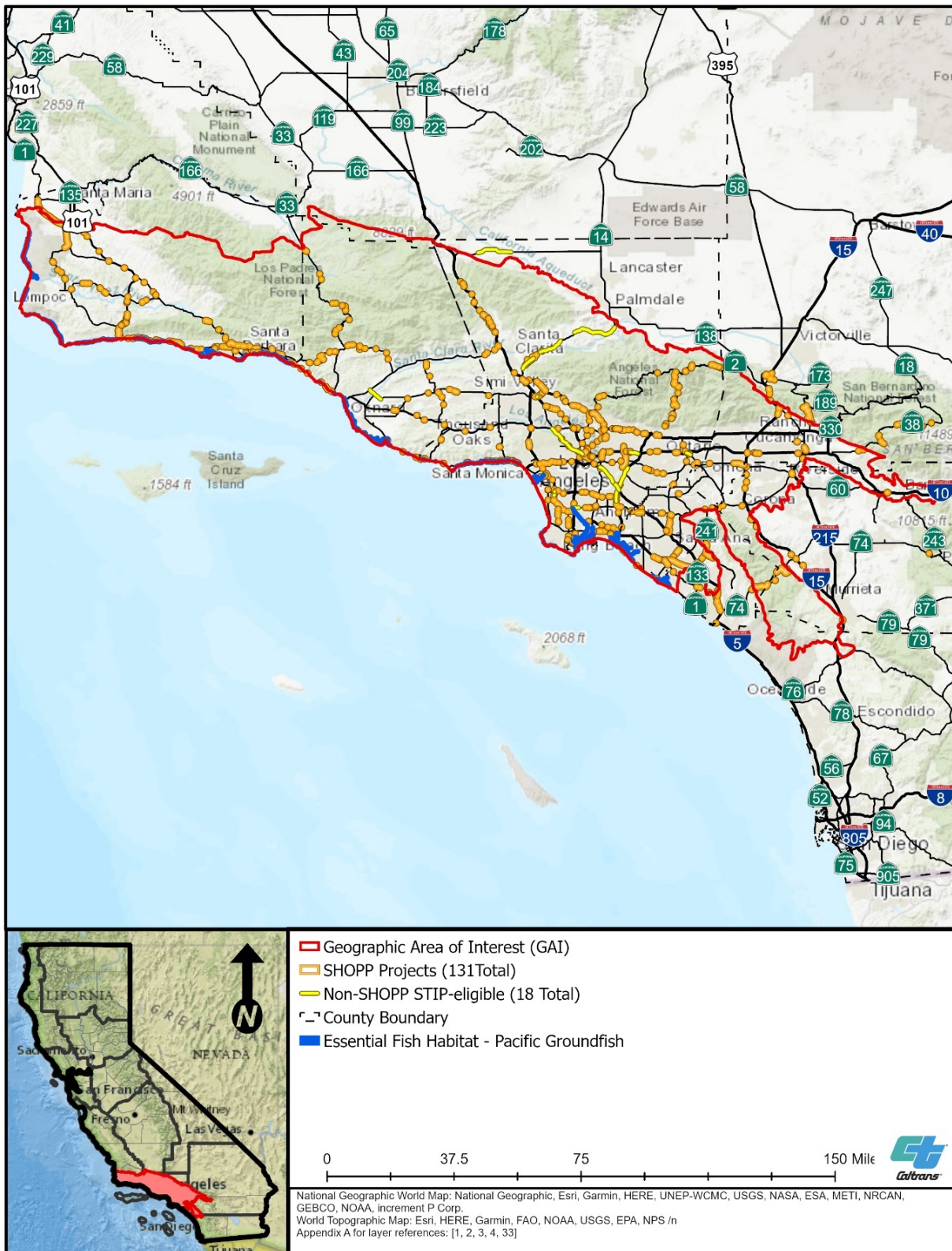


Figure 2-10. Essential Fish Habitat



California Essential Habitat Connectivity

The CEHC Project, a statewide assessment commissioned by CDFW and Caltrans, identified large remaining blocks of intact habitat or natural landscape that support native biodiversity and modeled linkages or essential connectivity areas between them that need to be maintained, particularly as corridors for wildlife (CDFW 2018c; Spencer et al. 2010). These connectivity areas were broadly defined, focusing on ecological integrity rather than species-specific habitat needs, and also included potential riparian connections between landscape blocks. For instance, connectivity areas were selected to connect existing reserves across land that has been highly altered and fragmented by agriculture, urbanization, and roads, which typically constrain wildlife movement (Spencer et al. 2010).

CDFW's Areas of Conservation Emphasis

CDFW's ACE version 3 terrestrial connectivity dataset builds on the CEHC Project and includes mapped corridors or linkages and where they occur in relation to large, contiguous natural areas (Figure 2-11). It also incorporates species-specific, fine-scale linkage information developed at a regional scale, where available, and includes areas that were not evaluated by the CEHC Project. Connectivity ranks in the terrestrial connectivity dataset were assigned as follows:

- Rank 5 (irreplaceable and essential corridors) – includes channelized areas and priority species movement corridors
- Rank 4 (conservation planning linkages) – habitat connectivity linkages mapped in the CEHC and fine-scale regional connectivity studies that are based on species-specific models and represent the best connections between core natural areas
- Rank 3 (connections with implementation flexibility) – areas with connectivity importance, including core habitat areas and areas on the periphery of mapped habitat linkages
- Rank 2 (large natural habitat areas) – large blocks of natural habitat (greater than 2,000 acres) with relatively intact connectivity
- Rank 1 (limited connectivity opportunity) – areas where land use limits connectivity, including some lakes

Connectivity is an important consideration when establishing compensatory mitigation. Most of the planned SHOPP and STIP-eligible transportation projects occur in areas with a connectivity rank of 1, with fewer projects occurring in areas with a connectivity rank of 3 or 4, and very few projects in areas with a connectivity rank of 5 (Figure 2-11).

South Coast Missing Linkages Project

The South Coast Missing Linkages project includes a comprehensive plan for a regional network that maintains and restores critical habitat linkages between existing reserves, with focus on the highest-priority linkages along the coast of southern California and Baja California. The project is the result of a collaborative, interdisciplinary effort that uses advanced conservation planning techniques to design linkages. These linkages were

designed to buffer against edge effects, provide habitat for species needing multiple generations to achieve gene flow through the linkage, ensure availability of key resources, allow natural processes to operate, and allow species and natural communities to respond to climatic changes. In addition, the plan for each linkage design includes recommended actions to mitigate barriers, restore habitats, and manage each linkage. The following is a list of linkages proposed by the plan that are located either partially or completely within the GAI: Santa Monica-Sierra Madre, Sierra Madre-Castaic, San Gabriel-Castaic, San Gabriel-San Bernardino, San Bernardino-San Jacinto, and the Santa Ana-Palomar Connections (South Coast Wildlands 2008) (Figure 2-12). Several of the planned SHOPP and STIP-eligible transportation projects occur within the Sierra Madre-Castaic, Santa Monica-Sierra Madre, and San Gabriel-San Bernardino Connections (Figure 2-12).

Significant Ecological Area Program

The SEA program is part of the Los Angeles County General Plan Conservation and Natural Resources Element. As defined in the General Plan, SEAs are lands with irreplaceable biological resources that are integral to the conservation of biological diversity in the county. SEAs must meet one of the following selection criteria: (1) habitat of core populations of endangered or threatened plant or animal species; (2) biotic communities, vegetative associations, or habitat of plant and animal species that are either unique or are restricted in distribution either on a regional basis or in the county; (3) habitat that at some point in the life cycle of a species or group of species serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the county; (4) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and (5) areas that would provide for the preservation of relatively undisturbed examples of the original biotic communities in the county (Los Angeles County 2015).

SEAs exist in large contiguous blocks (core habitat areas) with intervening areas of roads, rural residential development, and other low-intensity disturbance. Many of the SEAs include locally and regionally important habitat linkages and wildlife corridors that provide connectivity between core habitat areas using natural topographic features (ridge lines and drainages), vegetative cover, water sources, and road undercrossings (bridges and culverts). These linkages provide connectivity to similar areas of biological importance in adjacent counties (Los Angeles County Department of Regional Planning 2009). SEAs in the GAI that serve as important regional habitat linkages include Antelope Valley, Puente Hills, San Andreas, Santa Clara River, Santa Felicia, Santa Monica Mountains, and Santa Susana Mountains/Simi Hills (Figure 2-13).

Figure 2-11. CEHC Project Terrestrial Connectivity

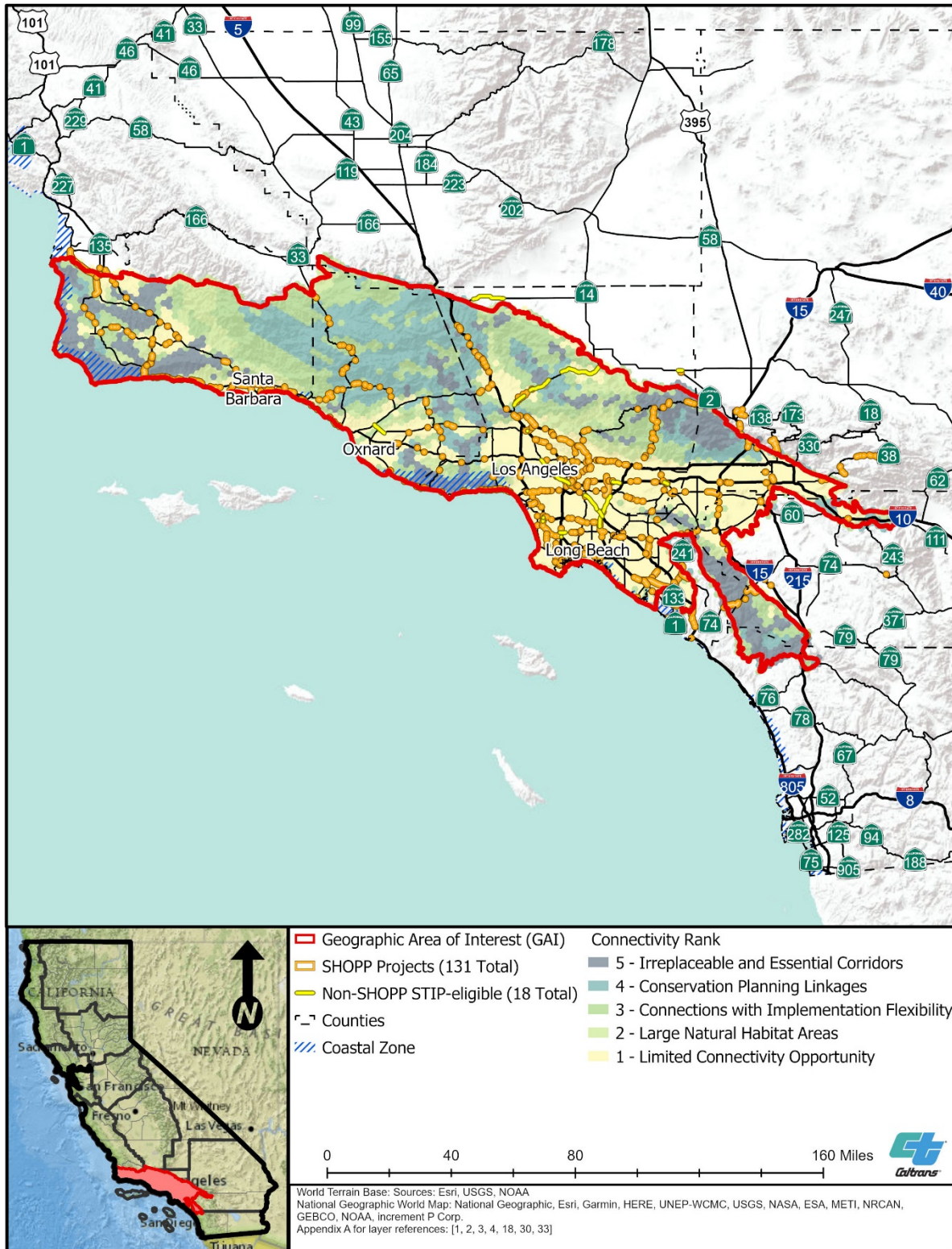


Figure 2-12. South Coast Missing Linkages



Figure 2-13. Significant Ecological Areas That Address Connectivity



Other SEAs in the GAI that serve as locally important habitat linkages include the Malibu Coastline, Madrona Marsh Preserve, Valley Oaks Savannah, Cruzan Mesa Vernal Pools, Tujunga Valley/Hansen Dam, Griffith Park, Verdugo Mountains, Altadena Foothills and Arroyos, San Gabriel Canyon, East San Gabriel Valley, San Dimas Canyon/San Antonio Wash, East San Gabriel Valley, Rio Hondo College Wildlife Sanctuary, Harbor Lake Regional Park, Alameda Bay, Palos Verdes Peninsula and Coastline, El Segundo Dunes, and Ballona Wetlands. Some of the planned SHOPP and STIP-eligible transportation projects occur within or adjacent to SEAs (Figure 2-13).

CDFW's 2020 Wildlife Barriers Report

CDFW's 2020 *California Wildlife Barriers* report identified priority wildlife movement barriers created by linear infrastructure across the state to focus financial resources on improving wildlife movement (CDFW 2020a). In addition to impeding wildlife movement, these barriers act as sources of mortality and affect population demographics, gene flow, resilience, and persistence of California's wildlife. Barriers were identified using existing connectivity and road crossing studies, collared-animal movement data, roadkill observations, and professional expertise.

Five priority wildlife movement barriers were identified in the GAI. These barriers and the target species for movement include: Highway 101 through Liberty Canyon (mountain lion, mule deer, bobcat, and mesocarnivores), State Route 39 from Cedar Creek to State Route 2 (bighorn sheep), Interstate 5 north of Sylmar (mountain lion and mule deer), State Route 33 from Red Mountain to Sulphur Mountain (mountain lion, mule deer, bobcat, and mesocarnivores), and State Route 91 near B Canyon (mountain lion) (CDFW 2020a).

2.11.2. Fish Passage

Article 3.5 of Chapter 1 of Division 1 of the SHC, also known as "Senate Bill 857" (Kuehl, Chapter 589 and Statute of 2005), prohibits the new construction or continued maintenance upgrades of SHS facilities that prevent or impede the passage of salmon and steelhead. The majority of salmon and steelhead in California are listed as either threatened or endangered, and barriers on the SHS further block fish from gaining access to upstream habitat.

SHC § 156.1 requires Caltrans to:

1. Provide an annual list of fish passage priorities for the SHS to the legislature. Fish Passage Annual Reports are available on the Caltrans Legislative Affairs website, and the most recent report is available from: <https://dot.ca.gov/-/media/dot-media/programs/legislative-affairs/documents/fish-passage-report-final-ada-a11y.pdf>.
2. Complete assessments of potential barriers to anadromous fish prior to commencing any transportation project using state or federal transportation funds.
3. Submit assessments to the California Fish Passage Assessment Database.
4. Construct all new transportation projects in a way that does not pose or create a barrier to fish passage.

The CESA and the ESA list 10 Evolutionarily Significant Units (“ESUs”)/DPSs of salmon and steelhead as threatened or endangered. Barriers created by the SHS are known to block access to habitat for each of these species’ units. CDFW, in coordination with CalTrout, estimates that without increased intervention, to include habitat remediation and restoration, the following species will be extinct in California in the next 40 years:

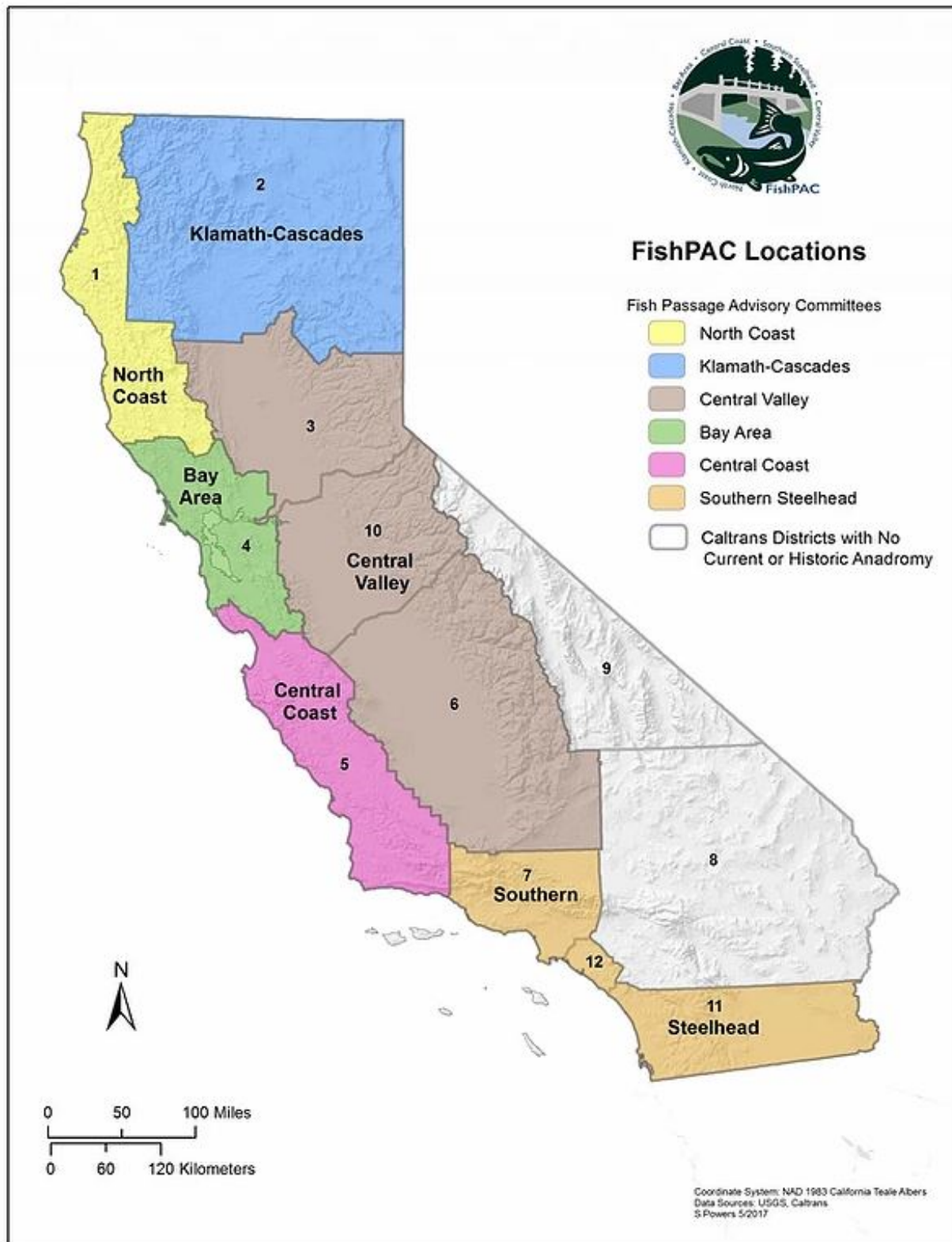
- Three identified species’ units currently listed as state and/or federally endangered: Central California Coast ESU coho salmon, Sacramento River winter-run ESU chinook salmon, and southern California DPS steelhead
- Seven identified species currently listed as state and/or federally threatened: Southern Oregon/Northern California ESU coho salmon, Central Valley spring-run ESU and California Coastal ESU chinook salmon, and Central Valley DPS, Northern California DPS, Central California Coast DPS, and South-Central California Coast DPS steelhead

Figure 2-14 depicts the six California Fish Passage Advisory Committee (“FishPAC”) locations throughout the state. The FishPAC is a partnership between Caltrans, CDFW, NMFS, FWS, CCC, CalTrout, Pacific States Marine Fisheries Commission, and other local fish passage advocates. The purpose of FishPACs is to cooperatively share science and data related to known fish barriers and to prioritize SHS locations based on high-value habitat recovery.

FishPACs support the implementation of meaningful, long-term fish passage solutions for SHS projects within each FishPAC geographic area. FishPACs recommend technical solutions, explore options for accelerated delivery of transportation projects, and identify potential funding mechanisms for both new barrier removal projects and the long-term maintenance of existing fish passage facilities for the SHS. Stream simulation designs and full-span solutions to fish passage also consider and incorporate benefits for both terrestrial and wildlife species and can also help to address sediment transport, water temperature, dissolved oxygen, and stream erosion issues.

The FishPACs help advance the desired outcomes of legislative guidance included in the SHC and promote collaborative interjurisdictional solutions. Long-term, full-span fish passage solutions are key to enhancing connectivity for both aquatic and terrestrial species in California’s watersheds. Providing access to upstream habitats will help ensure fish populations can respond and adapt to climate change stressors, such as drought, wildfire, sea-level rise, changes in stream flow, and water temperature. The FishPAC network of over 200 fish passage experts, advocates, and partners throughout the range of salmon and steelhead work collaboratively to address legacy transportation barriers with long-term solutions that facilitate both fish passage and climate resilience.

Figure 2-14. California Fish Passage Advisory Committee Locations



The FishPAC helps Caltrans advance the desired outcomes of SHC § 156 (J. Walth, Caltrans, personal communication, 2020). In the 14 years since 2006, in collaboration with FishPAC, statewide, Caltrans has partially or fully remediated 51 barriers on the SHS and identified approximately 556 additional barriers to salmon and steelhead. Results of Caltrans' and FishPAC's efforts to locate, assess, prioritize, and remediate fish passage barriers on the SHS are documented in the Fish Passage Annual Reports prepared by Caltrans and submitted to the legislature as required by SHC § 156.1. As specified above, the FishPAC also provides SHS-related information to the Fish Passage Assessment Database, to be incorporated into its periodic updates.¹ Information regarding verified SHS fish passage barriers is available through the appropriate FishPAC.

2.12 Sub-basins

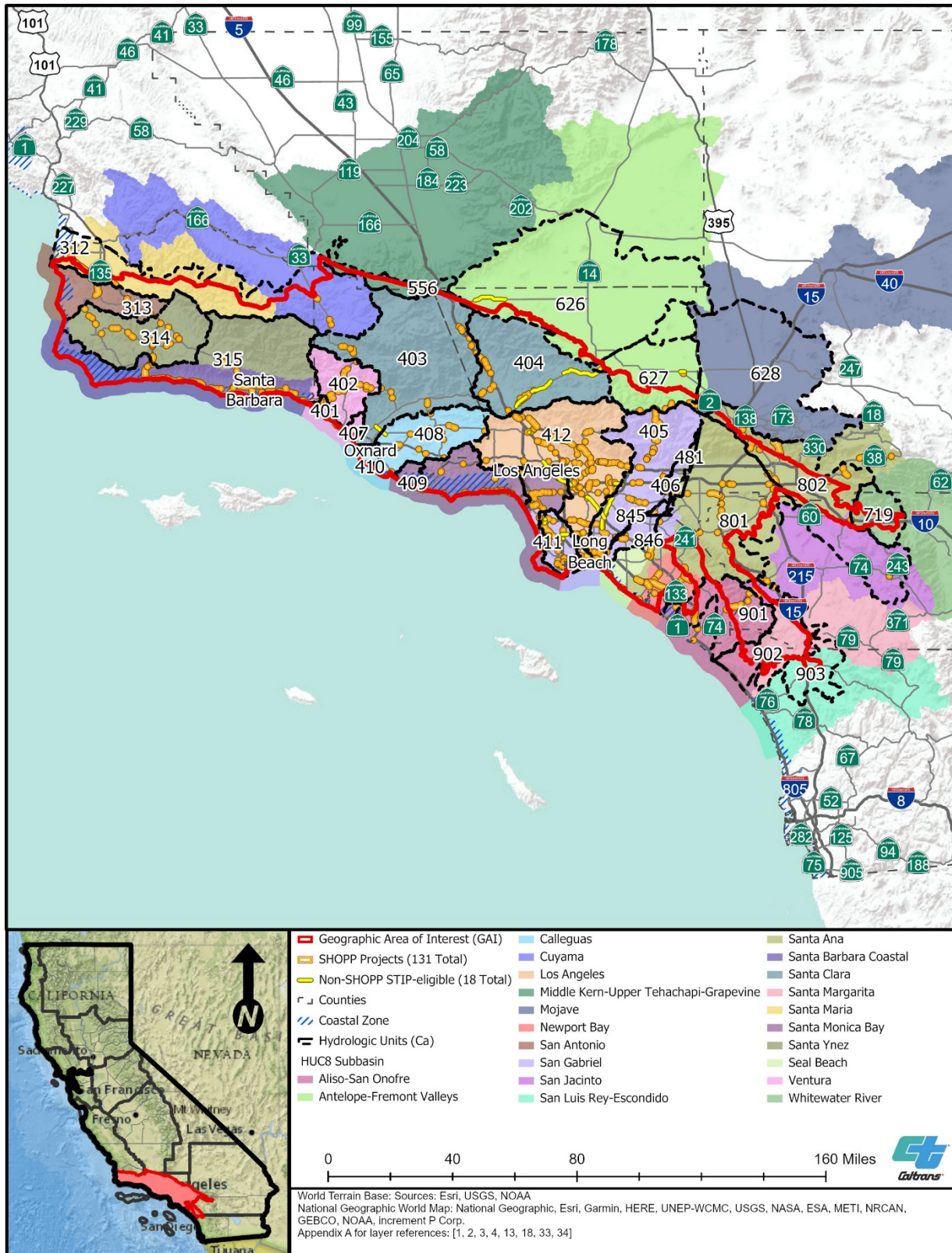
The Watershed Boundary Dataset maps the areal extent of surface water drainage in the U.S. It consists of a hierarchical system of nesting hydrologic units of various scales, each with an assigned HUC that is georeferenced to USGS topographic maps (USGS 2014). Each HUC classification consists of 2 to 12 digits. For example, 6-digit HUCs, or "HUC-6s," map to the basin level, 8-digit HUCs, or "HUC-8s," map to the sub-basin level, and 12-digit HUCs, or "HUC-12s," map to the watershed level.

The SAMNA Reporting Tool expresses the landscape in terms of USGS HUC-8 sub-basins and hence information in this RAMNA is also presented by HUC-8 (Caltrans 2021c; USGS 2014). However, the State Water Boards do not exclusively use HUC-8 codes (California Department of Water Resources 2016). The State Water Boards also use the Calwater system for state-level purposes, such as assigning beneficial uses to waters. The Calwater system is a hierarchical system similar to USGS HUCs. Calwater levels begin with the division of the state into 10 Hydrologic Regions. Each Hydrologic Region is progressively subdivided into five smaller, nested levels: the Hydrologic Unit ("HU"), Hydrologic Area, Hydrologic Sub-Area, Super Planning Watershed, and Planning Watershed.

Appendix F provides a crosswalk between the HUC-8 and HU classifications for each HUC-8 in the GAI. The GAI overlaps 22 HUC-8 sub-basins, which loosely correspond to 29 HUs. Figure 2-15 shows the overlap between sub-basins and state-level HUs in the GAI.

¹ More information about the Fish Passage Assessment Database can be found in CalFish 2018.

Figure 2-15. HUC-8 Sub-basins and HUs



2.13 Hydrology

The 22 sub-basins of the GAI drain an area of approximately 144,650 acres (226 square miles) (Table 2-6). Described individually in Appendix F, these sub-basins include 102,463 rivers and streams that traverse 27,082 miles in the Central Coast, Los Angeles, Central Valley, Lahontan, and San Diego RWQCB boundaries (Table 2-6). Rivers and streams in the GAI generally flow from mountain headwaters through urbanized foothill and valley areas; high-density residential, industrial, or intensely farmed coastal areas; and terminate at heavily used recreational beaches and harbors (Los Angeles RWQCB 2020).

Table 2-6. Sub-basins in the GAI

Sub-basin Name	Sub-basin Code (HUC-8)	Drainage Area (acres) ^a	Rivers and Streams (count)	Total Reach Length (miles) ^a
Aliso-San Onofre	18070301	1,815	12,476	1,679
Antelope-Fremont Valleys	18090206	2,636	577	437
Calleguas	18070103	8,159	7,991	1,204
Cuyama	18060007	5,441	1,985	1,127
Los Angeles	18070105	12,085	2,226	1,103
Middle Kern-Upper Tehachapi-Grapevine	18030003	621	308	167
Mojave	18090208	122	28	22
Newport Bay	18070204	2,208	240	104
San Antonio	18060009	4,478	8,118	1,267
San Gabriel	18070106	14,114	2,086	1,147
San Jacinto	18070202	274	121	42
San Luis Rey-Escondido	18070303	138	289	73
Santa Ana	18070203	24,363	3,366	1,540
Santa Barbara Coastal	18060013	6,396	1,955	1,048
Santa Clara	18070102	28,544	21,532	6,838
Santa Margarita	18070302	1,585	6,950	1,030
Santa Maria	18060008	2,610	2,420	922
Santa Monica Bay	18070104	6,737	9,367	1,955
Santa Ynez	18060010	13,765	14,765	3,930
Seal Beach	18070201	2,315	55	35

Sub-basin Name	Sub-basin Code (HUC-8)	Drainage Area (acres) ^a	Rivers and Streams (count)	Total Reach Length (miles) ^a
Ventura	18070101	5,295	5,498	1,324
Whitewater River	18100201	951	110	88
Total		144,652	102,463	27,082

Source: California Department of Water Resources

^a Numbers were rounded to the nearest whole number.

2.14 Flood Hazard Areas

As designated by the Federal Emergency Management Agency, a Special Flood Hazard Area is defined as the area of land that is covered by the floodwaters of a 100-year base flood (Federal Emergency Management Agency 2020). In accordance with Executive Order 11988, all federally approved projects that encroach into a 100-year base floodplain must try to:

- Avoid support of incompatible floodplain development,
- Minimize the impact of highway actions that adversely affect the base floodplain,
- Restore and preserve natural and beneficial floodplain values, and
- Be consistent with the standards/criteria of the National Flood Insurance Program of the Federal Emergency Management Agency (Caltrans 2015).

Flood hazard areas in the GAI are shown on Figure 2-16. Waterbodies associated with the majority of flood hazard risk in the GAI include San Antonio Creek, Sisquoc River, Santa Ynez River, Ventura River, Calleguas Creek, Santa Clara River, Los Angeles River, San Gabriel River, Santa Ana River, Newport Bay, and San Geronio River. This information is important for scoping advance mitigation projects and transportation projects undertaken within the GAI, which will need to comply with Executive Order 11988.

Figure 2-16. Flood Hazard Areas



2.15 Water Quality

The majority of the GAI is managed by the Los Angeles RWQCB; however, portions of the GAI fall under the purview of the Central Coast, Lahontan, Central Valley, Santa Ana, and San Diego RWQCBs. Water quality objectives for surface waters and groundwater in the GAI are provided in the six water quality control plans (“basin plans”) that cover the GAI (Central Coast RWQCB 2019; Central Valley RWQCB 2018; Lahontan RWQCB 2020; Los Angeles RWQCB 2020; San Diego RWQCB 2016; Santa Ana RWQCB 2019). Water quality objectives identified in the basin plans can be numerical or narrative. For example, the “chemical constituents” water quality objective for the protection of aquatic life and human health consists of federal water quality criteria for toxic “priority pollutants” under the California Toxics Rule (40 CFR § 131.38) and National Toxics Rule (40 CFR § 131.36). In contrast, the water quality objective for taste and odor is narrative. Undesirable tastes and odors in water are an aesthetic nuisance and can indicate the presence of other pollutants.

Beneficial uses for surface waters, groundwater, and coastal features are also identified in the basin plans (Central Coast RWQCB 2019; Central Valley RWQCB 2018; Lahontan RWQCB 2020; Los Angeles RWQCB 2020; San Diego RWQCB 2016; Santa Ana RWQCB 2019). If it cannot be avoided, a waterbody’s beneficial uses may be affected by the construction, operation, and maintenance of highways and bridges. Impacts on wildlife and aquatic resources can be adverse or beneficial. An example of an adverse impact would be the introduction of a variety of pollutants, including sediments, heavy metals, hydrocarbons, and toxic substances (EPA 2005). An example of a beneficial impact would be repairs or retrofits that improve permeability or flows. Hence, this RAMNA considers beneficial uses identified for waterbodies located in the GAI relevant to the RAMNA when they support the preservation and enhancement of wildlife habitat and aquatic resources and are consistent with the AMP’s objective to protect natural resources through transportation project mitigation (Table 2-7).

Table 2-7. Beneficial Uses in the GAI

Beneficial Use	Los Angeles Basin Plan	Central Coastal Basin Plan	Lahontan Basin Plan	San Diego Basin Plan	Santa Ana River Basin Plan	Tulare Lake Basin Plan	Relevant to RAMNA?^a
Agricultural Supply	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	No
Aquaculture	Applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	No
Cold Freshwater Habitat	Applicable	Applicable	Applicable	Applicable	Applicable	Not applicable	Yes
Commercial and Sport Fishing	Applicable	Applicable	Applicable	Not applicable	Applicable	Not applicable	No
Estuarine Habitat	Applicable	Applicable	Not applicable	Not applicable	Applicable	Not applicable	Yes
Flood Peak Attenuation/ Flood Water Storage	Not applicable	Not applicable	Applicable	Not applicable	Not applicable	Not applicable	Yes
Freshwater Replenishment	Applicable	Applicable	Applicable	Not applicable	Not applicable	Not applicable	Yes
Groundwater Recharge	Applicable	Applicable	Applicable	Applicable	Applicable	Not applicable	Yes
Hydropower Generation	Applicable	Not applicable	Not applicable	Not applicable	Applicable	Not applicable	No
Industrial Process Supply	Applicable	Applicable	Not applicable	Applicable	Applicable	Not applicable	No
Industrial Service Supply	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	No
Inland Saline Water Habitat	Applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Yes
Limited Warm Freshwater Habitat	Not applicable	Not applicable	Not applicable	Not applicable	Applicable	Not applicable	Yes
Marine Habitat	Applicable	Applicable	Not applicable	Not applicable	Applicable	Not applicable	Yes
Migration of Aquatic Organisms	Applicable	Applicable	Not applicable	Not applicable	Not applicable	Not applicable	Yes
Municipal and Domestic Supply	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	No

Beneficial Use	Los Angeles Basin Plan	Central Coastal Basin Plan	Lahontan Basin Plan	San Diego Basin Plan	Santa Ana River Basin Plan	Tulare Lake Basin Plan	Relevant to RAMNA? ^a
Native American Culture	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	No
Navigation	Applicable	Applicable	Not applicable	Not applicable	Applicable	Not applicable	No
Non-Contact Water Recreation	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	No
Preservation of Areas of Special Biological Significance	Applicable	Applicable	Not applicable	Applicable	Applicable	Not applicable	Yes
Rare, Threatened, or Endangered Species	Applicable	Applicable	Not applicable	Applicable	Applicable	Not applicable	Yes
Shellfish Harvesting	Applicable	Applicable	Not applicable	Not applicable	Applicable	Not applicable	No
Spawning, Reproduction, and/or Early Development	Applicable	Applicable	Applicable	Applicable	Applicable	Not applicable	Yes
Subsistence Fishing	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	No
Warm Freshwater Habitat	Applicable	Applicable	Applicable	Applicable	Applicable	Not applicable	Yes
Water Contact Recreation	Applicable	Applicable	Applicable	Applicable	Applicable	Not applicable	No
Water Quality Enhancement	Not applicable	Not applicable	Applicable	Not applicable	Not applicable	Not applicable	Yes
Wetland Habitat	Applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Yes
Wildlife Habitat	Applicable	Applicable	Applicable	Applicable	Applicable	Not applicable	Yes

Sources: Central Coast RWQCB 2019; Central Valley RWQCB 2018; Lahontan RWQCB 2020; Los Angeles RWQCB 2020; San Diego RWQCB 2016; Santa Ana RWQCB 2019

^a Beneficial uses are relevant to the RAMNA when they support the preservation and enhancement of wildlife habitat and aquatic resources and are consistent with the AMP's objective to protect natural resources through transportation project mitigation.

Through habitat and other improvements, advance mitigation projects have the potential to contribute to compliance with the State Water Board CWA Section 303(d) List of Total Maximum Daily Load Priority Schedule. For example, fish passage projects in impaired watersheds that increase road/stream crossing capacity, improve the alignment of the crossing, or implement weirs, baffles, or other grade/velocity control devices at undersized road/stream crossings will improve sediment transport and reduce scour, thereby improving water quality. Similarly, culvert replacement projects that increase flow and capacity would also reduce scour and improve sediment transport, resulting in improved channel function and flow and improved water quality.

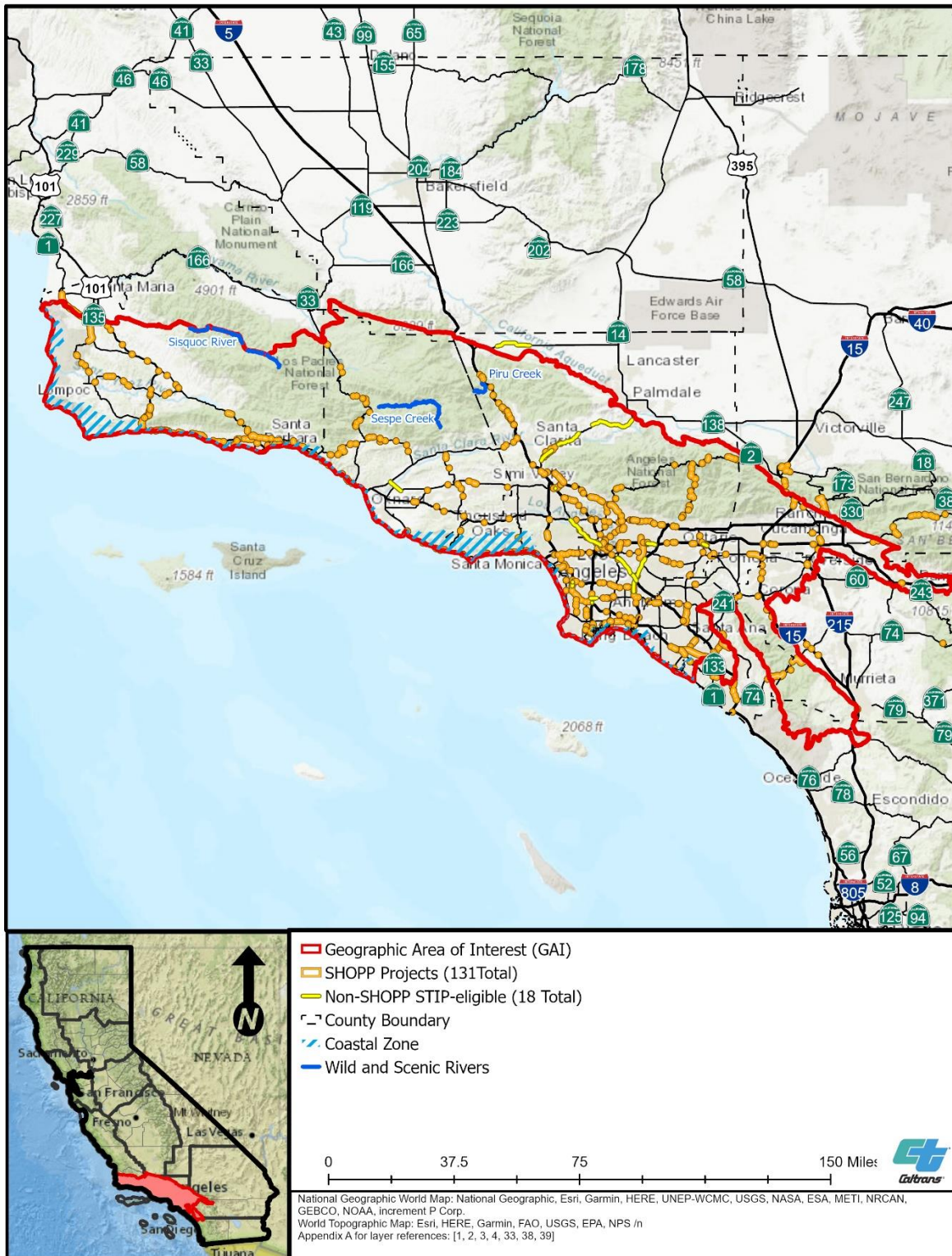
The CWA Section 303(d) list of impaired waters includes approximately 200 waterbodies in the GAI (State Water Board 2018). This RAMNA considers a waterbody's CWA Section 303(d) impairment designation as relevant to the RAMNA when it indicates a waterbody's loss of a relevant aquatic resource-related beneficial use (Table 2-7). These waterbodies, their impairments, and whether total maximum daily loads have been established are provided in Appendix G. A RWQCB may need to consult with CDFW or other natural resource regulatory agencies to determine whether a beneficial use may be affected by a water quality-related decision.

2.16 Wild and Scenic Rivers

The purpose of the federal Wild and Scenic Rivers Act of 1968 (16 USC Chapter 28) and the California Wild and Scenic Rivers Act of 1972 (PRC § 5093.50) is to protect and enhance the wild, scenic, and recreational values of designated rivers (National Wild and Scenic Rivers System 2021). Rivers designated under the Wild and Scenic Rivers Act are classified as wild, scenic, or recreational. Wild river areas include rivers or sections of rivers that are free of impoundments, inaccessible except by trail, and have unpolluted waters. Scenic river areas include rivers or sections of rivers that are free of impoundments, have relatively undeveloped shorelines, and are accessible in some places by roads. Recreational river areas include rivers or sections of rivers that are readily accessible by road or railroad, have some development along shorelines, and may have impoundments or diversions.

The Sisquoc River, Sespe Creek, and Piru Creek are nationally designated wild and scenic rivers in the GAI (National Wild and Scenic Rivers System 2021; Omnibus Public Land Management Act of 2009). The location of these nationally designated wild and scenic rivers is provided on Figure 2-17. There are no state-designated wild and scenic rivers in the GAI. On June 19, 1992, Congress designated the entire 33-mile reach of the Sisquoc River as wild from its origin in the San Rafael Wilderness downstream to the Los Padres National Forest boundary, and designated 27.5 miles of the main stem of Sespe Creek as wild and 4 miles as scenic from its confluence with Rock Creek and Howard Creek downstream to where it leaves Section 26 of Township 5 North, Range 20 West of the Fillmore 7.5' USGS quadrangle.

Figure 2-17. Wild and Scenic Rivers in the GAI



On March 30, 2009, Congress designated 4.3 miles of Piru Creek as wild and 3 miles as scenic from 0.5 mile downstream of Pyramid Dam at the first bridge crossing to the boundary between Los Angeles and Ventura Counties (National Wild and Scenic Rivers System 2021).

2.17 Aquatic Resources

Aquatic resource maps are provided in Appendix H. Aquatic resources in the GAI include fish, wetlands, and non-wetland waters that may be subject to CCC, Corps, EPA, RWQCB, and/or CDFW regulations, as well as special-status fish managed by CDFW, FWS, or NMFS. The CCC regulates impacts on coastal wetlands and marine and aquatic resources, and these resources receive special protections under Coastal Act Section 30230 et seq. Corps and EPA jurisdiction includes any activity that may cause a discharge of dredged or fill material into waters of the U.S. (“WOTUS”), including wetlands. Corps jurisdiction also includes any work or structure affecting navigable waters of the U.S., pursuant to Section 10 of the Rivers and Harbors Act and 33 CFR § 329, respectively. RWQCB jurisdiction includes any activity that may cause a discharge of waste to waters of the state, including wetlands. CDFW regulates any activity that may divert or obstruct the natural flow of a river, stream, or lake; change the bed, channel, or bank of any river, stream, or lake; use material from any river, stream, or lake; and deposit or dispose of material into any river, stream, or lake. Rivers, streams, and lakes include ephemeral, intermittent, and perennial watercourses. Effects on aquatic resources that extend to the outer limits of the riparian dripline, the outer limits of the floodplain of the aquatic resource, the top-of-bank on streams/rivers, or normal pool elevation on lakes may be regulated by CDFW.

2.17.1. Historical Context

Historically, wetlands in the GAI were more extensive than they are today, and watercourses flowed from their mountain headwaters through natural floodplains to the Pacific Ocean (Los Angeles RWQCB 2020). Over the past 150 years, dramatic reductions in the extent of wetlands, surface water flows of rivers and streams, and groundwater recharge have resulted from encroachment by agricultural, commercial, residential, and industrial development, as well as flood control activities (Grossinger et al. 2011). The wetlands and watercourses that remain have been heavily altered, with many rivers dammed, straightened, and lined with concrete (City of Santa Ana 2006; Ventura County Watershed Protection District and Los Angeles Department of Public Works 2005).

Southern California estuaries were dynamic systems, dominated by vegetated wetlands with lesser amounts of subtidal water, intertidal flat, salt flat, and open water pond habitat. Marshes exhibited a range of hydrologic regimes with varying degrees of surface water persistence (Grossinger et al. 2011). Most of the major rivers flowed nearly year-round, replenishing large groundwater basins in inland valleys and on the coastal plain. Diversion of most of the natural surface flows for agricultural and domestic uses dried up many rivers and creeks during parts of the year, carrying only storm flows and runoff and diminishing natural groundwater recharge (Santa Ana RWQCB 2019).

2.17.2. Wetlands

Wetland resources information for the GAI was extracted from the SAMNA Reporting Tool, which relies on the FWS National Wetlands Inventory maps (FWS 2017b), and data from the San Francisco Estuary Institute (2018) California Aquatic Resource Inventory (Table 2-8, Appendix H; Caltrans 2021e). These data were used to estimate the extent of wetlands in the GAI; however, the data layers are largely based on aerial imagery, have not been ground-truthed, and provide no information on plant species associated with mapped areas. Although suitable for advance mitigation project scoping, site-specific studies that result in more detailed mapping and classification of wetland aquatic resources would be required for advance mitigation projects to establish compensatory mitigation credits.

Aquatic resource types outlined here follow the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). The SAMNA Reporting Tool wetlands data layer is separate from the land cover types discussed previously in Section 2.6; therefore, total acreages of wetland land cover types presented in Table 2-3 may not align with those presented in Table 2-8 (Caltrans 2021e).

Coastal Wetlands

Caltrans did not find any spatial data for the GAI that display “coastal wetlands” as defined by the CCC, in accordance with Public Resources Code § 30121 [14 California Code of Regulations § 13577(b)]. Evidence of a CCC coastal wetland mapping effort in the GAI was not found. The SAMNA Reporting Tool’s wetland layer does not report on coastal wetlands that meet the CCC’s definition. It is likely that, if located in the coastal zone, all of the wetland types identified in Table 2-8 would be classified as coastal wetlands. An unknown additional number may also meet the definition of coastal wetland using the CCC’s criteria; identification would have to occur in the field.

2.17.3. Non-wetland Waters

Other, non-wetland water resources information for the GAI was extracted from the SAMNA Reporting Tool, which relies on the USGS National Hydrography Dataset (Table 2-9, Appendix H; Caltrans 2021f). Although suitable for advance mitigation project scoping, site-specific studies that result in more detailed mapping and classification of other, non-wetland aquatic resources would be required for advance mitigation projects to establish compensatory mitigation credits. Similar to the wetlands data, the waters data layer is separate from the land cover types discussed previously in Section 2.6; therefore, total acreages of water land cover types presented in Table 2-3 may not align with those presented in Table 2-9 (Caltrans 2021f).

Table 2-8. Wetland Types in the GAI

Type	Aliso-San Onofre (acres) 18070301	Antelope-Fremont Valleys (acres) 18090206	Calleguas (acres) 18070103	Cuyama (acres) 18060007	Los Angeles (acres) 18070105	Middle Kern-Upper Tehachapi-Grapevine (acres) 18030003	Mojave (acres) 18090208	Newport Bay (acres) 18070204	San Antonio (acres) 18060009	San Gabriel (acres) 18070106	San Jacinto (acres) 18070202	San Luis Rey-Escondido (acres) 18070303	Santa Ana (acres) 18070203	Santa Barbara Coastal (acres) 18060013	Santa Clara (acres) 18070102	Santa Margarita (acres) 18070302	Santa Maria (acres) 18060008	Santa Monica Bay (acres) 18070104	Santa Ynez (acres) 18060010	Seal Beach (acres) 18070201	Ventura (acres) 18070101	Whitewater River (acres) 18100201	Total (acres)
Depressional Perennial Natural Emergent	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.05	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.05
Depressional Perennial Natural Non-vegetated	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	<0.01	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	<0.01
Depressional Perennial Natural Vegetated	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.03	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.03
Depressional Perennial Non-vegetated	Not present	Not present	Not present	Not present	67.8	1.7	Not present	33.6	Not present	18.6	Not present	Not present	84.9	Not present	27.1	Not present	Not present	Not present	Not present	3.7	Not present	Not present	237.3
Depressional Perennial Unnatural Emergent	Not present	Not present	1.0	Not present	Not present	Not present	Not present	0.4	Not present	0.01	Not present	Not present	4.4	Not present	0.03	<0.01	Not present	0.02	<0.01	Not present	Not present	Not present	5.9
Depressional Perennial Unnatural Non-vegetated	<0.01	<0.01	3.6	0.5	17.9	0.03	Not present	21.2	0.3	5.5	Not present	<0.01	30.9	<0.01	6.4	<0.01	2.3	8.5	<0.01	0.05	0.08	Not present	97.2
Depressional Perennial Unnatural Vegetated	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.3	Not present	Not present	0.9	<0.01	Not present	<0.01	0.08	0.2	<0.01	Not present	Not present	Not present	1.5
Depressional Seasonal	Not present	Not present	Not present	Not present	Not present	Not present	Not present	3.8	Not present	Not present	Not present	Not present	290.2	<0.01	Not present	<0.01	Not present	Not present	Not present	Not present	Not present	Not present	294.0
Depressional Seasonal Natural Emergent	Not present	0.6	31.5	7.0	0.1	10.1	Not present	2.3	2.0	7.7	Not present	Not present	10.9	<0.01	74.6	<0.01	3.8	22.9	0.2	Not present	Not present	0.08	173.8

Type	Aliso-San Onofre (acres) 18070301	Antelope-Fremont Valleys (acres) 18090206	Calleguas (acres) 18070103	Cuyama (acres) 18060007	Los Angeles (acres) 18070105	Middle Kern-Upper Tehachapi-Grapevine (acres) 18030003	Mojave (acres) 18090208	Newport Bay (acres) 18070204	San Antonio (acres) 18060009	San Gabriel (acres) 18070106	San Jacinto (acres) 18070202	San Luis Rey-Escondido (acres) 18070303	Santa Ana (acres) 18070203	Santa Barbara Coastal (acres) 18060013	Santa Clara (acres) 18070102	Santa Margarita (acres) 18070302	Santa Maria (acres) 18060008	Santa Monica Bay (acres) 18070104	Santa Ynez (acres) 18060010	Seal Beach (acres) 18070201	Ventura (acres) 18070101	Whitewater River (acres) 18100201	Total (acres)
Depressional Seasonal Natural Forested	<0.01	0.8	0.4	27.5	1.3	8.9	Not present	5.0	0.5	11.9	Not present	<0.01	4.4	<0.01	27.7	<0.01	0.1	285.3	<0.01	Not present	Not present	Not present	373.8
Depressional Seasonal Natural Non-vegetated	<0.01	Not present	0.04	Not present	39.1	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	<0.01	0.06	Not present	Not present	3.4	Not present	Not present	Not present	Not present	42.6
Depressional Seasonal Natural Shrub-Scrub	<0.01	0.10	0.6	164.9	14.9	1.7	Not present	6.9	25.3	20.3	Not present	Not present	1.2	<0.01	34.5	<0.01	23.2	95.3	0.1	Not present	<0.01	<0.01	389.0
Depressional Seasonal Unnatural Emergent	<0.01	<0.01	84.7	0.07	Not present	Not present	Not present	44.0	0.3	7.0	Not present	Not present	0.6	<0.01	11.8	<0.01	1.2	8.3	<0.01	0.3	Not present	Not present	158.2
Depressional Seasonal Unnatural Forested	Not present	<0.01	Not present	Not present	Not present	Not present	Not present	5.5	Not present	0.4	Not present	Not present	Not present	<0.01	Not present	Not present	Not present	3.5	<0.01	Not present	Not present	Not present	9.4
Depressional Seasonal Unnatural Non-vegetated	Not present	<0.01	0.5	0.5	Not present	Not present	Not present	4.0	0.05	2.1	Not present	Not present	39.4	<0.01	<0.01	<0.01	0.3	0.4	0.05	1.7	Not present	Not present	48.9
Depressional Seasonal Unnatural Shrub-Scrub	<0.01	Not present	<0.01	Not present	Not present	Not present	Not present	3.9	0.03	1.4	Not present	Not present	2.5	<0.01	12.9	Not present	Not present	1.5	<0.01	Not present	Not present	Not present	22.3
Depressional Unnatural Non-vegetated	Not present	Not present	Not present	0.07	Not present	Not present	Not present	Not present	Not present	4.7	Not present	Not present	1.2	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	6.0
Estuarine and Marine Deepwater	Not present	Not present	475.6	Not present	152.3	Not present	Not present	115.8	27.4	376.5	Not present	Not present	123.4	222.9	64.2	Not present	Not present	162.3	70.6	324.7	79.0	Not present	2,194.6

Type	Aliso-San Onofre (acres) 18070301	Antelope-Fremont Valleys (acres) 18090206	Calleguas (acres) 18070103	Cuyama (acres) 18060007	Los Angeles (acres) 18070105	Middle Kern-Upper Tehachapi-Grapevine (acres) 18030003	Mojave (acres) 18090208	Newport Bay (acres) 18070204	San Antonio (acres) 18060009	San Gabriel (acres) 18070106	San Jacinto (acres) 18070202	San Luis Rey-Escondido (acres) 18070303	Santa Ana (acres) 18070203	Santa Barbara Coastal (acres) 18060013	Santa Clara (acres) 18070102	Santa Margarita (acres) 18070302	Santa Maria (acres) 18060008	Santa Monica Bay (acres) 18070104	Santa Ynez (acres) 18060010	Seal Beach (acres) 18070201	Ventura (acres) 18070101	Whitewater River (acres) 18100201	Total (acres)
Estuarine and Marine Wetland	Not present	Not present	1,570.9	Not present	3.1	Not present	Not present	338.4	212.8	98.9	Not present	Not present	74.7	1,097.2	100.6	Not present	Not present	815.5	319.1	878.0	53.8		5,562.9
Estuarine Saline Natural Intertidal Emergent	Not present	Not present	21.6	Not present	Not present	Not present	Not present	1.7	Not present	Not present	Not present	Not present	0.01	<0.01	Not present	Not present	Not present	7.3	Not present	Not present	Not present	Not present	30.6
Estuarine Saline Natural Intertidal Non-vegetated	Not present	Not present	3.7	Not present	Not present	Not present	Not present	0.3	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	1.6	Not present	<0.01	Not present	Not present	5.7
Estuarine Saline Natural Intertidal Shrub-Scrub	Not present	Not present	0.05	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.3	Not present	Not present	Not present	Not present	0.3
Estuarine Saline Natural Subtidal Non-vegetated	Not present	Not present	0.2	Not present	Not present	Not present	Not present	0.4	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.1	Not present	Not present	Not present	Not present	0.7
Estuarine Saline Natural Subtidal Vegetated	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.2	Not present	Not present	Not present	Not present	0.2
Estuarine Saline Subtidal Non-vegetated	Not present	Not present	2.8	Not present	Not present	Not present	Not present	3.2	Not present	1.0	Not present	Not present	0.3	<0.01	0.04	Not present	Not present	<0.01	Not present	0.01	Not present	Not present	7.4
Estuarine Saline Unnatural Intertidal Emergent	Not present	Not present	3.8	Not present	Not present	Not present	Not present	Not present	Not present	0.4	Not present	Not present	0.5	Not present	Not present	Not present	Not present	Not present	Not present	0.6	Not present	Not present	5.2
Estuarine Saline Unnatural Intertidal Non-vegetated	Not present	Not present	1.0	Not present	Not present	Not present	Not present	Not present	Not present	0.01	Not present	Not present	7.0	Not present	Not present	Not present	Not present	0.07	Not present	Not present	Not present	Not present	8.0

Type	Aliso-San Onofre (acres) 18070301	Antelope-Fremont Valleys (acres) 18090206	Calleguas (acres) 18070103	Cuyama (acres) 18060007	Los Angeles (acres) 18070105	Middle Kern-Upper Tehachapi- Grapevine (acres) 18030003	Mojave (acres) 18090208	Newport Bay (acres) 18070204	San Antonio (acres) 18060009	San Gabriel (acres) 18070106	San Jacinto (acres) 18070202	San Luis Rey-Escondido (acres) 18070303	Santa Ana (acres) 18070203	Santa Barbara Coastal (acres) 18060013	Santa Clara (acres) 18070102	Santa Margarita (acres) 18070302	Santa Maria (acres) 18060008	Santa Monica Bay (acres) 18070104	Santa Ynez (acres) 18060010	Seal Beach (acres) 18070201	Ventura (acres) 18070101	Whitewater River (acres) 18100201	Total (acres)
Estuarine Saline Unnatural Intertidal Vegetated	Not present	Not present	0.01	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.01
Estuarine Saline Unnatural Muted Tidal Emergent	Not present	Not present	0.02	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.02
Estuarine Saline Unnatural Muted Tidal Non- vegetated	Not present	Not present	0.04	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.4	Not present	Not present	Not present	Not present	Not present	Not present	0.4	Not present	Not present	0.8
Freshwater Emergent Wetland	117.7	430.6	1,393.5	174.0	359.7	262.6	12.3	245.7	1,278.8	561.7	3.6	18.8	1,419.3	381.5	1,243.0	61.9	42.2	148.1	621.8	318.7	129.3	0.9	9,225.5
Freshwater Forested/ Shrub Wetland	378.2	373.8	1,847.2	1,323.8	3,236.3	34.5	25.6	496.4	2,102.0	4,058.4	26.2	48.3	9,744.1	2,038.8	8,375.3	817.2	433.2	1,797.6	3,518.9	41.2	1,477.8	15.4	42,210.4
Total ^a	1,815	2,6356	8,159	5,441	12,085	621	122	2,208	4,478	12,114	274	138	24,363	6,396	28,544	1,585	2,610	6,737	13,765	2,314	5,295	951	144,650

Source: Caltrans 2021e
^a Rounded to the nearest whole number.

Table 2-9. Non-wetland Water Types in the GAI

Type	Aliso-San Onofre (acres) 18070301	Antelope-Fremont Valleys (acres) 18090206	Calleguas (acres) 18070103	Cuyama (acres) 18060007	Los Angeles (acres) 18070105	Middle Kern-Upper Tehachapi- Grapevine (acres) 18030003	Mojave (acres) 18090208	Newport Bay (acres) 18070204	San Antonio (acres) 18060009	San Gabriel (acres) 18070106	San Jacinto (acres) 18070202	San Luis Rey-Escondido (acres) 18070303	Santa Ana (acres) 18070203	Santa Barbara Coastal (acres) 18060013	Santa Clara (acres) 18070102	Santa Margarita (acres) 18070302	Santa Maria (acres) 18060008	Santa Monica Bay (acres) 18070104	Santa Ynez (acres) 18060010	Seal Beach (acres) 18070201	Ventura (acres) 18070101	Whitewater River (acres) 18100201	Total (acres)
Freshwater Pond	25.9	33.0	716.2	20.3	1,088.3	7.0	9.7	260.3	193.3	1,121.3	7.5	34.4	2,466.8	217.8	1,471.6	56.4	40.9	198.9	281.9	524.7	54.1	19.9	8,850.4
Lacustrine Natural Non-vegetated	Not present	Not present	Not present	Not present	161.2	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.9	<0.01	Not present	Not present	Not present	162.8
Lacustrine Unnatural Emergent	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.24	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.2
Lacustrine Unnatural Non-vegetated	Not present	<0.01	Not present	Not present	Not present	Not present	Not present	1.7	Not present	0.34	Not present	Not present	4.4	<0.01	2.3	Not present	Not present	0.06	<0.01	Not present	Not present	Not present	8.9
Lake	0.8	86.2	236.4	Not present	1,715.1	4.13	Not present	173.5	37.4	2,059.7	0.02	Not present	1,840.9	50.3	6,167.2	Not present	Not present	741.4	3,428.1	50.6	2,472.5	Not present	19,064.1
Marine Natural Intertidal Non-vegetated	Not present	Not present	0.5	Not present	Not present	Not present	Not present	1.8	1.5	Not present	Not present	Not present	Not present	<0.01	Not present	Not present	Not present	0.4	Not present	Not present	Not present	Not present	4.2
Marine Unnatural Intertidal Non-vegetated	Not present	Not present	0.01	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	Not present	0.09	Not present	Not present	Not present	Not present	0.1
Riverine	1,292.3	1,710.7	1,762.8	3,722.2	5,227.0	290.44	74.5	438.4	596.9	5,755.8	236.8	36.4	8,209.5	2,387.8	10,924.7	649.1	2,062.5	2,432.7	5,523.7	169.9	1,028.4	915.0	55,447.4
Total^a	1,319	1,830	2,716	3,742	8,192	302	84	876	829	8,937	244	71	12,522	2,656	18,566	705	2,103	3,375	9,234	745	3,555	935	83,538

Source: Caltrans 2021f

^a Rounded to the nearest whole number.

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2.17.4. Threatened and Endangered Fish Species

Special-status terrestrial species are discussed in Section 2.8. Threatened and endangered fish species known to occur or with the potential to occur in the GAI were extracted from the SAMNA Reporting Tool's fish habitat layer, which was developed using the USGS National Hydrography Dataset and other information (Caltrans 2018, 2021g). Based on a search of the fish habitat layer, five federal or state listed threatened or endangered fish species are known to occur or have the potential to occur in the GAI:

- federally endangered Southern California Coast DPS steelhead
- federally and state endangered Mohave tui chub (*Siphateles bicolor mohavensis*)
- federally threatened Santa Ana sucker (*Catostomus santaanae*)
- federally endangered tidewater goby (*Eucyclogobius newberryi*)
- federally and state endangered unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*)

As described previously in Sections 2.9 and 2.10, the GAI includes FWS- and NMFS-designated final critical habitat for Santa Ana sucker, Southern California Coast DPS steelhead, and tidewater goby, and NMFS-designated EFH for Pacific groundfish.

Sespe Creek, located in the Santa Clara sub-basin, provides important spawning habitat for steelhead (National Wild and Scenic Rivers 2021). The Sisquoc River, located in the Santa Maria sub-basin, supports steelhead.

2.18 Areas of Special Biological Significance

The California Ocean Plan, originally adopted by the State Water Board in 1972 and updated most recently in 2019, establishes water quality objectives for ocean waters and provides the basis for the regulation of wastes discharged into coastal waters from both point and non-point sources (State Water Board 2019a). It defines ASBS as “those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities...” and requires that waste be discharged a sufficient distance from an ASBS to ensure “maintenance of natural water quality” (State Water Board 2019a). According to Resolution Nos. 74-28, 74-32, and 75-61, the State Water Board designated 34 ocean areas along the coast of California as ASBS (State Water Board 2019a). These areas typically support a variety of aquatic life and often host unique individual species (State Water Board 2017). Figure 2-18 shows ASBS located in proximity to the GAI. From north to south, the GAI's coastline is adjacent to the Laguna Point to Latigo Point ASBS, which occupies 24 miles of coastline in Los Angeles and Ventura Counties, the Robert E. Badham ASBS, which occupies 0.7 mile of coastline in Orange County, and the Irvine Coast ASBS, which occupies 3.4 miles along the coast from Pelican Point to Laguna Beach (State Water Board 2017).

3. RELEVANT PLANS, POLICIES, AND REGULATIONS

This chapter summarizes the references applicable to the GAI that, when relevant, Caltrans will consult when conceptualizing advance mitigation projects. The table is organized by subject: laws and regulations, statewide and regional resource management plans, plans and permits focused on the species of mitigation need, resource agency land management plans (separated by agency), water resources plans and documents, county and city general plans, and other organization conservation and management documents. HCPs, NCCPs, and RCIS documents are discussed separately in Chapter 4 because they represent or support current compensatory mitigation credit purchase opportunities for Caltrans. Table 3-1 provides the following information for each reference identified:

- Reference document title
- Status:
 - Final: The reference is completed.
 - Draft: The reference is not complete, and changes may occur when it is finalized.
 - In progress: A formal draft version has not been completed, and the document is being written.
 - In litigation: The reference is subject to at least one lawsuit and is not being revised.
 - Updated periodically: The reference is updated with new information on a somewhat frequent basis.
 - Not publicly available: The reference is known to exist but does not appear to be publicly available.
- Spatial data – whether a map is provided with the document
- Reference purpose – a summary of information relevant to advance mitigation planning and/or a summary of reference intent
- Link – where the reference can be found
- Date – when the reference was published or last updated

The list of relevant documents, policies, and regulations in Table 3-1 is not exhaustive. Additional relevant resources may be consulted by Caltrans as advance mitigation planning is conceptualized. For example, LCPs are updated frequently. When conducting advance mitigation project scoping, Caltrans will check to determine whether it has the most up-to-date version of a particular reference.

3.1 Relationship to Goals and Objectives

As pointed out in Chapter 1, the GAI for this RAMNA was selected by Caltrans District 7 based on the SAMNA results and other information. District 7 specifically identified compensatory mitigation for the California red-legged frog, mountain lion, dusky-footed/big-eared woodrat, southwestern willow flycatcher, coastal California gnatcatcher, and aquatic resources as historical and anticipated mitigation needs.

Hence, Table 3-1 emphasizes documents related to the specified wildlife and aquatic resources, which, in turn, form the basis for the goals and objectives presented in Chapters 7 and 8. As much as practicable, however, Caltrans intends for any compensatory mitigation established in the GAI to support these specific wildlife and aquatic resources to benefit other wildlife and aquatic resources as well.

Table 3-1. Comprehensive Plans, Agreements, Resource Management Plans, Policies, and Regulations Relevant to the GAI

Title	Status	Spatial Data	Reference Purpose	Link	Date
State Laws, Guidelines, and Regulations	See below	See below	See below	See below	See below
California Coastal Act of 1976	Updated periodically (by California legislature)	No	The California Coastal Act is the primary law that governs decisions of the CCC. It outlines, among other things, standards for development within the coastal zone. The Act requires mitigation for impacts on coastal habitats and other types of coastal resource impacts—for example, visual impacts—that are outside the scope of this document. The CCC regulates potentially impactful projects within the coastal zone, primarily through the issuance of coastal development permits. In coastal local jurisdictions where the CCC has certified an LCP, the local government assumes coastal development permit authority within its jurisdiction (with certain exceptions, such as some coastal wetlands, where the CCC retains original jurisdiction). LCPs are used by local governments to guide development in the coastal zone in coordination with the CCC. LCPs that overlap the GAI are listed in Appendix D.	https://www.coastal.ca.gov/coastact.pdf	10/9/2019 (last amended)
California Fish and Game Commission Wetlands Resources Policy	Updated periodically	No	California Fish and Game Commissions policy to seek to provide for the protection, preservation, restoration, enhancement, and expansion of wetland habitat in California.	https://fgc.ca.gov/About/Policies/Miscellaneous#Wetlands	8/18/2005 (last amended)
California Water Boards 2010 Update to Strategic Plan 2008–2012	Final	No	Update to strategic plan from the State Water Board and RWQCBs. Goals include implementing strategies to fully support beneficial uses for all water bodies listed in the 2006 report, improve and protect groundwater quality, increase sustainable local water supplies available for meeting beneficial uses by 1,725,000 acre-feet per year, comprehensively address water quality protection and restoration, improve transparency and accountability within the Water Boards, enhance consistency across the Water Boards, and ensure that the Water Boards have access to information and expertise.	https://www.waterboards.ca.gov/water_issues/hot_topics/strategic_plan/docs/2010/final_strategic_plan_update_report_062310.pdf	6/1/2010
CCC Sea Level Rise Policy Guidance	Updated periodically	No	CCC's policy guidance document for integrating development projects in the coastal zone with sea-level rise projections for LCPs and coastal development permits.	https://www.coastal.ca.gov/climate/slrguidance.html	11/7/2018 (last updated)
CESA	Updated periodically (by California legislature)	No	Authorizes CDFW to protect State of California listed threatened and endangered species.	https://www.wildlife.ca.gov/Conservation/CESA	9/10/2018 (last amended)
Definition and Delineation of Wetlands in the Coastal Zone	Final	No	Implemented by the CCC. Serves as a reference guide to help interpret CCC law and regulations which, in part, define wetlands with a one-parameter approach by which any of the three Corps' indicators constitutes a wetland. This document also includes wetland delineation procedures.	https://documents.coastal.ca.gov/reports/2011/10/W4-10-2011.pdf	10/5/2014
Executive Order W-59-93	Final	No	Governor of California's directive for a no net loss policy on the quantity, quality, and permanence of wetland acreages and values.	https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/wrapp2008/executive_order_w59_93.pdf	8/23/1993
Porter-Cologne Water Quality Control Act	Updated periodically (by California legislature)	No	Law that governs water quality in California, establishing the nine RWQCBs and their jurisdiction to protect California's surface water and groundwater through water quality objectives and the beneficial uses of water as outlined in a project's waste discharge requirements.	https://www.waterboards.ca.gov/laws_regulations/docs/portercologne.pdf	1/1/2019 (last amended)
Rising Seas in California: An Update on Sea-Level Rise Science	Final	No	Drafted by the Working Group of the California OPC Science Advisory Team. Provides a summary of state science on sea-level rise and gives the foundation for the State of California Sea-Level Rise Guidance: 2018 Update.	https://cawaterlibrary.net/document/rising-seas-in-california-an-update-on-sea-level-rise-science/	4/1/2017
State Board Resolution No. 68-16	Final	No	Policy for maintaining high water quality.	https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf	10/28/1968

Title	Status	Spatial Data	Reference Purpose	Link	Date
State of California Sea-Level Rise Guidance: 2018 Update	Final	No	Drafted by CNRA and OPC. Provides guidance to state agencies for incorporating sea-level rise projections into planning, permitting, investment, and other decisions.	https://www.opc.ca.gov/updating-californias-sea-level-rise-guidance/	3/14/2018
State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State	Final	No	Implemented by the State Water Board. Creates a State of California wetland definition, a framework for determining jurisdiction of state wetlands, wetland delineation procedures, and application procedures for discharges of dredge and fill material to waters of the state.	https://www.waterboards.ca.gov/water_issues/programs/cwa401/wrapp.html	5/28/2020 (effective date)
Streambed Alteration Program, FGC § 1602	Updated periodically (by California legislature)	No	Implemented by CDFW. Regulates activities that may 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. CDFW jurisdiction extends to top-of-bank of the outer extent of riparian habitat, if present.	https://www.wildlife.ca.gov/conservation/lisa	6/27/2017 (last amended)
Water Quality Control Plan for the Central Coast Region	Updated periodically	Yes	Implemented by the Central Coast Basin RWQCB. Establishes general and site-specific water quality standards and objectives in the Central Coast Basin. Identifies beneficial uses of waterbodies.	https://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/	6/14/2019 (last amended)
Water Quality Control Plan for the Colorado River Region	Updated periodically	Yes	Implemented by the Colorado River RWQCB. Establishes general and site-specific water quality objectives in the Colorado River Basin. Identifies beneficial uses of waterbodies.	https://www.waterboards.ca.gov/coloradoriver/water_issues/programs/basin_planning/	1/8/2019 (last amended)
Water Quality Control Plan for the Lahontan Region	Updated periodically	Yes	Implemented by the Lahontan RWQCB. Establishes general and site-specific water quality objectives in the Lahontan Basin. Identifies beneficial uses of waterbodies.	https://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/	10/17/2020 (last amended)
Water Quality Control Plan for the Los Angeles Region Basin	Updated periodically	Yes	Implemented by the Los Angeles RWQCB. Establishes general and site-specific water quality standards and objectives in the Los Angeles Region. Identifies beneficial uses of waterbodies.	https://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/	2/13/2020 (last amended)
Water Quality Control Plan for the San Diego Region	Updated periodically	Yes	Implemented by the San Diego RWQCB. Establishes general and site-specific water quality standards and objectives in the San Diego Region. Identifies beneficial uses of waterbodies.	https://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/	5/17/2016 (last amended)
Water Quality Control Plan for the Santa Ana River Basin	Updated periodically	Yes	Implemented by the Santa Ana RWQCB. Establishes general and site-specific water quality standards and objectives in the Santa Ana Region. Identifies beneficial uses of waterbodies.	https://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/	6/14/2019 (last amended)
Water Quality Control Plan for the Tulare Lake Basin	Updated periodically	Yes	Implemented by the Central Valley RWQCB. Establishes general and site-specific water quality objectives and general objectives in the Tulare Lake Basin. Identifies beneficial uses of waterbodies.	https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/tlbp_201805.pdf	5/1/2018 (last amended)
Federal Laws, Guidelines, and Regulations	See below	See below	See below	See below	See below
2008 Final Compensatory Mitigation Rule	Final	No	Corps' ruling to establish standards and criteria for the use of all types of compensatory mitigation, including on- and off-site permittee-responsible mitigation, mitigation banks, and in-lieu fee mitigation to offset unavoidable impacts on WOTUS.	https://www.govinfo.gov/content/pkg/CFR-2012-title33-vol3/xml/CFR-2012-title33-vol3-part332.xml	7/9/2008
303(d) List of Impaired Water Bodies	Updated periodically	No	EPA and the State Water Board's listing of regulated impaired water bodies.	https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml	4/11/2018 (last updated)
40 CFR § 131.12 California Antidegradation Policy	Final	No	Implemented by the State Water Board. Required by federal law, the Antidegradation Policy applies to the disposal of waste to high-quality surface water and groundwater.	https://www.waterboards.ca.gov/plans_policies/antidegradation.html	8/21/2015 (last amended)
Corps Regulatory Guidance Letter 18-01	Final	No	Corps' guidance document on determining compensatory mitigation credits for the removal of obsolete dams and other structures from rivers and streams.	https://usace.contentdm.oclc.org/utis/getfile/collectio/p16021coll9/id/1473	9/25/2018

Title	Status	Spatial Data	Reference Purpose	Link	Date
CWA	Updated periodically (by Congress)	No	Authorized by EPA and delegated to the Corps and the State Water Board, the CWA establishes the basic structure for regulating discharges of pollutants into WOTUS and regulating quality standards for surface waters.	https://www.law.cornell.edu/uscode/text/33/1344	2/4/1987 (last amended)
CWA § 401	Updated periodically (by Congress)	No	Implemented by EPA and the State Water Board. Regulates discharge of pollutants into WOTUS.	https://www.law.cornell.edu/uscode/text/33/1341	12/27/1977 (last amended)
CWA § 402 National Pollutant Discharge Elimination System MS4 Permit	Updated periodically (by Congress)	No	Implemented by EPA and the State Water Board. Regulates discharge of stormwater from municipal sources that is a conveyance or system of conveyances that is: <ul style="list-style-type: none"> owned by a state, city, town, village, or other public entity that discharges to WOTUS, designed or used to collect or convey stormwater (e.g., storm drains, pipes, ditches), not a combined sewer, and not part of a sewage treatment plant or publicly owned treatment works. 	https://www.epa.gov/npdes/stormwater-discharges-municipal-sources	1/19/2019 (last amended)
CWA § 404	Updated periodically (by Congress)	No	Implemented by EPA and the Corps. Regulates discharge of dredge or fill material into WOTUS.	https://www.epa.gov/cwa-404/section-404-permit-program	11/6/1986 (last amended)
ESA	Updated periodically (by Congress)	No	Authorizes FWS and NMFS to protect federally listed threatened and endangered species.	https://www.fws.gov/endangered/laws-policies/	11/24/2003 (last amended)
Executive Order 11990, Protection of Wetlands	Final	No	Aims to minimize the destruction, loss, or degradation of wetlands and preserve and enhance the natural and beneficial values of wetlands.	https://www.epa.gov/cwa-404/protection-wetlands-executive-order-11990	3/24/1977
Final 2015 Regional Compensatory Mitigation and Monitoring Guidelines for South Pacific Division	Final	No	Corps' guidelines for mitigation and monitoring in the South Pacific Division, including California.	https://www.spd.usace.army.mil/portals/13/docs/regulatory/mitigation/mitmon.pdf	12/19/2014 (last amended)
National Wetlands Mitigation Action Plan	Final	No	EPA and Corps comprehensive, interagency document to further achievement of the goal of no net loss of wetlands and to set forth the no net loss policy.	https://www.epa.gov/cwa-404/national-wetlands-mitigation-action-plan	12/26/2002
The Navigable Waters Protection Rule	In progress	No	The April 21, 2020, navigable waters protection rule has been vacated by the court and implementation has been halted. Rulemakings to revise the rule are currently in progress.	https://www.epa.gov/nwpr/final-rule-navigable-waters-protection-rule	6/9/2021 (announcement of rulemaking process)
Section 10 of the Rivers and Harbors Act of 1899	Updated periodically (by Congress)	No	Authorizes the Corps to protect navigable WOTUS by requiring a permit for construction of any structure over a navigable WOTUS. A Section 10 permit is required if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, rechannelization, or any other modification of a navigable WOTUS.	https://www.spl.usace.army.mil/Missions/Regulatory/Jurisdictional-Determination/Section-10-of-the-Rivers-Harbors-Act/	7/26/1947 (last amended)
Section 14 of the Rivers and Harbors Appropriation Act of 1899	Updated periodically (by Congress)	No	Implemented by EPA and the Corps. Regulates the temporary occupation or use of any sea wall, bulkhead, jetty, dike, levee, wharf, pier or other work built by the United States.	https://www.poa.usace.army.mil/Portals/34/docs/regulatory/Section%2014.pdf#:~:text=Section%2014%20of%20the%20Rivers%20and%20Harbors%20Act,o r%20other%20work%20built%20by%20the%20Unit ed%20States.	10/23/2018 (last amended)
Wild and Scenic Rivers Act	Final	Yes	Reserves certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. All federal agencies must seek to avoid or mitigate actions that would adversely affect National River Inventory river segments.	https://www.law.cornell.edu/uscode/text/16/chapter-28	12/19/2014 (last amended)

Title	Status	Spatial Data	Reference Purpose	Link	Date
Statewide and Regional Resource Planning Documents	See below	See below	See below	See below	See below
2018 Master Plan for Fisheries A Guide for Implementation of the Marine Life Management Act	Final	No	CDFW's plan to implement the Marine Life Management Act. Includes goals to manage priority species, achieve sustainability for commercial fish stocks, conserve ecosystems, integrate marine protected areas into fisheries management, and provide adaptive management for climate change. Provides a framework for specific management plan creation.	https://wildlife.ca.gov/Conservation/Marine/Master-Plan	6/1/2018
A Climate Change Vulnerability Assessment of California's Terrestrial Vegetation	Final	Yes	CDFW's document to assess the climate vulnerability of terrestrial vegetation.	https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=116208&inline	1/1/2016
A Strategy for California @ 50 Million – Supporting California's Climate Change Goals	Final	Yes	Planning report from the California Governor's Office that focuses on sustainability efforts across California in response to climate change.	http://opr.ca.gov/docs/EGPR_Nov_2015.pdf	11/1/2015
ACE Connectivity Project Version 3.0	Updated periodically	Yes	A CDFW effort to analyze large amounts of map-based data to inform decisions around goals such as biodiversity conservation, habitat connectivity, and climate change resiliency.	https://wildlife.ca.gov/Data/Analysis/ACE	7/10/2019 (last updated)
California Biodiversity Initiative	Final	No	A CNRA, California Department of Food and Agriculture, and Governor's Office of Planning and Research high-level planning document. Provides a roadmap to secure California's biodiversity future.	https://californiabiodiversityinitiative.org/pdf/california-biodiversity-action-plan.pdf	9/2018
California Coastal Trail Mapping Viewer	In progress	Yes	GIS map created by CCC and the Coastal Conservancy showing existing segments of the California Coastal Trail. Most California Coastal Trail segments are located in public open space or the Caltrans right-of-way, and Caltrans is a statutory partner in maintaining and advancing the trail. Caltrans should be aware of any potential trail alignments when planning and designing mitigation projects.	https://the-california-coastal-trail-1-coastalcomm.hub.arcgis.com/	Updated frequently
California Essential Habitat Connectivity Project	Final	Yes	CDFW and Caltrans assessment to identify large remaining blocks of intact habitat or natural landscape and model linkages between them that need to be maintained, particularly as corridors for wildlife.	https://www.wildlife.ca.gov/conservation/planning/connectivity/CEHC	2/1/2010
California Marine Life Protection Act Master Plan for Marine Protected Areas	Final	No	CDFW's management plan for marine protected areas.	https://www.wildlife.ca.gov/Conservation/Marine/MPPAs/Master-Plan	8/24/2016
California Water Action Plan 2016 Update	Final	No	Calls for action to restore key mountain meadow habitat, manage headwaters, restore coastal watersheds, and enhance water flows in streams statewide.	http://resources.ca.gov/docs/california_water_action_plan/Final_California_Water_Action_Plan.pdf	2016
California Watershed Assessment Manual Volume I	Final	No	Provides guidance for conducting a watershed assessment in California.	http://www.cwam.ucdavis.edu/Manual_chapters.htm	5/1/2005
California Wildlife Barriers: 2020 Priority Wildlife Movement Barrier Locations by Region	Final	Yes	CDFW's priority wildlife movement barriers across the state. This document is focused on large wild mammal game species; however, some priorities would benefit special-status species such as bighorn sheep.	http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=178511	3/1/2020
Caltrans Adaptation Strategies Report: District 7	Final	No	Caltrans initiated a major agency-wide effort to adapt its infrastructure so that it can withstand future conditions. The effort began by determining which assets are most likely to be adversely affected by climate change in each Caltrans district.	https://dot.ca.gov/programs/transportation-planning/2020-adapation-priorities-reports	1/1/2021
Caltrans Climate Change Vulnerability Assessment, District 7 Technical Report	Final	No	Caltrans assessment of climate change vulnerabilities for the district.	https://dot.ca.gov/programs/transportation-planning/2019-climate-change-vulnerability-assessments	10/1/2019

Title	Status	Spatial Data	Reference Purpose	Link	Date
CCC Strategic Plan 2020–2025	Final	No	CCC draft to guide agency actions from 2020 to 2025. The plan currently contains 9 goals, 49 objectives, and 189 specific actions. Of these, Caltrans is identified in 16 specific actions, including coordination on biodiversity resources and advanced mitigation (3.1.3, 3.2.3, 3.2.4), climate change planning (4.1.2, 4.1.3, 4.1.4, 4.1.5, 4.3.1, 4.4.2), LCP engagement (6.1.3, 6.1.5, 6.2.1), environmental justice (5.2.1, 5.2.3), and information/GIS collaboration (8.1.1, 8.1.7, 9.6.2, 9.6.4).	https://www.coastal.ca.gov/strategicplan/spindex.html	11/6/2020
Coastal Storm Modeling System (CoSMoS)	Updated periodically	Yes	A tool developed by USGS to allow for detailed predictions of coastal flooding attributable to projected sea-level rise and storm systems. Includes projections of storm scenarios under different sea-level rise conditions. This system is integrated with Our Coast Our Future: Coastal Storm Modeling System, noted below.	https://www.usgs.gov/centers/pcmssc/science/coastal-storm-modeling-system-cosmos?qt-science_center_objects=0#qt-science_center_objects	9/1/2021 (last piece added)
Large Mammal-Vehicle Collision Hot Spot Analyses, California, USA	Final	Yes	Western Transportation Institute's report documenting the methods and results of hot-spot analyses of large wild mammal-vehicle collisions in California, with an emphasis on mule deer. These analyses identified the road sections that had the highest concentration of deer-vehicle crashes and mule deer carcasses. Special-status species were not addressed.	https://westerntransportationinstitute.org/wp-content/uploads/2019/09/4W6693_Huijser-and-Begley-FINAL-Report-Caltrans-Statewide-20190913-reduced-image-size.pdf	9/13/2019
Our Coast Our Future: Coastal Storm Modeling System	Updated periodically	Yes	A USGS mapping program tracking projected sea-level rise for the California coast.	https://data.pointblue.org/apps/ocof/cms/	2016 (last piece added)
Safeguarding California Plan: 2018 Update	Final	No	A conservation plan by CNRA. Includes goals to strengthen the climate adaptation component of conservation planning efforts, enhance habitat connectivity, protect climate refugia through strategic acquisition and protection activities, increase restoration and enhancement activities to increase climate resiliency of natural and working lands, increase biodiversity monitoring efforts, continue incorporating climate considerations into state investment decision processes, and provide educational opportunities to the public and state agency staff regarding climate impacts and adaptation options.	http://resources.ca.gov/docs/climate/safeguarding/update2018/safeguarding-california-plan-2018-update.pdf	1/1/2018
Strategic Plan to Protect California's Coast and Ocean 2020–2025	Draft	Yes	OPC's plan for coastal and ocean protection. Includes goals and objectives centered on safeguarding coastal and marine ecosystems, advancing equity across ocean and coastal policies and actions, enhancing coastal and marine biodiversity, and improving ocean health with economic factors.	http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20191113/Draft-Revised-Strategic-Plan-for-CA-Coast-and-Ocean_11.1.19_draft-FINAL.pdf	11/1/2019
SWAP	Updated periodically (5-year intervals)	Yes	CDFW's plan for protection of species of greatest conservation need, in addition to habitats and other wildlife in California.	https://www.wildlife.ca.gov/SWAP/Final	9/1/2015
SWAP Marine Resources Companion Plan	Final	Yes	CDFW's companion document to SWAP to assess the vulnerability and conservation strategies for the California coast and coastal waters.	https://wildlife.ca.gov/SWAP/Final/Companion-Plans	12/1/2016
SWAP Transportation Companion Plan	Final	Yes	CDFW's companion document to SWAP for protection of species specific to transportation project planning.	https://wildlife.ca.gov/SWAP/Final/Companion-Plans	12/1/2016
SWAP Water Management Companion Plan	Final	Yes	CDFW's companion document to SWAP to recommend water management practices throughout the state of California.	https://wildlife.ca.gov/SWAP/Final/Companion-Plans	12/1/2016

Title	Status	Spatial Data	Reference Purpose	Link	Date
Special-status Taxa^a Documents	See below	See below	See below	See below	See below
Recovery Plan for the California Red-legged Frog	Final	Yes	<p>FWS' recovery plan for California red-legged frog occurring in the GAI. The recovery criteria that must be achieved before delisting can occur are:</p> <ul style="list-style-type: none"> ▪ All suitable habitats in Core Areas (6 out of 35 of that are in the GAI) are protected in perpetuity and the ecological integrity of these areas is not threatened. ▪ Existing populations throughout the range are stable, and they are geographically distributed in a manner that allows for the continued existence of viable metapopulations despite subpopulation fluctuations. ▪ There is successful reestablishment in portions of its historic range such that at least one reestablished population is stable/increasing in each core area where frogs are currently absent. ▪ The amount of additional habitat needed for population connectivity, recolonization, and dispersal has been determined, protected, and managed for the California red-legged frog. 	https://ecos.fws.gov/ecp/species/2891	5/28/2002
California Red-legged Frog 5-Year Review	Updated periodically	N/A	FWS has not completed a formal 5-year review of this species.	https://ecos.fws.gov/ecp/species/2891	N/A
California Red-legged Frog Designation of Critical Habitat	Final	Yes	FWS' designation of critical habitat for the California red-legged frog.	https://www.govinfo.gov/content/pkg/FR-2010-03-17/pdf/2010-4656.pdf#page=2	3/17/2010
California Red-legged Frog Biological Opinions	Updated periodically	No	FWS' list of the 231 most recent biological opinions that have been used for California red-legged frog, of which 14 were for projects in the GAI.	https://ecos.fws.gov/ecp/species/2891	9/15/2020 (latest document)
California Fish and Game Commission Status on Listing of Mountain Lion under California ESA	Update in progress	No	California Fish and Game Commission website documenting the status of the mountain lion as the species goes through the regulatory process of being listed under CESA. Documents on this page are added periodically until a final listing decision is made; they include the petition for species listing and the notice of findings. Mountain lion is currently in the candidate phase with a status report tentatively due November 3, 2021.	https://fgc.ca.gov/CESA#ml	4/21/2020 (latest document)
Mammalian Species of Special Concern	Update in progress	No	CDFW document providing life history and conservation information about mammal species, including mountain lion.	https://wildlife.ca.gov/Conservation/SSC/Mammals	2/23/1986
Recovery Plan for the Coastal California Gnatcatcher	N/A	N/A	No FWS recovery plan for this species currently exists.	N/A	N/A
Coastal California Gnatcatcher 5-Year Review	Updated periodically	Yes	FWS' most recent formal review of the species condition.	https://ecos.fws.gov/ecp/species/8178	6/8/2020
Coastal California Gnatcatcher Designation of Critical Habitat	Final	Yes	FWS' designation of critical habitat for the coastal California gnatcatcher.	https://ecos.fws.gov/ecp/species/8178	12/19/2007
Coastal California Gnatcatcher Biological Opinions	Updated periodically	No	FWS' list of the 108 most recent biological opinions that have been used for coastal California gnatcatcher, of which 40 were for projects in the GAI.	https://ecos.fws.gov/ecp/species/8178	1/12/2021 (latest document)
Recovery Plan for the Southwestern Willow Flycatcher	Final	Yes	FWS recovery plan for the southwestern willow flycatcher. The recovery criteria that must be met before delisting can occur are to increase the total known population to a minimum of 1,950 territories (approximately 3,900 individuals) that are geographically distributed in a manner described in Table 10 of the recovery plan, and to provide permanent protection for these populations such that they are not threatened over time.	https://ecos.fws.gov/ecp/species/6749	8/30/2002
Southwestern Willow Flycatcher 5-Year Review	Updated periodically	Yes	FWS' most recent formal review of the species condition.	https://ecos.fws.gov/ecp/species/6749	12/29/2017

Title	Status	Spatial Data	Reference Purpose	Link	Date
Southwestern Willow Flycatcher Designation of Critical Habitat	Final	Yes	FWS designation of critical habitat for the southwestern willow flycatcher.	https://ecos.fws.gov/ecp/species/6749	1/3/2013
Southwestern Willow Flycatcher Biological Opinions	Updated periodically	No	FWS' list of the 63 most recent biological opinions that have been used for southwestern willow flycatcher, of which 17 were for projects in the GAI.	https://ecos.fws.gov/ecp/species/6749	6/10/2021 (latest document)
Incidental Take Permits for Southwestern Willow Flycatcher	Final	No	CDFW's list of incidental take permits issued for southwestern willow flycatcher. Since 2020, four permits have been issued.	https://nrm.dfg.ca.gov/documents/docviewer.aspx	7/23/2020 (latest document)
California Partners in Flight Riparian Bird Conservation Plan Willow Flycatcher (<i>Empidonax traillii</i>)	Final	No	Prepared by staff from USFS and FWS, this conservation plan addressed issues related to all subspecies of willow flycatcher, including the southwestern willow flycatcher.	http://www.prbo.org/calpif/htmldocs/riparian.html	1/1/1998
Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon	Final	Yes	FWS recovery plan for vernal pool species in California and Oregon, which includes 25 plants, 7 invertebrates, and 1 amphibian, for a total of 33 species. In general, recovery criteria center on habitat protection and adaptive habitat management, which includes developing management plans, conducting status surveys, finding populations to be at least maintaining their population if not increasing, conducting research, and having additional public outreach and participation. Some species-specific criteria exist, such as seed banking for plants and preferential transition from intensive agriculture to grazing near western spadefoot toad conservation areas. Sixteen regions are identified in this plan, along with 41 core areas.	https://www.fws.gov/sacramento/es/Recovery-Planning/Vernal-Pool/	12/15/2005
Recovery Plan for Vernal Pools of Southern California	Final	Yes	FWS recovery plan for seven vernal pool species in Southern California, including five plants and two aquatic invertebrates. In general, recovery criteria center on acquiring land where these species occur for conservation, enhancing or restoring these pools such that populations of these species stabilize or increase, and ensuring that trends in stability or population growth are sustained for 10 years.	https://www.fws.gov/carlsbad/SpeciesStatusList/RP/19980903_RP_Vernal%20Pools%20of%20Southern%20CA.pdf	9/1/1998
State Land Management Plans	See below	See below	See below	See below	See below
General Planning Handbook for California State Parks	Final	Yes	California State Parks' guidelines for general plan development, which requires an inventory of known natural resources and general guidelines to comply with federal and state laws. Eighty-three state park entities occur in the GAI. Those with specific information pertinent to Chapters 7 and 8 of this RAMNA are listed below.	http://www.parks.ca.gov/pages/21299/files/planning_handbook_april_2010.pdf	4/1/2010
Final Land Management Plan Burton Mesa Ecological Reserve	Final	Yes	CDFW's management plan for the reserve. California red-legged frog is known to occur in the reserve. Includes a number of enhancement and restoration goals centered on aquatic habitat, some of which can also benefit California red-legged frog.	https://wildlife.ca.gov/Lands/Planning	8/31/2007
Chino Hills State Park General Plan	Final	Yes	Management plan for the park. The park has populations of mountain lions and coastal California gnatcatchers. Includes goals for enhancement of wildlife movement corridors, restoration of riparian habitat in the Lemon Grove Area, and removal of giant reed from the portion of the Santa Ana River that flows through the park.	https://www.parks.ca.gov/?page_id=21299	2/1/1999 (last amended)
Crystal Cove State Park General Plan	Final	Yes	Management plan for the park. The park has populations of coastal California gnatcatchers.	https://www.parks.ca.gov/?page_id=21299	11/2003 (last amended)
El Capitan State Park General Plan	Final	No	Management plan for the park. The park has documented observations and/or is thought to support dusky-footed woodrat.	https://www.parks.ca.gov/?page_id=21299	7/1/1989
La Purisima State Historic Park General Plan	Final	No	Management plan for the park. Includes goals to restore Los Berros Creek, establish and/or protect wildlife corridors in the park, and restore the park's historic natural environment, including the removal of nonnative plant species.	https://www.parks.ca.gov/?page_id=21299	9/1/1991

Title	Status	Spatial Data	Reference Purpose	Link	Date
Leo Carrillo State Park General Plan	Final	Yes	Management plan for the park. Includes goals to restore Arroyo Sequit and associated riparian areas and to enhance and protect native steelhead trout runs.	https://www.parks.ca.gov/?page_id=21299	10/1/1996
Malibu Creek State Park General Plan and Final Impact Report	Final	Yes	Management plan for the park. Includes goals for habitat restoration generally. Mountain lion are known to inhabit the park.	https://www.parks.ca.gov/?page_id=21299	3/1/2005
Rio de Los Angeles State Park General Plan and Final Impact Report	Final	Yes	Management plan for the park. Historically, mountain lions were known to inhabit the park. Includes a goal to develop and implement a revegetation management plan.	https://www.parks.ca.gov/?page_id=21299	6/1/2005
San Buenaventura State Beach General Plan	Final	Yes	Management plan for the park. The plan recommends wetland enhancement in and around Allesandro Lagoon.	https://www.parks.ca.gov/?page_id=21299	7/1/1979
Santa Susana Pass State Historic Park General Plan/Environmental Impact Report	Final	Yes	Management plan for the park. Mountain lions are known to occur within the park.	https://www.parks.ca.gov/?page_id=21299	2/29/2008
Topanga State Park Final General Plan	Final	Yes	Management plan for the park. Includes goals to restore the Topanga Creek and associated lagoons and to enhance the Mulholland Corridor buffer zone.	https://www.parks.ca.gov/?page_id=21299	9/28/2012
FWS Land Management Plans	See below	See below	See below	See below	See below
Hopper Mountain, Bitter Creek, and Blue Ridge National Wildlife Refuges Final Comprehensive Conservation Plan	Final	Yes	FWS' plan for the Bitter Creek and Hopper Mountain National Wildlife Refuges. The Blue Ridge National Wildlife Refuge is not in the GAI. Includes goals to enhance riparian and wetland areas of Hopper Mountain and Bitter Creek.	https://www.fws.gov/refuge/Bitter_Creek/what_we_d_o/planning.html	9/1/2013
Seal Beach National Wildlife Refuge Final Comprehensive Conservation Plan	Final	Yes	FWS' plan for the Seal Beach National Wildlife Refuge. Includes a general goal to enhance riparian and wetland areas of the refuge. Includes specific goals to restore approximately 24 acres of disturbed upland habitat into wetland and wetland/upland transitional habitat, and to restore approximately 10 acres of upland habitat to a habitat type that could be used by coastal California gnatcatcher.	https://www.fws.gov/refuge/Seal_Beach/what_we_d_o/planning.html	5/18/2012
U.S. Military Land Management Plans	See below	See below	See below	See below	See below
Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California	Final	Yes	The U.S. Navy's management plan for the bases. Includes several goals pertaining to aquatic resources, southwestern willow flycatcher, and coastal California gnatcatcher. Identifies the presence of coastal California gnatcatcher and southwestern willow flycatcher.	https://www.pendleton.marines.mil/Staff-Agencies/Environmental-Security/Natural-Resources/	3/1/2018
Final Integrated Natural Resources Management Plan for Naval Base Ventura County Point Mugu and Special Areas	Final	Yes	The U.S. Navy's management plan for bases in the Ventura County Area, including for Point Mugu in the GAI. Includes goals pertaining to enhancement and restoration of specific wetlands and removal of specific invasive species that use aquatic habitats.	https://www.cniv.navy.mil/regions/cnrsw/om/environmental_support/environmental_core_support.html	12/1/2013
Final Integrated Natural Resources Management Plan Naval Weapons Station Seal Beach, California	Final	Yes	The U.S. Navy's management plan for the base. Includes goals to restore historic acreage and function of freshwater and saline wetland/riparian habitats, along with upland transitional areas.	https://www.cniv.navy.mil/regions/cnrsw/om/environmental_support/environmental_core_support.html	1/17/2014
Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook	Final	Yes	The U.S. Navy's management plan for the base. Identifies presence of coastal California gnatcatcher and southwestern willow flycatcher. Includes goals to benefit coastal California gnatcatcher, southwestern willow flycatcher, and aquatic habitats.	https://www.cniv.navy.mil/regions/cnrsw/om/environmental_support/environmental_core_support.html	5/31/2016
U.S. Bureau of Indian Affairs Land Management Plans	See below	See below	See below	See below	See below
Climate Change Adaptation Plan Pala Band of Mission Indians	Final	No	Climate change adaptation plan for the Pala Band. Includes a goal to have an Integrated Resource Management Plan completed by 2021.	http://ped.palatribe.com/pala-adaptation-plan/	7/1/2019

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USFS Land Management Plans	See below	See below	See below	See below	See below
Angeles National Forest Management Plan	Final	No	Management plan to guide all resource management activities in the national forest. Identifies presence of California red-legged frog and mountain lion. Includes a strategy to control invasive riparian plants such as giant reed and tamarix.	https://www.fs.usda.gov/main/angeles/landmanagement/planning	9/20/2005
Cleveland National Forest Land Management Plan	Final	Yes	Management plan to guide all resource management activities in the national forest. Includes goals to control riparian weed species such as giant reed and tamarix from forest lands.	https://www.fs.usda.gov/main/cleveland/landmanagement/planning	9/1/2005
Comprehensive River Management Plan Sespe Creek	Final	No	USFS' Management plan for Sespe Creek in Los Padres National Forest.	https://www.rivers.gov/documents/plans/sespe-creek-plan.pdf	11/1/2003
Design Criteria for the Southern California National Forests	Final	Yes	Provides an overall strategy for land management in Angeles and San Bernardino National Forests. Includes goals to control tamarix, giant reed, tree of heaven, cape ivy (<i>Delairea odorata</i>) (labeled as German ivy in the document), and English ivy (<i>Hedera helix</i>) in the Angeles National Forest and cape ivy, tamarisk, and pampas grass in the Los Padres National Forest.	https://www.fs.usda.gov/main/sbnf/landmanagement/planning	9/1/2005
Ecological Restoration Implementation Plan	Final	Yes	USFS' internal restoration plan, which includes general strategies focused on increasing collaboration with other organizations, completion of land management plans, and forest-specific goals.	https://www.fs.usda.gov/detail/lassen/landmanagement/?cid=stelprdb5411635	1/1/2013
Los Padres National Forest Management Plan	Final	No	Management plan to guide all resource management activities in the national forest. Identifies presence of California red-legged frog and mountain lion. Includes a strategy to control invasive riparian plants such as giant reed and tamarix.	https://www.fs.usda.gov/detail/lpnf/landmanagement/?cid=fsm9_034066	9/20/2005
San Bernardino National Forest Management Plan	Final	No	Management plan to guide all resource management activities in the national forest. Identifies southwestern willow flycatcher as occurring in the forest.	https://www.fs.usda.gov/main/sbnf/landmanagement/planning	9/1/2005
BLM Land Management Plans	See below	See below	See below	See below	See below
Bakersfield Resource Management Plan	Final	Yes	BLM's management plan for BLM lands in the Bakersfield District.	https://eplanning.blm.gov/epl-front-office/projects/lup/70273/92254/111143/Bakersfield-ROD-ARMP.pdf	12/1/2014
California Coastal National Monument Resource Management Plan	Final	Yes	BLM management plan for California Coastal National Monument.	http://www.npshistory.com/publications/blm/california-coastal/rmp-2005.pdf	9/1/2005
South Coast Resource Management Plan Draft Resource Management Plan and Environmental Impact Statement	Final	Yes	BLM management plan that covers the Palm Springs/South Coast Field Office region. Includes general goals to enhance and restore riparian habitats in the management area. Tamarix is identified as a priority weed for removal. Coastal California gnatcatcher is identified as a key special-status species with a goal to enhance coastal sage scrub habitat.	https://www.blm.gov/programs/planning-and-nepa/plans-in-development/california	8/1/2011
NPS Land Management Plans	See below	See below	See below	See below	See below
Nationwide Rivers Inventory	Final	Yes	Listing of Nationwide River Inventory river segments that are potential candidates for inclusion in the National Wild and Scenic River System. Listed national river segments in the GAI include Piru Creek, Sespe Creek, and Sisquoc River.	https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm	12/21/2017
Santa Monica Mountains National Recreation Area	Final	Yes	NPS' management plan for the Santa Monica Mountains National Recreation Area.	https://www.nps.gov/samo/learn/management/gmp-general-management-plan-documents.htm	7/1/2002

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Local Government Land Management Plans	See below	See below	See below	See below	See below
Habitat Restoration and Enhancement Plan Nature Reserve of Orange County Central Coastal Subregion	Final	Yes	Implemented by the Natural Communities Coalition, with board of director members from FWS, CDFW, California Department of Parks and Recreation, Orange County, and additional local municipalities. The plan identifies habitat restoration priorities that overlap the Orange County Central Coastal Subregion NCCP/HCP, which include aquatic habitats and coastal California gnatcatcher habitat.	https://occonservation.org/about-ncc/	8/1/2003
Los Angeles County Significant Ecological Area Program	Updated periodically	Yes	A permitting program for SEAs in Los Angeles County, of which all but the Santa Catalina Island and Terminal Island SEAs intersect with the GAI.	https://planning.lacounty.gov/site/sea/home/	Updated periodically
Water Resources Plans and Documents	See below	See below	See below	See below	See below
Cuyama Valley Groundwater Basin Groundwater Sustainability Plan	Final	Yes	The Cuyama Basin Groundwater Sustainability Agencies plan for managing groundwater resources in the Cuyama Valley.	https://cuyamabasin.org/resources#final-gsp	12/1/2019
Enhanced Watershed Management Program Plan	Draft	No	Management plan for the Upper San Gabriel River Enhanced Watershed Management Program Group. The plan is designed to increase controls and monitoring capabilities for improving water quality in the watershed.	https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/upper_san_gabriel/USGR_RevisedDraftEWMP_2015_08_31.pdf	8/1/2015
Draft San José Creek Watershed Plan	Draft	No	Santa Barbara County's plan for the San José Creek Watershed, which corresponds to an area of the northeast corner of the San Pedro Creek HUC-12 (180600130202). The document that is publicly available describes conditions of the watershed. Other components of the document appear to be missing from the County's website. California red-legged frog is known to occur in the watershed.	https://countyofsb.org/uploadedFiles/pwd/Content/sbpcw/Water_Quality/watershed/san-jose-draft-watershed-plan-setting-section-2.pdf	1/1/2003
Santa Clara River Enhancement and Management Plan	Final	Yes	Ventura County Watershed Protection District and Los Angeles County Department of Public Works enhancement and management plan for the Santa Clara River. Goals in the plan include river-wide goals to remove nonnative species, restore habitat (including for California red-legged frog), and reach specific efforts.	http://parkway.scrwatershed.org/wkb/scrbiblio/scrmpfinal/attachment_download/SCREMP2005Final.pdf	5/1/2005
Santa Margarita River Watershed Management Area Water Quality Improvement Plan	Updated periodically	Yes	Water quality improvement plan by Riverside and San Diego Counties, the Riverside County Flood Control and Water Conservation District, and the Cities of Murrieta, Temecula, Wildomar, and Menifee.	http://content.rcflood.org/NPDES/SMRWMA.aspx	1/1/2019 (last revised)
Tujunga-Pacoima Watershed Plan	Final	No	The River Project's management plan for the Tujunga-Pacoima Watershed. Includes goals to restore aquatic habitats in the Big Tujunga Creek HUC-10 and a portion of the Upper Los Angeles River HUC-10.	https://www.theriverproject.org/tujungapacoima-watershed-plan	4/1/2008
Upper Santa Ana River Integrated Regional Water Management Plan	Final	Yes	Management plan of the Upper Santa Ana River Watershed Integrated Regional Water Management Region, which is made up of 14 local municipal water districts, for the Upper Santa Ana River Watershed. The plan includes goals to improve water quality and improve 1,200 acres of habitat in the watershed area.	https://www.sbvwd.org/docman-projects/upper-santa-ana-integrated-regional-water-management-plan/3802-usarw-irwmp-2015-ch1-9-final/file	1/1/2015
Upper Santa Clara River Integrated Regional Water Management Plan	Updated periodically	No	Plan by the regional water management group for the management of water resources in the upper portion of the Santa Clara River watershed. Includes goals to improve water quality, manage flooding, and remove giant reed and tamarix.	https://www.dpw.lacounty.gov/wmd/scr/	4/11/2018 (date of draft amendments)
Ventura River Watershed Management Plan	Final	Yes	Ventura Watershed Councils' management plan for the Ventura watershed. A number of agencies helped with this plan, including Ventura County Watershed Protection District, Ventura County, Los Angeles RWQCB, USFS, CDFW, U.S. Bureau of Reclamation, City of Ventura, and City of Ojai. California red-legged frog and mountain lion are known to occur in the plan area. Includes goals to enhance aquatic habitats and restore habitats needed by special-status species known to occur in the plan area.	http://venturawatershed.org/the-watershed-plan	3/1/2015

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Watersheds Coalition of Ventura County Integrated Regional Water Management Plan	Updated periodically	Yes	Watersheds Coalition of Ventura County's management plan for water resources in Ventura County. Includes goals to improve water quality, restore aquatic habitats, and remove invasive species. Priorities include water quality improvement through total maximum daily load implementation and enhancement of Conejo Creek and associated Wildwood Park.	http://wcvc.ventura.org/IRWMP/2019IRWMP.htm	1/1/2019 (last amended)
County General Plans	See below	See below	See below	See below	See below
Kern General Plan	Final (update in progress)	Yes	General plan for Kern County. Includes zoning for resource reserve and resource management.	https://kernplanning.com/planning/planning-documents/general-plans-elements/	9/22/2009
Los Angeles County General Plan 2035	Updated periodically	Yes	General plan for Los Angeles County. Includes land use maps for natural resources in the following categories: conservation, parks and recreation, national forest, BLM, water, mineral resources, and military.	http://planning.lacounty.gov/generalplan/generalplan	10/6/2015
Orange General Plan	Final	Yes	General plan for Orange County. Includes land use designations for open space and open space reserve.	https://www.ocgov.com/gov/pw/cd/planning/generalplan2005.asp	3/10/2015
Riverside General Plan	Final	Yes	General plan for Riverside County. Includes land use maps for open space in the following categories: conservation, conservation habitat, open space recreation, open space rural, mineral resources, and water.	https://planning.rctlma.org/General-Plan-Zoning/General-Plan	7/17/2018
San Bernardino General Plan	Final (update in progress)	Yes	General plan for San Bernardino County. Includes land use maps with resource/land management and open space categories.	http://cms.sbcounty.gov/lus/planning/generalplan.aspx	4/24/2014
San Diego General Plan	Final	Yes	General plan for San Diego County. Includes a land use designation of open space-conservation.	https://www.sandiegocounty.gov/pds/generalplan.html	8/1/2011
Santa Barbara County Comprehensive Plan	Updated periodically	Yes	General plan for Santa Barbara County. Includes a recommendation to have 100-foot buffers from the following streams in the GAI: Mission, San Roque, San Jose, Tajiguas, and Jalama Creeks. Includes land use designations of Open Lands and Mountainous Area.	https://www.countyofsb.org/plndev/policy/comprehensiveplan/comprehensiveplan.sbc	12/1/2016 (last updated)
Ventura County 2040 General Plan	Updated periodically	Yes	General plan for Ventura County. Includes land use designations of Open Space and Open Space ECU (this refers to open space that has already had some level of development, but no further development is permitted). This plan includes a requirement for 100 feet of setback from a wetland habitat, with some exceptions allowed based on site and project-specific conditions.	https://www.vcrma.org/ventura-county-general-plan	9/15/2020
City General Plans	See below	See below	See below	See below	See below
City of Agoura Hills General Plan	Updated periodically	Yes	General plan for Agoura Hills. Includes goals for open space resources. Includes a land use category for open space.	https://www.agourahillscity.org/departments/planning-community-development/general-plan	3/24/2010
Alhambra General Plan	Updated periodically	Yes	General plan for Alhambra. Includes a land use category for open space.	https://www.cityofalhambra.org/resources/general-plan-update	8/12/2019
City of Aliso Viejo General Plan	Final	Yes	General plan for Aliso Viejo. Includes a land use category for open space.	https://avcity.org/300/General-Plan	4/21/2004
City of Anaheim General Plan	Updated periodically	Yes	General plan for Anaheim. Includes a land use category for open space.	http://www.anaheim.net/712/General-Plan	5/25/2004
Antelope Valley Area Plan	Updated periodically	No	Area plan for Antelope Valley that includes the census-designated place of Acton. Includes a land use category of conservation.	http://actontowncouncil.org/av-general-plan/	6/1/2015
City of Arcadia General Plan	Final	Yes	General plan for Arcadia. Includes a land use category for open space.	https://www.arcadiaca.gov/shape/development_services_department/planning_zoning/general_plan.php#outer-446	11/16/2010

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City of Artesia General Plan	Updated periodically	Yes	General plan for Artesia. Includes a land use category for open space.	https://www.cityofartesia.us/258/General-Plan-Update	7/1/2010
City of Azusa General Plan	Updated periodically	Yes	General plan for Azusa. Mountain lions are known to occupy the mountain areas of the city limits. Includes a land use category for open space.	https://www.ci.azusa.ca.us/160/General-Plan	4/1/2004
City of Banning General Plan	Final	Yes	General plan for Banning. Includes a land use category for open space	http://banning.ca.us/468/General-Plan-Amendments	1/31/2006
Beaumont General Plan	Updated periodically	Yes	General plan for Beaumont. Coastal California gnatcatcher has been recorded in a 5-mile radius of the City. Includes a land use category for open space and conservation.	https://www.beaumontca.gov/121/General-Plan	9/21/2020
City of Bell General Plan	Updated periodically	No	General plan for Bell. Includes a land use category for open space; however, it consists of developed parks.	https://www.cityofbell.org/?NavID=43	8/1/1996
City of Beverly Hills General Plan	Final	Yes	General plan for Beverly Hills. Coastal California gnatcatcher has been recorded in the vicinity of the city. Includes a land use category for open space.	http://www.beverlyhills.org/departments/communitydevelopment/longrangeplanning/generalplan/generalplandocument/	4/30/2010
City of Bradbury General Plan 2012–2030	Updated periodically	No	General plan for Bradbury. Includes a land use category for open space.	https://www.cityofbradbury.org/city-services/planning-department/general-plan-2012-2030	2/5/2014
City of Brea General Plan	Final	Yes	General plan for Brea. Includes a land use category for natural open space.	https://www.ci.brea.ca.us/177/Planning	8/19/2003
City of Buelton General Plan 2025	Updated periodically	Yes	General plan for Buelton. Requires development to have a 50-foot setback from Zaca Creek and a 200-foot setback from Santa Ynez River. Includes a land use category for open space.	https://cityofbuelton.com/government/file-view.php?cat=29&title=General%20Plan%20Update	10/17/2017
Buena Park 2035 General Plan	Updated periodically	Yes	General plan for Buena Park. Includes a land use category for open space.	http://www.buenapark.com/city-departments/community-development/planning-division/general-plan/2035-general-plan	12/1/2010
Burbank 2035 General Plan	Updated periodically	Yes	General plan for Burbank. Includes a land use category for open space	https://www.burbankca.gov/departments/community-development/planning/long-range-planning/burbank2035-general-plan	2/19/2013
City of Calabasas 2030 General Plan	Final	Yes	General plan for Calabasas. California red-legged frog and coastal California gnatcatcher have been reported within and in the vicinity of the city. Requires a buffer between natural riparian areas and development. Includes a land use category for open space.	https://www.cityofcalabasas.com/government/community-development/planning-division/calabasas-plans	12/1/2008
City of Calimesa 2014 General Plan	Final	Yes	General plan for Calimesa. Includes a land use category for open space.	http://www.cityofcalimesa.net/planning.htm	8/4/2014
City of Camarillo General Plan	Updated periodically	Yes	General plan for Camarillo. Includes a land use category for natural open space.	https://www.cityofcamarillo.org/departments/community_development/general_plan_test/index.php	4/1/2004
City of Carpinteria General Plan/Local Coastal Land Use Plan & Environmental Impact Report	Updated periodically	Yes	General Plan and LCP for Carpinteria. Requires a minimum 100-foot buffer strip between upland and wetland areas and a 30-foot setback from the edge of the bluff for trails and gathering areas. Includes a land use category for open space/recreation.	https://carpinteriaca.gov/city-hall/community-development/planning/	4/1/2003
City of Carson General Plan	Updated periodically	Yes	General plan for Carson. Includes a land use category for general open space.	https://ci.carson.ca.us/communitydevelopment/generalplan.aspx	1/1/2004
City of Cerritos General Plan	Final	Yes	General plan for Cerritos. Includes a land use category for parks and open space.	http://www.cerritos.us/GOVERNMENT/city_regulations/cerritos_general_plan.php#plan	1/1/2004
City of Chino General Plan 2025	Final	Yes	General plan for Chino. Includes plans for the enhancement of riparian habitats along the Chino and Cucamonga/Mill Creeks and the Cypress and Magnolia Channels. Includes a land use category for recreation/open space.	https://www.cityofchino.org/city_hall/departments/community_development/planning/plans/general	7/1/2010

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City of Chino Hills General Plan	Updated periodically	Yes	General plan for Chino Hills. Coastal California gnatcatcher has been reported in the city limits. Includes a land use category for open space.	https://www.chinohills.org/124/General-Plan	2/24/2015
City of Claremont General Plan	Updated periodically	Yes	General plan for Claremont. Includes a land use category for park and resource conservation and wilderness park.	https://www.ci.claremont.ca.us/living/general-plan-1708	10/13/2009
City of Colton General Plan	Updated periodically	Yes	General plan for Colton. Includes a land use category for open space.	https://www.ci.colton.ca.us/778/Planning-Documents	2/14/2014
City of Commerce 2020 General Plan	Final	Yes	General plan for Commerce. There is no land use designation for conservation or open space.	https://www.ci.commerce.ca.us/city-hall/economic-development-and-planning/planning	1/1/2008
City of Compton General Plan 2030	Updated periodically	Yes	General plan for Compton. Includes a land use category for open space/parks.	http://www.comptontcity.org/depts/cd/docs.asp	1/1/2011
City of Corona 2020–2040 General Plan	Updated periodically	Yes	General plan for Corona. Coastal California gnatcatcher has been reported to occur in the areas adjacent to the city. Includes a land use category for parks and open space recreational.	https://www.coronaca.gov/government/departments-divisions/planning-division/general-plan-update	12/3/2013
City of Costa Mesa 2015–2035 General Plan	Updated periodically	Yes	General plan for Costa Mesa. Includes policies for general biological resource enhancement in city limits.	https://www.costamesaca.gov/city-hall/city-departments/development-services/approved-plans-for-city/2015-2035-general-plan	11/13/2018 (last updated)
Covina General Plan	Final	No	General plan for Covina. Includes a land use designation of open space.	https://covinaca.gov/pc/page/general-plan	4/18/2000
City of Cudahy General Plan	Updated periodically	Yes	General plan for Cudahy. There is no land use designation for conservation or open space.	https://www.cityofcudahy.com/184/Planning	3/1/2018
Culver City General Plan	Updated periodically	No	General plan for Culver City. There is no land use designation for conservation or open space.	https://www.culvercity.org/Services/Building-Development/General-Plan	5/1/1995
City of Cypress General Plan	Final	No	General plan for Cypress. There is no land use designation for conservation or open space.	https://www.cypressca.org/home/showdocument?id=686	10/5/2001
Diamond Bar General Plan 2040	Updated periodically	Yes	General plan for Diamond Bar. Coastal California gnatcatcher has been recorded within the Summit Ridge and Pantera Parks, Steep Canyon, and the hills south of Diamond Ranch High School. Includes a land use category for open space.	https://www.diamondbarca.gov/961/General-Plan-2040	12/17/2019
City of Downey Vision 2025 General Plan	Updated periodically	Yes	General plan for Downey. Includes a land use category of open space.	https://www.downeyca.org/our-city/departments/community-development/planning/general-plan-map	1/25/2005
City of Duarte Comprehensive General Plan	Final	Yes	General plan for Duarte. Includes a land use designation for conservation.	https://www.accessduarte.com/dept/cd/planning/general_plan.htm	8/14/2007
City of Eastvale General Plan	Updated periodically	Yes	General plan for Eastvale. Includes a land use category of open space.	https://www.eastvaleca.gov/government/community-development/planning/general-plan	6/13/2012
City of El Monte General Plan	Updated periodically	Yes	General plan for El Monte. Requires the restoration of native habitat associated with the Emerald Necklace. Includes a land use designation for open space.	https://www.ci.el-monte.ca.us/266/Planning-Documents	6/1/2011
City of El Segundo General Plan	Final	No	General Plan for El Segundo. Includes a land use designation of open space.	https://www.elsegundo.org/government/departments/development-services/planning-division/general-plan	12/1/1992
City of Fillmore General Plan	Updated periodically	Yes	General plan for Fillmore. Includes a goal to restrict development in the floodways of the Santa Clara River, Sespe Creek, and Pole Creek. Includes a land use designation of open space.	https://www.fillmoreca.com/departments/planning-department/document-download-page	1/28/2014 (last updated)

Title	Status	Spatial Data	Reference Purpose	Link	Date
Fontana Forward General Plan Update 2015–2035	Updated periodically	Yes	General plan for Fontana. Includes a land use designation of open space.	https://www.fontana.org/2632/General-Plan-Update-2015---2035	11/13/2018
Fountain Valley General Plan Update	Updated periodically	No	General plan for Fountain Valley. Includes a land use designation of open space.	https://www.fountainvalley.org/413/General-Plan	11/21/2017 (last updated)
The Fullerton Plan 2030	Updated periodically	Yes	General plan for Fullerton. Includes a land use designation of open space and greenbelt concept.	https://www.cityoffullerton.com/gov/departments/dev_serv/general_plan_update/the_fullerton_plan.asp	5/20/2020 (last updated)
Garden Grove General Plan	Final	Yes	General plan for Garden Grove. Includes a land use designation of parks/open space.	https://ggcity.org/planning/general-plan	5/1/2008
City of Gardena General Plan 2006	Final	Yes	General plan for Gardena. There is no land use designation for conservation or open space.	https://www.cityofgardena.org/general-plan/	4/25/2006
City of Glendale General Plan	Final	Yes	General plan for Glendale. Includes a land use designation of recreation/open space.	https://www.glendaleca.gov/government/departments/community-development/planning-division/city-wide-plans	9/27/2005 (last updated)
Glendora Community Plan 2025	Updated periodically	Yes	General plan for Glendora. Includes a land use designation of conservation open space.	https://www.cityofglendora.org/departments-services/planning/applications-documents/general-plan-specific-plans/glendora-general-plan	12/1/2018 (last updated)
City of Goleta General Plan/Coastal Land Use Plan	Updated periodically	Yes	General plan for Goleta. Requires a 100-foot buffer from any streamside protection area and no less than a 50-foot buffer from any wetland area. Impacts on coastal bluff scrub and coastal sage scrub ESHAs shall be minimized by providing at least a 25-foot buffer restored with native species around the perimeter of the ESHA. Includes a land use designation of open space/active recreation and open space/passive recreation.	https://www.cityofgoleta.org/i-want-to/view/general-plan	1/19/2021 (last amended)
City of Hawaiian Gardens	Final	Yes	General plan for Hawaiian Gardens. There is no land use designation for conservation or open space.	https://www.hgcity.org/government/departments/community-development/planning-division/general-plan	1/26/2010
City of Hawthorne General Plan	Updated periodically	Yes	General plan for Hawthorne. Includes a land use designation for open space.	https://www.cityofhawthorne.org/general-plan	3/1/2016 (last amended)
City of Hermosa Beach Integrated General Plan and Coastal Land Use Plan	Updated periodically	No	General plan for Hermosa Beach. Includes a land use designation for open space and recreation.	https://www.hermosabeach.gov/our-government/community-development/plan-hermosa	8/22/2017
City of Highland General Plan	Updated periodically	Yes	General plan for Highland. Includes a land use designation for open space.	https://www.cityofhighland.org/191/General-Plan	3/1/2006 (last updated)
Huntington Beach General Plan	Updated periodically	Yes	General plan for Huntington Beach. Coastal California gnatcatcher are known to occur in Huntington Beach. Includes goals to enhance the Huntington Beach Wetlands and wetland/riparian area in Bartlett Park via the Huntington Beach Channel. Includes a land use designation for open space.	https://www.huntingtonbeachca.gov/government/departments/planning/gp/index.cfm	10/2/2017
City of Huntington Park 2030 General Plan	Updated periodically	No	General plan for Huntington Park. Includes a land use designation for open space.	http://planhp.com/	11/15/2017
City of Industry 2014 General Plan	Updated periodically	Yes	General plan for Industry. Includes a land use designation for recreation and open space.	https://www.cityofindustry.org/city-hall/departments/development-services/planning/codes-and-regulations	6/12/2014
City of Inglewood General Plan	Updated periodically	Yes	General plan for Inglewood. Includes a land use designation for open space.	https://www.cityofinglewood.org/209/General-Plan	5/30/2020 (last updated)

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City of Irvine General Plan	Updated periodically	Yes	General plan for Irvine. Includes a land use designation for open space.	https://www.cityofirvine.org/community-development/current-general-plan	8/9/2015 (last updated)
City of Irwindale General Plan Update	Final	No	General plan for Irwindale. Includes a land use designation for open space.	https://www.irwindaleca.gov/138/Planning	6/1/2008
City of Jurupa Valley 2017 General Plan	Final	Yes	General plan for Jurupa Valley. Coastal California gnatcatcher has been known to inhabit areas within the city. Includes a land use designation for open space.	https://www.jurupavalley.org/339/General-Plan	9/7/2017
City of La Canada Flintridge General Plan 2030	Final	No	General plan for La Canada Flintridge. Includes a land use designation for open space.	https://cityoflcf.org/planning/	2/10/2014 (last updated)
City of La Habra General Plan Update	Final	Yes	General plan for La Habra. Includes a land use designation for open space.	https://www.lahabracity.com/1370/General-Plan-Documents	1/21/2014
City of La Habra Heights General Plan	Final	No	General plan for La Habra Heights. Includes a land use designation for open space.	https://www.lhcity.org/162/Community-Development	3/1/2004
City of La Mirada General Plan	Final	No	General plan for La Mirada. Includes a land use designation for parks and open space.	https://www.cityoflamirada.org/departments/community-development/planning/general-plan	3/25/2003
City of La Palma General Plan	Updated periodically	Yes	General plan for La Palma. Includes a land use designation for open space/recreation.	https://www.cityoflapalma.org/123/General-Plan	6/17/2014
City of La Puente General Plan	Updated periodically	No	General plan for La Puente. Includes a land use designation for open space.	https://www.lapueente.org/government/departments/development-services/planning	5/18/2004
City of La Verne General Plan	Updated periodically	No	General plan for La Verne. Includes a land use designation for open space.	https://laverne.generalplan.org/documents-and-maps	12/7/1998
City of Laguna Hills General Plan	Final	Yes	General plan for Laguna Hills. Coastal California gnatcatcher has been reported to inhabit areas adjacent to the city. Includes policies to enhance habitat areas associated with Aliso Creek and Veeh Reservoir. Includes a land use designation for open space.	https://www.ci.laguna-hills.ca.us/174/Planning-Division	7/14/2009
City of Laguna Niguel General Plan	Final	No	General plan for Laguna Niguel. Includes policies for the enhancement of areas associated with Aliso, Sulphur, and Salt Creeks. Includes a land use designation for open space.	https://www.cityoflagunaniguel.org/132/General-Plan	8/4/1992
City of Laguna Woods General Plan	Updated periodically	Yes	General plan for Laguna Woods. Includes a land use designation for open space.	https://www.cityoflagunawoods.org/government/general-plan/	1/1/2001
City of Lake Elsinore General Plan	Updated periodically	No	General plan for Lake Elsinore. Prevents the development or modification of areas containing riparian habitat of high functions and values or corridors with 80 percent or more of natural native habitat that link larger patches of natural native habitat containing 80 percent or more native plant species. Includes a land use designation for open space.	http://www.lake-elsinore.org/city-hall/city-departments/community-development/planning/lake-elsinore-general-plan	12/13/2011
City of Lake Forest General Plan	Final	Yes	General plan for Lake Forest. Requires a buffer area between natural waterways and urban development. Includes a land use designation for open space.	https://www.lakeforestca.gov/292/Planning-Documents	6/1/2020
City of Lakewood General Plan	Updated periodically	Yes	General plan for Lakewood. Includes a land use designation for open space; however, this consists of developed parks.	https://www.lakewoodcity.org/council/planning.asp	8/13/2013 (last updated)
City of Lancaster General Plan 2030	Final	No	General plan for Lancaster. Requires setback buffers associated with Little Rock Creek. Includes a land use designation for open space.	https://www.cityoflanasterca.org/our-city/departments-services/development-services/planning/general-plan-2030	7/14/2009
City of Lawndale General Plan	Updated periodically	No	General plan for Lawndale. Includes a land use designation for open space.	https://lawndalecity.org/cms/one.aspx?pageld=17108047	8/15/2016 (last updated)
City of Loma Linda General Plan	Final	Yes	General plan for Loma Linda. Includes a land use designation for public open space.	https://www.lomalinda-ca.gov/our_city/general_plan	5/26/2009

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City of Lomita General Plan	Updated periodically	Yes	General plan for Lomita. There is no land use designation for conservation or open space.	http://www.lomita.com/cityhall/government/planning/index.cfm?p=../pzbs/general-plan.cfm	2/1/2014
City of Lompoc 2030 General Plan	Updated periodically	Yes	General plan for Lompoc. Includes a land use designation for open space.	https://www.cityoflompoc.com/government/departments/economic-community-development/planning-division/planning-documents-and-maps/-folder-108	12/17/2019
City of Long Beach General Plan	Updated periodically	Yes	General plan for Long Beach. Promotes the enhancement of the ecological preserves at El Dorado Nature Center and the DeForest Nature Area. Includes a land use designation for open space.	http://www.longbeach.gov/lbds/planning/advance/general-plan/	12/3/2019
City of Los Alamitos General Plan	Updated periodically	No	General plan for Los Alamitos. Includes a land use designation for open area.	https://cityoflosalamitos.org/2035-general-plan/	3/23/2015
City of Los Angeles General Plan	Updated periodically	Yes	General plan for Los Angeles. Includes a land use designation for open space.	https://planning.lacity.org/plans-policies/general-plan-overview	12/3/2013 (last updated)
City of Lynwood General Plan	Final	No	General plan for Lynwood. Includes a land use designation for open space.	http://lynwood.ca.us/development_compliance_enforcement_services/building_safety_planning/	8/1/2003
City of Malibu General Plan	Updated periodically	No	General plan for Malibu. Requires at least a 100-foot setback from the outer edge of existing riparian or oak canopy for leach fields and for seepage pits, where feasible. Includes a land use designation for open space.	https://qcode.us/codes/malibu-general-plan/	11/1/1995
City of Manhattan Beach General Plan	Final	Yes	General plan for Manhattan Beach. Includes a land use designation for parks/open space.	https://www.citymb.info/departments/community-development/planning-zoning/general-plan/final-general-plan	12/2/2003
City of Maywood General Plan	Final	No	General plan for Maywood. There is no land use designation for conservation or open space.	https://www.cityofmaywood.com/general-plan	5/1/2007
City of Mission Viejo General Plan	Final	No	General plan for Mission Viejo. Includes a land use designation for open space.	https://stage.cityofmissionviejo.org/departments/community-development/planning/general-plan	8/19/2013
City of Monrovia General Plan	Updated periodically	No	General plan for Monrovia. Includes a land use designation for Hillside Wilderness Area and Angeles National Forest.	https://www.cityofmonrovia.org/your-government/community-development/planning/general-plan	2/4/2020 (last updated)
City of Montclair General Plan	Updated periodically	No	General plan for Montclair. Includes a land use designation for open space/recreation.	https://www.cityofmontclair.org/city-government/community-development/planning-division/general-plans-specific-plans	12/1/1999
City of Montebello General Plan	Final	No	General plan for Montebello. There is no land use designation for conservation or open space.	https://www.cityofmontebello.com/general-plan.html	5/27/1975
Monterey Park 2040	Updated periodically	Yes	General plan for Monterey Park. Includes a land use designation for open space.	https://www.montereypark.ca.gov/1249/General-Plan-Update---Monterey-Park-2040	6/17/2020 (last updated)
City of Moorpark General Plan	Updated periodically	Yes	General plan for Moorpark. Includes a land use designation for open space.	https://moorparkca.gov/212/General-Plan	10/28/2020 (last updated)
Murrieta General Plan 2035	Final	Yes	General plan for Murrieta. Contains policies for the restoration of Murrieta Creek. Includes a land use designation for parks and open space.	https://www.murrietaca.gov/303/General-Plan-2035	7/19/2011
City of Newport Beach General Plan	Updated periodically	Yes	General Plan for Newport Beach. Coastal California gnatcatcher is listed as occurring within the city. Includes a land use designation for open space and tidelands and submerged lands.	https://www.newportbeachca.gov/government/departments/community-development/planning-division/general-plan-codes-and-regulations/general-plan	9/22/2020 (last updated)

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City of Norco General Plan	Updated periodically	Yes	General plan for Norco. Includes a land use designation for hillside areas and water related.	http://www.norco.ca.us/depts/planning/general.asp	12/17/2014
City of Norwalk General Plan	Final	Yes	General plan for Norwalk. Includes a land use designation for open space.	https://www.norwalk.org/city-hall/departments/community-development/planning	2/29/1996
Ojai General Plan	Final	No	General plan for Ojai. Includes a land use designation for open space.	https://ojaicity.org/ojais-general-plan/	5/13/1987
The Ontario Plan	Updated periodically	Yes	General plan for Ontario. Includes a land use designation for open space.	https://www.ontarioplan.org/vision/	2/13/2007
Orange General Plan	Final		General plan for Orange. Mountain lions and coastal California gnatcatcher are listed as occurring within natural habitats in the city. Contains policies to enhance the natural qualities of Santiago Creek. Includes a land use designation for open space.	https://www.cityoforange.org/391/General-Plan	4/13/2010
City of Oxnard 2030 General Plan Goals & Policies	Updated periodically	No	General plan for Oxnard. Contains policies for the restoration of Ormond Beach wetlands and enhancement of riparian habitat along the Santa Clara River, Edison Canal, and McGrath Lake and its vicinity. Includes a land use designation for open space.	https://www.oxnard.org/city-department/community-development/planning/2030-general-plan/	12/1/2016 (last amended)
City of Palmdale General Plan	Updated periodically	Yes	General plan for Palmdale. Includes a land use designation of open space.	http://www.cityofpalmdale.org/Businesses/Economic-and-Community-Dev/Planning-and-Zoning/General-Plan	1/25/1993
City of Palos Verdes Estates	Final	No	General plan for Palos Verdes Estates. There is no land use designation for conservation or open space.	https://www.pvestates.org/services/planning/general-plan-adopted-1-10-73	1/10/1973
Paramount General Plan	Final	No	General plan for Paramount. Includes a land use designation for the Los Angeles River.	http://www.paramountcity.com/government/community-development-department/planning-division/general-plan	8/7/2007
City of Pasadena General Plan Update	Updated periodically	Yes	General plan for Pasadena. Includes a land use designation for open space.	https://www.cityofpasadena.net/planning/planning-division/community-planning/general-plan/#open-space-conservation	1/1/2012
City of Pico Rivera General Plan	Updated periodically	Yes	General plan for Pico Rivera. Contains policies for the restoration of natural resources and associated habitats along the Rio Hondo and San Gabriel River. Includes a land use designation for park/open space.	https://www.pico-rivera.org/depts/ced/planning/plan.asp	10/1/2014
City of Placentia General Plan Update	Updated periodically	Yes	General plan for Placentia. Includes a land use designation of parks; however, this consists entirely of developed parks.	https://www.placentia.org/166/General-Plan-Update	10/1/2019
City of Pomona 2014 General Plan Update	Final	No	General plan for Pomona. The coastal California gnatcatcher is listed as occurring in or near the city. Includes a land use designation for open space.	http://www.ci.pomona.ca.us/index.php/280-announcements/1310-general-plan	3/1/2014
City of Port Hueneme 2015 General Plan and Local Coastal Program	Final	No	General plan for Port Hueneme. Contains policies for the enhancement of riparian habitat, including those associated with Bubbling Springs Creek. Includes a land use designation for open space.	https://www.ci.port-hueneme.ca.us/DocumentCenter/Index/133	7/2/2001 (last revised)
Rancho Cucamonga General Plan	Updated periodically	Yes	General plan for Rancho Cucamonga. The coastal California gnatcatcher has been reported within the city. Includes a land use designation for open space.	https://www.cityofrc.us/community-development/planning	5/19/2010
City of Rancho Palos Verdes General Plan	Updated periodically	No	General plan for Rancho Palos Verdes. Includes a land use designation for open space preservation.	https://www.rpvca.gov/356/General-Plan-Update	9/18/2020 (last updated)
Rancho Santa Margarita General Plan	Final	Yes	General plan for Rancho Santa Margarita. Includes a land use designation for open space.	https://www.cityofrsm.org/527/General-Plan-2020	2/1/2020

Title	Status	Spatial Data	Reference Purpose	Link	Date
City of Redlands General Plan 2035	Final	Yes	General plan for Redlands. The coastal California gnatcatcher is known to occur along the Santa Ana River. Contains policies for the enhancement of wildlife corridors, especially those associated with the San Bernardino National Forest, Santa Ana River Wash, Crafton Hills, San Timoteo and Live Oak Canyons, the Badlands. Other policies include enhancement of the Mill Creek Zanja and Morey Arroyo. Includes a land use designation for open space, hillside conservation, and resource preservation.	https://www.cityofredlands.org/post/planning-division-general-plan	12/5/2017
City of Redondo Beach General Plan	Final	No	General plan for Redondo Beach. There is no land use designation for conservation or open space.	https://www.redondo.org/depts/community_development/planning/general_plan/default.asp	6/7/2004
Rialto General Plan	Updated periodically	Yes	General plan for Rialto. Includes a land use designation for open space.	https://www.yourrialto.com/city-hall/departments/development-services-department/planning-division/general-plan-update/	12/1/2010
Riverside General Plan 2025	Final	Yes	General plan for Riverside. Mountain lions and coastal California gnatcatcher are listed as present within the city. Contains policies for the enhancement of the Santa Ana River and establishment of wildlife movement corridor between Sycamore Canyon Wilderness Park and the Box Springs Mountain Regional Park. Includes a land use designation for major open space and parks and greenbelt.	https://riversideca.gov/cedd/planning/city-plans/general-plan-0	11/1/2007
City of Rolling Hills General Plan	Final	No	General plan for Rolling Hills. Does not include a land use designation for conservation or open space.	https://www.rolling-hills.org/government/planning_and_community_services/index.php	6/25/1990
City of Rolling Hills Estates General Plan	Updated periodically	No	General plan for Rolling Hills Estates. Contains policies for the general restoration of native wilderness areas in canyons or other public open space areas. Includes a land use designation for open space.	https://www.ci.rolling-hills-estates.ca.us/government/planning/general-plan	1/1/2014 (last updated)
City of Rosemead General Plan Update	Updated periodically	Yes	General Plan for Rosemead. Includes a land use designation for open space.	https://www.cityofrosemead.org/government/city_departments/community_development/planning	2/13/2018 (last amended)
City of San Bernardino General Plan	Final	No	General plan for San Bernardino. Prohibits the development and grading within 50 feet of riparian corridors. Contains policies to establish a permanent corridor to connect the National Forest using Cable Creek and/or Devil Canyon. Promotes the enhancement of natural characteristics of the Santa Ana River, City Creek, and Cajon Creek. Includes a land use designation for open space.	http://www.sbcity.org/cityhall/community_development/planning/default.asp	11/1/2005
City of San Dimas General Plan	Final	No	General plan for San Dimas. Includes a land use designation for open space.	https://sandimasca.gov/general-plan-2/	9/1/1991
City of San Fernando Revised General Plan	Updated periodically	No	General plan for San Fernando. Includes a land use designation for parks; however, the City is largely urban and developed.	https://ci.san-fernando.ca.us/community-development/#planning	1/21/2014 (last updated)
The Comprehensive General Plan of the City of San Gabriel, California 2004	Final	Yes	General plan for San Gabriel. Contains policies restore the San Gabriel River. Includes a land use designation for open space; however, the city is largely developed.	https://www.sangabrielcity.com/169/Land-Use-Zoning-Information	5/18/2004
City of San Marino General Plan	Final	No	General plan for San Marino. Includes a land use designation for parks and recreation.	https://www.cityofsanmarino.org/government/departments/planning_building/index.php	10/8/2003
City of Santa Ana General Plan	Updated periodically	No	General plan for Santa Ana Includes a land use designation for open space.	https://www.santa-ana.org/general-plan/current-general-plan	2/11/2009
Santa Barbara General Plan	Final	Yes	General plan for Santa Barbara. Contains policies for the restoration and enhancement of estuaries of Mission and Sycamore Creeks and the Laguna Channel and Goleta Slough. Establishes a goal to restore 5 acres of coastal bluff habitat over the life of the general plan. New development would require at least a 25-foot setback from creeks. Includes a land use designation for open space, including creeks, shoreline, and Goleta Slough Natural Reserve.	https://www.santabarbaraca.gov/services/planning/plan.asp	12/1/2011

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City of Santa Clarita General Plan	Updated periodically	Yes	General plan for Santa Clarita. Includes a land use designation of open space. The plan recommends no new development within 100 feet of a wetland and within 50 feet of a water body such as a lake or stream.	https://www.santa-clarita.com/city-hall/departments/community-development/planning	6/1/2011 (last updated)
Santa Fe Springs 2040 General Plan	Update in progress	Yes	General plan for Santa Fe Springs. Includes a land use designation of open space; however, this consists entirely of developed parks.	https://www.reimaginesantafesprings.org/documents	10/1/2020
City of Santa Monica General Plan	Updated periodically	Yes	General plan for Santa Monica. Includes a land use designation of open space; however, this consists entirely of developed parks.	https://www.smgov.net/Departments/PCD/Plans/General-Plan/	7/25/2017 (last updated)
City of Santa Paula 2040 General Plan	Final	Yes	General plan for Santa Paula. Includes a land use designation of open space: passive. Recommends development buffers of 100 feet for sensitive native habitats, including coastal California gnatcatcher habitat, wetlands, and riparian areas. Includes a goal to enhance and restore the Santa Clara River in coordination with the Santa Clara River Enhancement and Management Plan.	https://www.mysantapaula.com/documents.html#	3/4/2020
City of Seal Beach General Plan	Final	Yes	General plan for Seal Beach. Includes a land use designation of open space.	https://www.sealbeachca.gov/Departments/Community-Development/Planning-Development/General-Plan	12/1/2003
City of Sierra Madre General Plan	Final	Yes	General plan for Sierra Madre. Includes a land use designation of natural open space and constructed open space, which are developed parks.	https://www.cityofsierramadre.com/cityhall/strategic-planning/general_plan	7/14/2015
City of Signal Hill General Plan	Updated periodically	Yes	General plan for Signal Hill. Includes a land use designation of open space; however, this consists entirely of developed parks.	https://www.cityofsignalhill.org/85/General-Plan	1/24/2012 (last updated)
City of Simi Valley General Plan	Final	Yes	General plan for Simi Valley. Includes a land use designation of open space. Includes a goal to enhance Arroyo Simi. Requires wetland and sensitive habitat mitigation to be at a 5:1 ratio if being conducted off site.	https://www.simivalley.org/departments/environmental-services/planning-division/documents-applications-and-development-activity/general-plan	6/1/2012
City of Solvang General Plan	Update in progress	Yes	General plan for Solvang. Includes a land use designation of open space. Includes a goal to enhance the portion of the Santa Ynez River that flows through the city.	https://cityofsolvang.com/DocumentCenter/Index/21	5/23/2016 (last updated)
City of South El Monte General Plan	Final	No	General plan for South El Monte. Because the city limits are entirely developed, there is no land use designation for open space.	https://www.cityofsouthelmonte.org/186/General-Plan	10/1/2000
South Gate General Plan 2035	Final	Yes	General plan for South Gate. Because the city limits are entirely developed, there is no land use designation for open space.	http://www.cityofsouthgate.org/192/General-Plan	12/1/2009
South Pasadena General Plan	Draft	Yes	General plan for South Pasadena. Includes a land use designation of open space.	https://www.southpasadenaca.gov/government/departments/planning-and-building/general-plan/proposed-2019-general-plan-downtown-specific-plan-update	11/4/2019
City of Stanton General Plan	Final	Yes	General plan for Stanton. Includes a land use designation of open space; however, this consists of developed parks, transmission line rights-of-way, and a channelized portion of the Santa Ana River.	http://ci.stanton.ca.us/Departments/Community-Economic-Development/Planning-Division	9/23/2008
Temecula General Plan	Periodically updated	Yes	General plan for Temecula. Includes a land use designation of open space. Includes goals to enhance Temecula Creek, Murrieta Creek, Santa Margarita River, and other waterways in city limits.	https://temeculaca.gov/345/General-Plan	12/1/2013 (last updated)
City of Temple City General Plan	Final	Yes	General plan for Temple City. Because the city limits are entirely developed, there is no land use designation for open space.	https://www.ci.temple-city.ca.us/1175/Reference-Library	1/7/2014

Title	Status	Spatial Data	Reference Purpose	Link	Date
City of Thousand Oaks General Plan	Periodically updated	Yes	General plan for Thousand Oaks. Includes land use designations of open space and undevelopable land. Includes a goal to contribute to the regional effort to enhance Calleguas Creek, Malibu Creek, and Mugu Lagoon, as well as reduce erosion into Arroyo Conejo and Calleguas Creek.	https://www.toaks.org/departments/community-development/planning/general-plan	4/11/2017 (last updated)
Torrance General Plan	Final	Yes	General plan for Torrance. Includes a land use designation of public/quasi-public/open space; however, this consists of developed parks.	https://www.torranceca.gov/our-city/community-development/general-plan	4/6/2010
Tustin General Plan	Periodically updated	Yes	General plan for Tustin. Because the city limits are entirely developed, there is no land use designation for open space.	https://www.tustinca.org/396/General-Plan	11/1/2018 (last updated)
City of Upland General Plan	Final	Yes	General plan for Upland. Includes a land use designation of park/open space.	https://www.uplandca.gov/general-plan-map	9/1/2015
2005 Ventura General Plan	Update in progress	Yes	General plan for Ventura. Includes a land use designation of parks & open space. Includes a goal to restore Alessandro Lagoon.	https://www.cityofventura.ca.gov/485/General-Plan	8/8/2005
City of Vernon General Plan	Periodically updated	Yes	General plan for Vernon. Because the city limits are entirely developed, there is no land use designation for open space.	http://www.cityofvernon.org/departments/public-works/planning-division/137-general-plan	2/5/2013 (last amended)
City of Villa Park General Plan	Final	Yes	General plan for Villa Park. Includes a land use designation of open space.	http://villapark.org/Departments/Planning/General-Plan?folderId=181&view=gridview&pageSize=10	10/26/2010
City of Walnut General Plan	Final	Yes	General plan for Walnut. Includes a land use designation of open space under a public and easement category. Includes goals to enhance coastal California gnatcatcher habitat and riparian areas in the city limits, and to improve infrastructure to remove contaminants before they enter San José Creek.	https://www.cityofwalnut.org/for-residents/departments/community-development/planning-division/walnut-general-plan-and-zoning	5/9/2018
West Covina General Plan	Final	Yes	General plan for West Covina. Includes a land use designation of parks and open space.	https://www.westcovina.org/departments/community-development/planning-division/general-plan	12/20/2016
West Hollywood General Plan 2035	Final	Yes	General plan for West Hollywood. Because the city limits are entirely developed, there is no land use designation for open space.	https://www.weho.org/city-government/city-departments/planning-and-development-services/general-plan-2035	9/19/2011
City of Westlake Village General Plan	Final	Yes	General plan for Westlake Village. Includes a land use designation of open space. Coastal California gnatcatcher is known to occur in the city limits. The plan includes a general goal to enhance all open space in city limits.	http://www.wlv.org/219/General-Plan	1/9/2019
General Plan, City of Westminster, California	Periodically updated	Yes	General plan for Westminster. Includes a land use designation of park/open space; however, these are all developed parks.	https://www.westminster-ca.gov/departments/community-development/planning-division/general-plan	9/28/2016 (last updated)
Whittier General Plan	Final	Yes	General plan for Whittier. Includes a land use designation of open space.	https://www.cityofwhittier.org/government/community-development/economic-development/planning-documents/general-plan	8/3/1993
Wildomar General Plan Land Use Map	Periodically updated	Yes	Wildomar defers to Riverside County for general planning. Includes a land use designation of conservation habitat.	https://www.cityofwildomar.org/government/departments/planning	2/12/2021 (last updated)
2016 Yorba Linda General Plan	Final	Yes	General plan for Yorba Linda. Includes a land use designation for open space, under general open space and water/lake. Coastal California gnatcatchers are known to occur in city limits.	https://www.yorbalindaca.gov/337/General-Plan	10/1/2016
Yucaipa General Plan	Final	Yes	General plan for Yucaipa. Includes land use designations for floodway and open space. Includes a goal to restore the creeks that occur in city limits.	http://yucaipa.org/development/general-plan/	4/1/2016

Title	Status	Spatial Data	Reference Purpose	Link	Date
Other Conservation and Management Documents	See below	See below	See below	See below	See below
California Coastkeeper Alliance – Ocean Climate Resiliency Action Plan	Final	No	California coastkeeper's plan addressing climate change and rising sea levels. Plan includes preventing ocean wastewater discharges from causing ocean acidification and hypoxia hotspots, preventing agricultural nutrient inputs from causing harmful algal blooms and exacerbating ocean acidification and hypoxia hot spots, improving water quality in Marine Protected Areas, sequestering greenhouse gas emissions, and preventing coastal development in zones at risk from sea-level rise.	https://cacoastkeeper.org/wp-content/uploads/2019/11/CCKA_Ocean-Climate-Resiliency-Campaign_FINAL.pdf	11/19/2019
California EcoAtlas	Updated periodically (nearly daily)	Yes	Statewide database tracking the extent and condition of wetlands in California, managed by the San Francisco Estuary Institute.	https://www.ecoatlas.org/	10/9/2020
Coastal Conservancy Strategic Plan 2018–2022	Final	No	Implemented by the Coastal Conservancy. Includes a discussion of issues and conservancy-funded efforts in the GAI, including wetland and riparian habitat restoration.	https://scc.ca.gov/about/plan/	11/30/2017
Conserving California's Coastal Habitats – A Legacy and A Future with Sea Level Rise	Final	Yes	Statewide coastal conservation plan by the Coastal Conservancy and The Nature Conservancy. Contains plans to maintain and manage coastal lands to be resilient to sea-level rise. Plans include maintaining existing resilient conservation lands, conserving resilient landscapes, managing in place for resilience, conserving potential future habitat areas, and increasing adaptive capacity.	https://www.conservationgateway.org/ConservationPractices/Marine/crr/library/Documents/TNC_SCC_CoastalAssessment_lo%20sngl.pdf	2018
Demonstrating the California Wetland Status and Trends Program: A Probabilistic Approach for Estimating Statewide Aquatic Resource Extent, Distribution and Change over Time	Final	No	A report from the Southern California Coastal Water Research Project describing a pilot study in tracking wetland conditions statewide.	https://www.sccwrp.org/publications/	4/1/2015
Reconnecting the San Gabriel Valley: A Planning Approach for the Creation of Interconnected Urban Wildlife Corridor Networks	Final	No	A planning document from California State Polytechnic University, Pomona, for creating networks for increased wildlife movement corridors in urban areas.	https://www.sgmrc.org/reconnecting.html	6/1/2000
Santa Barbara County Conservation Blueprint	Updated periodically	Yes	Created by a partnership of Cachuma Resource Conservation District, Santa Barbara Foundation, and The Land Trust for Santa Barbara County, this blueprint is an assessment of current conditions in Santa Barbara County centered on water resources, flora and fauna, agriculture and ranchlands, and community and the land. The blueprint functions as an online atlas to review information about the county geographically.	http://sbcblueprint.net/	Mapping database updated nearly daily
U.S. Pacific Coastal Wetland Resilience and Vulnerability to Sea-Level Rise	Final	No	An original research article describing and comparing climate models and scenarios with respect to coastal wetland resilience and sea-level rise.	https://advances.sciencemag.org/content/4/2/eaao3270	2/21/2018
Wetlands on the Edge. The Future of Southern California's Wetlands	Final	Yes	Regional strategy document from the Southern California Wetland Recovery Project. Includes goals to restore 7,700 acres of tidal wetlands, expand upland buffers to at least 40 percent of existing wetland perimeters and up to 1,600 feet from the wetland edge, restore 50,000 acres of non-tidal wetlands, and restore or maintain 189,400 acres of streams and associated adjacent habitats.	https://scwrp.databasin.org/pages/regional-strategy-report	2018

Note: N/A = not applicable

^a Consistent with the Caltrans SAMNA and Chapter 4, for the purposes of this document, special-status species are defined as federally and State of California threatened, endangered, or sensitive species; State fully protected or rare species; State species of special concern; or California Rare Plant Rank 1 and 2 species.

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4. EXISTING MITIGATION OPPORTUNITIES

SHC § 800.6(a)-authorized advance mitigation project types include purchasing credits and paying fees associated with existing mitigation sources. This chapter summarizes the mitigation credits and values currently available to Caltrans and/or pending through existing HCPs, NCCPs, mitigation and conservation banks, in-lieu fee programs, and mitigation credit agreements (“MCAs”). RCISs, which are a prerequisite to MCAs, are also discussed. The chapter begins by describing the advance mitigation credits already held by Caltrans within the GAI.

4.1 SHOPP Advance Mitigation Credits

The 2016 SHOPP, with California Transportation Commission approval, released the first funds used to program Caltrans advance mitigation projects in several Districts. The projects were programmed against the \$40 million reserve created in the 2016 SHOPP for advance mitigation project delivery. Thirteen pilot advance mitigation projects were programmed in the SHOPP and their delivery is underway. One such project in District 5 has a service area that overlaps the GAI and may inform Caltrans District 7’s mitigation planning:

- EA 05-1H970: Bulk Credit Purchases

Undertaken by Caltrans District 5, this advance mitigation project consisted of purchasing bulk California tiger salamander habitat credits from existing banks. One of the banks was La Purisima Conservation Bank, from which Caltrans District 5 purchased 58 California tiger salamander upland habitat credits on May 29, 2018. La Purisima Conservation Bank’s California tiger salamander service area is in Santa Barbara County and overlaps a portion of the GAI.

With natural resource regulatory agency approval, SHOPP transportation projects have begun to use these bulk credits to satisfy transportation project permit conditions; however, not all have been applied to a transportation project yet, and some are still available. Table 4-1 lists the bank and pertinent information.

Table 4-1. SHOPP Advance Mitigation Credits

Bank Where Credits Were Purchased	Credit Purchase Year	Signatories ^a	Service Area	Credit Type and Quantity
La Purisima Conservation Bank	2018	CDFW, FWS	Santa Barbara County	58 upland California tiger salamander credits

^a Signatories in **bold** are signatories to the *Master Process Agreement for Planning and Developing Advance Mitigation Throughout California for the California Department of Transportation* (Caltrans et al. 2020).

4.2 HCPs and NCCPs

HCPs¹ and NCCPs² define covered activities that consist of specific projects and actions that may have adverse effects on covered species and natural communities. The adverse effects associated with the covered activities are estimated, and incidental take permits are issued by FWS and/or CDFW. Once the HCP/NCCP is adopted and the incidental take permit(s) are issued, signatories and participating special entities, where applicable, can request take authorization for project-related effects on covered species. Participation in an adopted HCP/NCCP streamlines permit processes by eliminating the need to obtain project-specific incidental take permits from FWS and/or CDFW and provides early documentation of compliance with the CESA and ESA.

When Caltrans is not an NCCP permittee, under specific conditions and with signatory agency approval, Caltrans may be able to qualify as a Participating Special Entity under the plan, gaining some of the NCCP permittee's privileges; however, not all NCCPs have a Participating Special Entity clause.

Caltrans identified the following active and/or pending HCPs and NCCPs in the GAI that apply to transportation-related activities and that Caltrans may be able to use to meet its compensatory mitigation needs in the GAI:

- Coachella Valley Multiple Species HCP/NCCP
- County of Orange Central/Coastal Subregion NCCP/HCP
- Orange County Transportation Authority NCCP/HCP
- Western Riverside County Multiple Species NCCP/HCP

Figure 4-1 depicts the locations of the above-listed HCPs and NCCPs. Table 4-2 summarizes the signatories, status or date of the plan, plan area, participating transportation agency, covered species, and covered natural communities. Multiple project-specific HCPs in the GAI were not included in Table 4-2 because they were determined to not be a viable mitigation option for Caltrans. For example, they applied to a non-Caltrans single user, or covered activities were not road infrastructure-related and could not be adapted to road infrastructure. In addition, when Caltrans and/or RTPAs are not signatories or participating special entities in any of the HCPs or NCCPs listed in Table 4-2, their participation and coverage under any HCP or NCCP is at the discretion of the implementing entity/plan manager.

¹ Pursuant to Section 10 of the federal ESA or consultations under Section 7 of the federal ESA

² Pursuant to Section 2835 of the California FGC

Table 4-2. Overview of HCPs and NCCPs in the GAI^{a,b}

Name	Signatories ^c	Date	Area (acres)	Participating Transportation Agencies	Covered Species	Covered Natural Communities
Coachella Valley Multiple Species HCP/NCCP	FWS, CDFW	2008	1.1 million	Caltrans	Coastal California gnatcatcher (<i>Poliophtila californica californica</i>), southwestern willow flycatcher (<i>Empidonax traillii extimus</i>), plus 20 other wildlife and 5 plant species	27 natural communities included in plan
County of Orange Central/Coastal Subregion NCCP/HCP	FWS, CDFW	1996	208,000	Transportation Corridor Agencies	Coastal California gnatcatcher, southwestern willow flycatcher, plus 28 other wildlife and 15 plant species	Coastal sage scrub
Orange County Transportation Authority NCCP/HCP	FWS, CDFW	2018	511,476	Orange County Transportation Agency, Caltrans	Coastal California gnatcatcher, southwestern willow flycatcher, mountain lion (<i>Puma concolor</i>), plus 8 other wildlife species and 3 plants	Not applicable
Western Riverside County Multiple Species NCCP/HCP	FWS, CDFW	2004	1.26 million	Riverside County Transportation Commission, Caltrans	California red-legged frog (<i>Rana draytonii</i>), coastal California gnatcatcher, southwestern willow flycatcher, mountain lion, and 143 other plant and wildlife species	Not applicable

^a Up-to-date information on HCPs and NCCPs can be found at the following websites:
<https://ecos.fws.gov/ecp/report/conservation-plans-region-summary?region=8&type=HCP>
<https://wildlife.ca.gov/conservation/planning/nccp>

^b This table lists HCPs and NCCPs that may be applied to Caltrans' mitigation needs.

^c Signatories in **bold** are signatories to the *Master Process Agreement for Planning and Developing Advance Mitigation Throughout California for the California Department of Transportation* (Caltrans et al. 2020).

Figure 4-1. HCPs and NCCPs



4.3 Conservation and Mitigation Banks

A conservation or mitigation bank is privately or publicly owned land upon which natural resources are restored, established, enhanced, and/or preserved. In exchange for permanently protecting, managing, and monitoring the land, the bank sponsor is allowed to sell or transfer habitat, species, and/or aquatic resource credits to permittees who—after all appropriate and practicable avoidance and minimization has been performed—need to satisfy legal requirements and compensate for their project’s unavoidable natural resource impacts. Conservation banks generally protect threatened and endangered species habitat, while mitigation banks generally protect, restore, create, and/or enhance aquatic resources. The legal document for the establishment, operation, and use of a conservation bank or mitigation bank is a Bank Enabling Instrument (“BEI”).

Caltrans identified 24 active or pending conservation and/or mitigation banks with service areas that overlap all or part of the GAI and may provide an opportunity for Caltrans to purchase credits. Information on the agency approvals, the types of credits available, brief descriptions of each bank, and which Caltrans Districts each bank serves are provided in Table 4-3. Several of these conservation and mitigation banks do not provide credits for the species of mitigation need identified in this RAMNA; however, credits for other listed species or habitats are available, as listed in Table 4-3. Single-user non-Caltrans conservation and mitigation banks are excluded from Table 4-3; they do not provide an opportunity for Caltrans to purchase mitigation credits.

Bank locations within the GAI are shown in Figures 4-2 and 4-3. For banks with service areas that are publicly available and fall within the boundaries of Caltrans District 7, the location and extent are depicted on Figures 4-4 through 4-8. The service areas of conservation and mitigation banks that fall outside of District 7’s boundary but are within the greater GAI are shown in Appendix J. Banks in the GAI that do not have a service area that is publicly available are noted in Table 4-3 and are not depicted on Figures 4-4 through 4-8 or in Appendix J.

Table 4-3. Overview of Conservation and Mitigation Banks in the GAI^a

Caltrans District	Name	Year Approved	Current Status	Signatories ^b	Area (acres)	Credit Types
7	Big Tujunga Conservation Bank	Pending	Pending	FWS, CDFW	33.70	Southern California ESU of mountain lion, Santa Ana sucker, 1600/LSA/SAA credits
7, 5	Santa Paula Creek Mitigation Bank	2011	Active – credits available	CDFW, Corps, EPA	200.00	Wetlands, coastal sage scrub, floodplain scrub, chaparral, riparian woodland, upland woodland. Preservation only.
7, 5, 6, 8, 9	Petersen Ranch Mitigation Bank	2016	Active – credits available	CDFW, Corps, EPA, RWQCB	496.00	Alluvial floodplain, ephemeral stream, wetland riparian, non-wetland riparian, freshwater marsh, open water, seasonal wetland, chaparral, Great Basin scrub, Valley and Foothill grassland, Swainson's hawk
7, 8, 11, 12	Soquel Canyon Mitigation Bank	2014	Active – credits available	CDFW, Corps, RWQCB	313.00	Ephemeral, intermittent and permanent stream/riparian, coastal sage scrub, chaparral, native grassland, walnut woodland, oak woodland, mulefat scrub
7, (8, 11, 12 in western pond turtle service area only)	Santa Clara River Mitigation Bank	Pending	Pending	FWS, CDFW, RWQCB, and Corps are anticipated	569.61	Proposed wetland credits for aquatic habitat reestablishment, establishment, rehabilitation, enhancement, and preservation Proposed species credits for least Bell's vireo, southwestern willow flycatcher, yellow-billed cuckoo, Santa Ana sucker, unarmored threespine stickleback, and western pond turtle
7, 8, 12	Watersedge Mitigation Bank	Pending	Pending	Corps is anticipated	76.00	Proposed credits include wetland, non-wetland riparian, and non-wetland upland buffer
7, 12	Colorado Lagoon Mitigation Bank	Pending	Pending	Corps, CCC	35.32	Rehabilitated subtidal/intertidal with eelgrass habitat, established and reestablished subtidal/intertidal habitat, rehabilitated subtidal/intertidal habitat without eelgrass, established and reestablished supratidal habitat, rehabilitated supratidal habitat

Caltrans District	Name	Year Approved	Current Status	Signatories ^b	Area (acres)	Credit Types
7, 12	Upper Los Cerritos Mitigation Bank	Pending	Pending	FWS, Corps, and CCC are anticipated	77.30	Proposed credits include established native scrub, reestablished tidal salt marsh and transitional wetland, rehabilitated tidal salt marsh, enhanced tidal salt marsh and transitional wetland, and enhanced native scrub
5	La Purisima Conservation Bank	2014	Active – credits available	FWS, CDFW	715.00	California tiger salamander, western spadefoot
8	Barry Jones – Skunk Hollow Vernal Pool Mitigation Bank	1998	Active – credits available	FWS, CDFW, Corps	140.00	Vernal pools
8	Cajon Creek Conservation Bank	1996	Active – credits available	FWS, CDFW	635.00	Coastal California gnatcatcher and 23 other threatened and endangered species and their associated habitats, including Riversidian alluvial fan sage scrub, San Bernardino kangaroo rat, Santa Ana woolly star, slender-horned spineflower
8	Lytle Creek Conservation Bank	2014	Active – credits available	FWS (CDFW approval in process)	199.00	San Bernardino kangaroo rat and Santa Ana woollystar; waters of the State anticipated
8	Riverpark Mitigation Bank	2020	Active – credits available	CDFW, Corps, RWQCB	187.33	Wetland reestablishment and wetland rehabilitation
8, 11	Brook Forest Conservation/ Mitigation Bank	2016	Active – credits available	CDFW, Corps	224.00	Diegan coastal sage scrub, open Engelmann oak woodland, Engelmann oak, mafic southern mixed chaparral, native grassland, southern coast live oak riparian, nonnative grassland, wetland waters of the State (enhancement and reestablishment), wetland waters of both the state and the U.S. (rehabilitation and reestablishment)

Caltrans District	Name	Year Approved	Current Status	Signatories ^b	Area (acres)	Credit Types
8, 11, 12	San Luis Rey Mitigation Bank	2014	Active – credits available	Corps, CDFW	56.50	Wetlands and non-wetland waters of the U.S./state, state jurisdictional/non-waters, and grassland buffer; credits for Least Bell's vireo pending
11	Buena Creek Gnatcatcher Conservation Bank	2012	Active – credits available	FWS	121.49	Coastal sage scrub, coastal California gnatcatcher
11	Carlsbad Highlands Conservation Bank	1995	Closed	CDFW	180.00	Coastal sage scrub
11	Cleveland Corridor Conservation Bank	2020	Active credits available	CDFW	600.00	Tier I – Coast live oak woodland, southern coast riparian forest, open Engelmann oak woodland, dense Engelmann oak woodland, sycamore oak riparian woodland, sycamore alluvial woodland Tier II – Diegan coastal scrub, coastal sage-chaparral transition Tier III – nonnative grassland, chamise chaparral, ceanothus chaparral
11	Crestridge Conservation Bank	1995	Active – credits available	FWS, CDFW	2,377.00	Tier I – Native grassland, oak woodland, and wetlands (including vernal pools, alkali marsh, freshwater marsh, riparian forests, riparian woodlands, and maritime succulent scrub) Tier III – Chaparral (except for southern maritime chaparral and mafic chamise and mafic southern mixed chaparral), nonnative grassland, and other grassland

Caltrans District	Name	Year Approved	Current Status	Signatories ^b	Area (acres)	Credit Types
11	Heights of Pala Mesa Conservation Bank	2000	Active – credits available	CDFW	321.30	Diegan coastal sage scrub, mafic coastal sage scrub, mafic northern chaparral, coastal sage-chaparral within San Diego Multiple Habitat Conservation Program and Multiple Species Conservation Program areas
11	Manchester Avenue Conservation Bank	2014	Active – credits available	FWS, CDFW	123.00	Coastal sage scrub, southern maritime chaparral within the San Diego Multiple Habitat Conservation Program and Multiple Species Conservation Program areas
11	Rancho San Diego	1996	Active – credits available	Corps	392.00	Coastal California gnatcatcher pairs, coastal sage scrub, Least Bell's vireo pairs, marsh riparian floodplain, native (perennial) grassland, oak woodland, riparian woodland, southern mixed chaparral
11	Red Mountain Conservation Bank	2011	Active – credits available	FWS	557.36	Coastal California gnatcatcher, Diegan coastal sage scrub (gnatcatcher-occupied), open coast live oak woodland, mafic southern mixed chaparral and mafic chamise, chaparral, native grassland, southern coast live oak riparian forest, riparian scrub, emergent wetland, coastal/valley freshwater marsh
11	San Vicente Conservation Bank	1996	Inactive	FWS, CDFW	320.00	Tier III – chaparral, nonnative grassland (coastal sage scrub is sold out)

^a Up-to-date information on approved conservation and mitigation banks, including available credits, can be found at the following websites:

<https://www.wildlife.ca.gov/Conservation/Planning/Banking/Approved-Banks>

<https://ribits.ops.usace.army.mil/ords/f?p=107:2:.....>

<https://www.fws.gov/ventura/endangered/habitatconservation/conservationbanks.html>

^b Signatories in **bold** are signatories to the *Master Process Agreement for Planning and Developing Advance Mitigation Throughout California for the California Department of Transportation* (Caltrans et al. 2020).

Figure 4-2. Conservation and Mitigation Bank Locations – Part 1



Figure 4-3. Conservation and Mitigation Bank Locations – Part 2

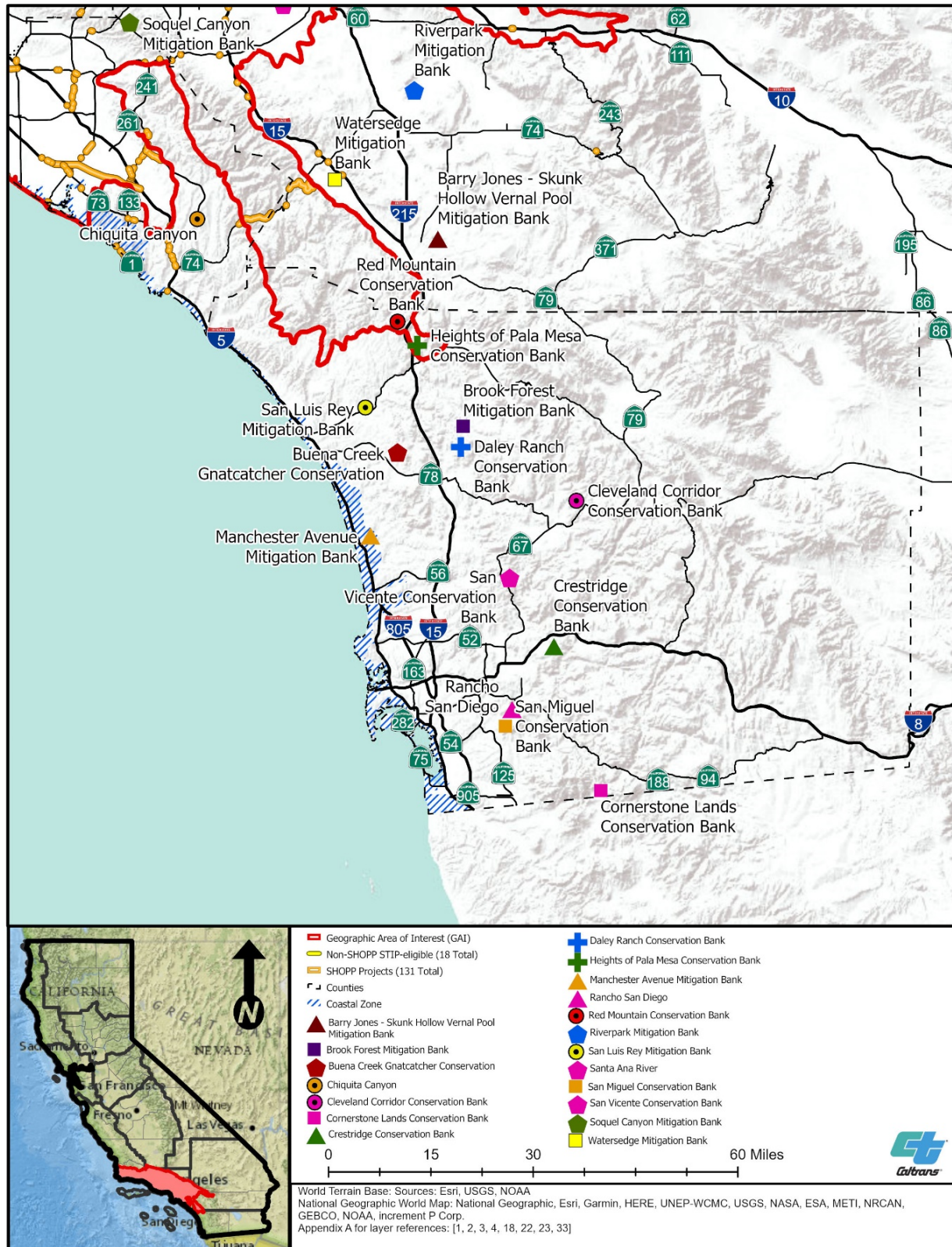


Figure 4-4. Conservation and Mitigation Bank Service Areas within District 7 – Part 1

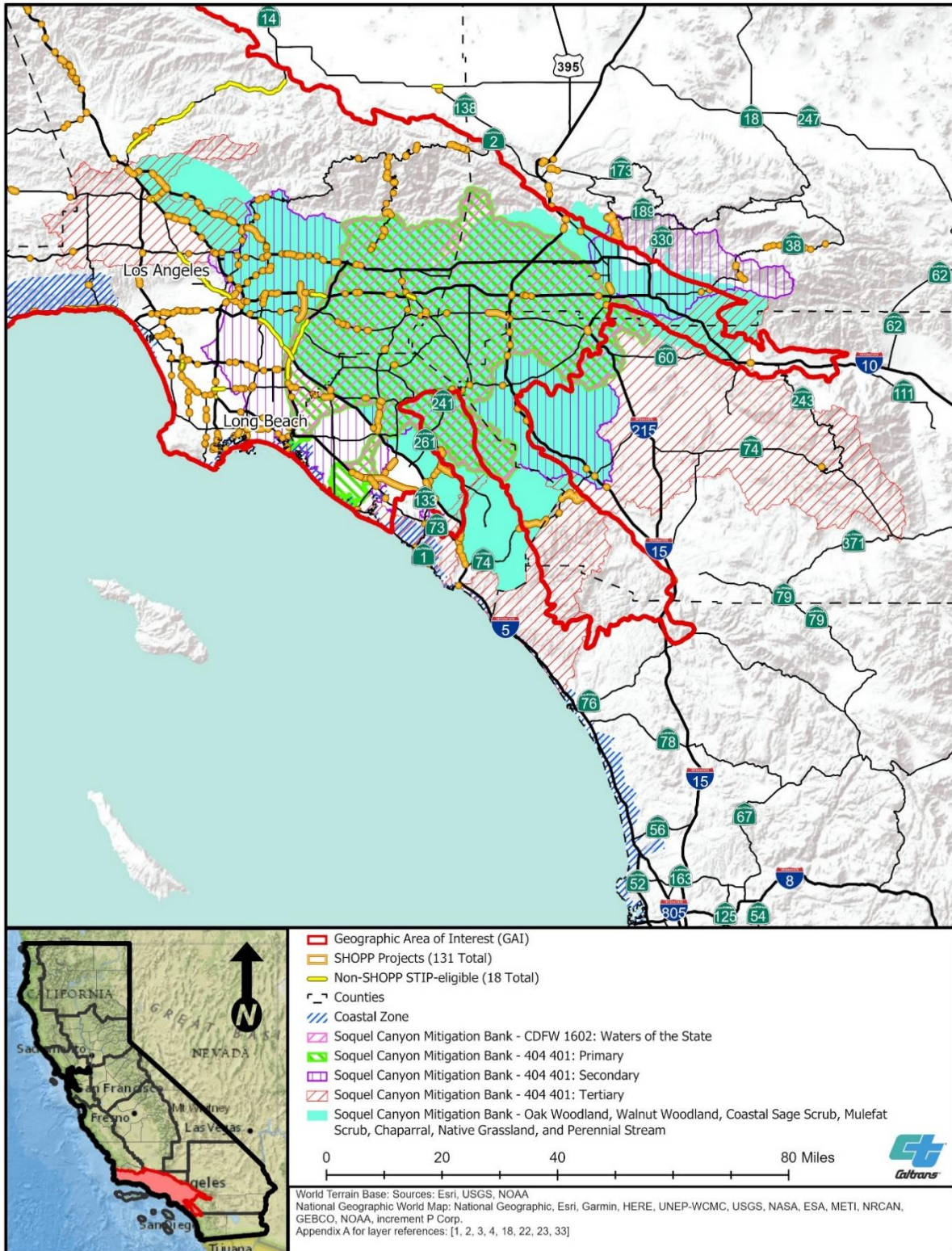


Figure 4-5. Conservation and Mitigation Bank Service Areas within District 7 – Part 2

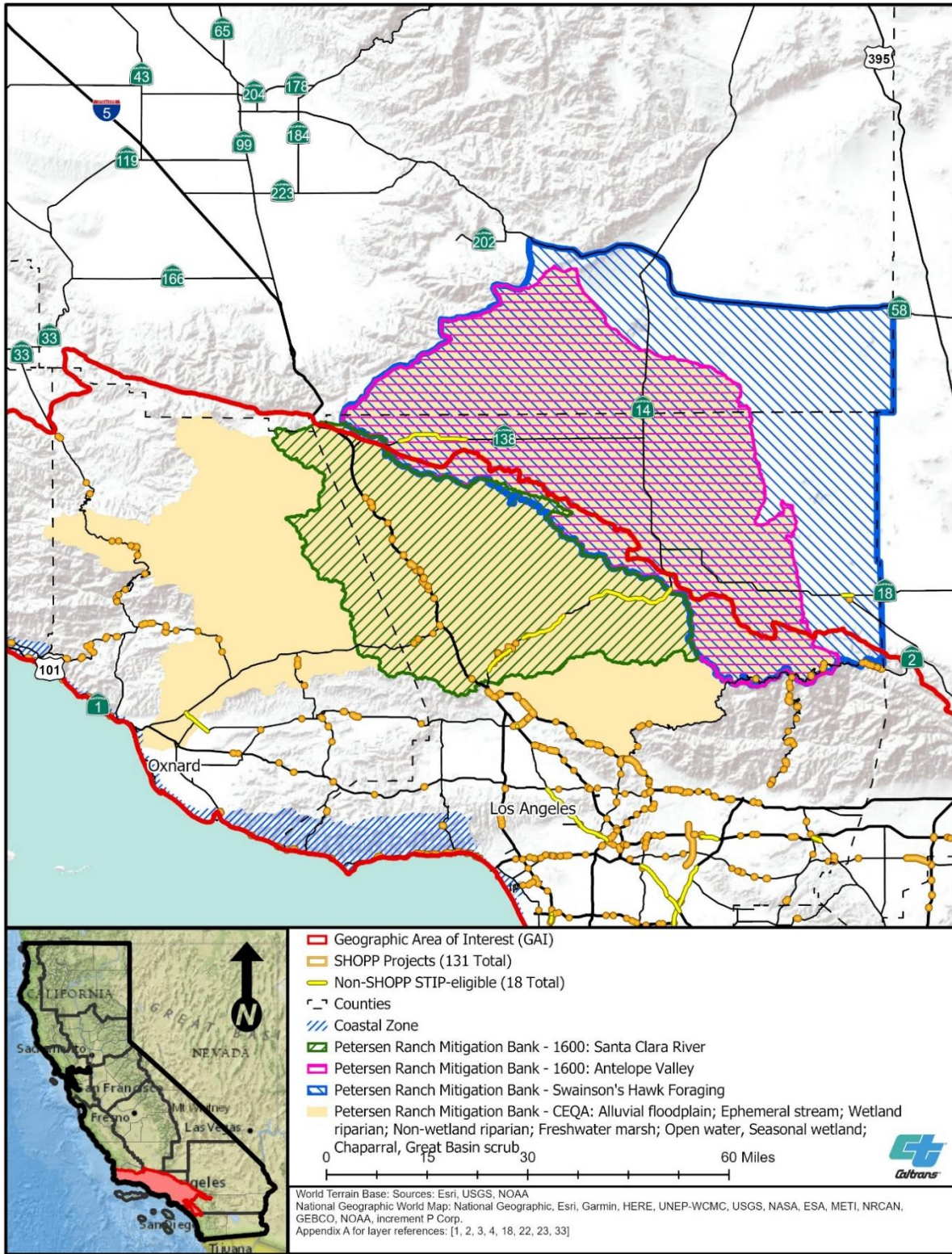


Figure 4-6. Conservation and Mitigation Bank Service Areas within District 7 – Part 3

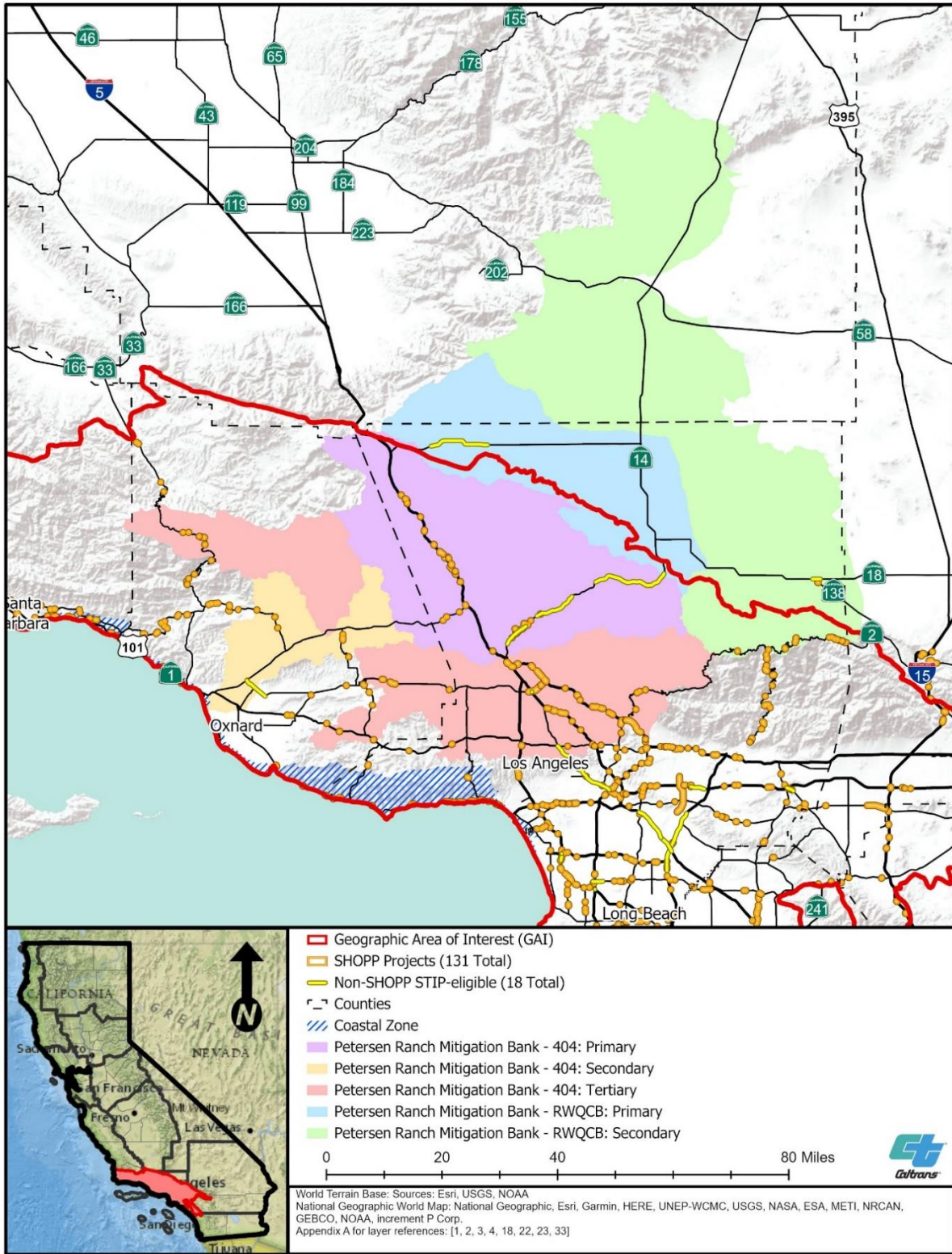
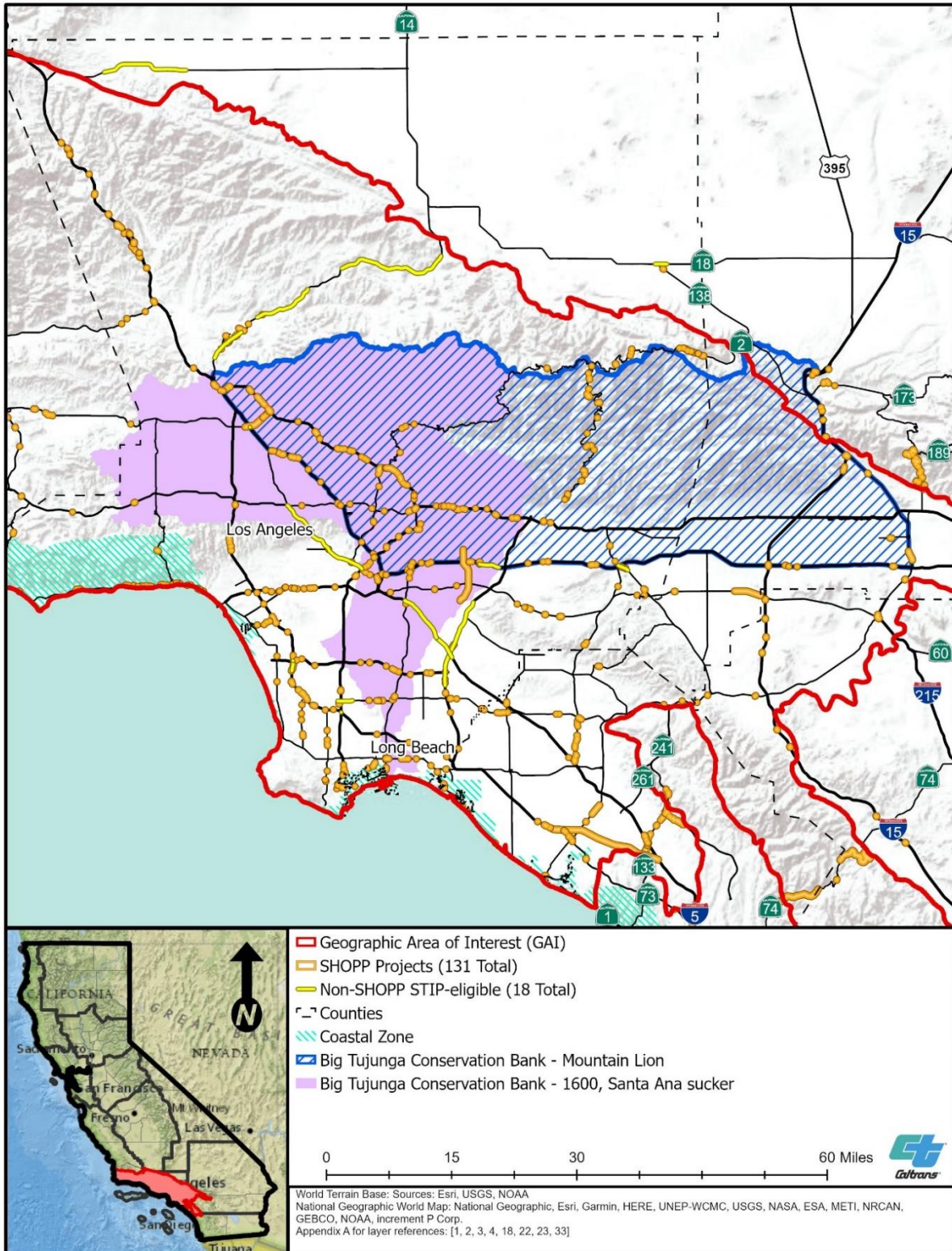


Figure 4-7. Conservation and Mitigation Bank Service Areas within District 7 – Part 4



Figure 4-8. Conservation and Mitigation Bank Service Areas within District 7 – Part 5



4.4 In-lieu Fee Programs

Compensatory mitigation can also be accomplished by participating in an in-lieu fee program, which is an agreement between a natural resource regulatory agency or agencies and a single in-lieu fee sponsor. In-lieu fee mitigation occurs when a permittee provides funds to an in-lieu fee sponsor instead of either completing permittee-responsible mitigation or purchasing credits from a conservation or mitigation bank. An in-lieu fee sponsor can include entities such as public agencies or nonprofit organizations, and the fees are used to plan, build, and maintain a mitigation site. This method is similar to purchasing mitigation credits, in that the mitigation is usually conducted “off site.” Often, the mitigation occurs after the permitted impacts. However, SHC § 800.6(a)(1) authorizes Caltrans to make pre-permit purchases from in-lieu fee programs, which would enable mitigation to be funded before permitted impacts occur.

There are four active and one pending in-lieu fee programs with service areas that overlap the GAI: the Inland Empire Resource Conservation District ILF Program, the Mountains Restoration Trust ILF Program, the San Gabriel Mountains Regional Conservancy ILF Program, the Santa Ana River Watershed ILF Program, and the Ventura River Watershed ILF Program (Table 4-4). Service areas boundaries for the Mountains Restoration Trust and Ventura River Watershed ILF Programs are shown in Figure 4-9. The service area boundaries for the remaining in-lieu fee programs were not publicly available. One additional in-lieu fee program, the California State Coastal Conservancy Calleguas Creek ILF Program, was previously present within the GAI but was recently terminated and is no longer available for use.

Table 4-4. Overview of In-lieu Fee Programs in the GAI^a

Name	Year Approved	Signatories ^{b,c}	Location	Credit Types
California State Coastal Conservancy Calleguas Creek ILF Program	2014 (program terminated in 2021)	Corps, EPA	Calleguas Creek Watershed: Ventura County, Los Angeles County	<ul style="list-style-type: none"> Wetland Stream
Inland Empire Resource Conservation District ILF Program	2018	Corps	Santa Ana River Watershed: Los Angeles County, Orange County, San Bernardino County, Riverside County	<ul style="list-style-type: none"> Wetland Stream
Mountains Restoration Trust ILF Program	2013	Corps, CDFW,^d EPA	Los Angeles County	<ul style="list-style-type: none"> Wetland Stream
San Gabriel Mountains Regional Conservancy ILF Program	Pending	Corps, CDFW,^d RWQCB	Los Angeles County	<ul style="list-style-type: none"> Wetland Stream

Name	Year Approved	Signatories ^{b,c}	Location	Credit Types
Santa Ana River Watershed ILF Program	2012	Corps, EPA, RWQCB	Santa Ana River Watershed: Riverside County	<ul style="list-style-type: none"> ▪ Wetland ▪ Stream
Ventura River Watershed ILF Program	2013	Corps	Ventura River Watershed: Ventura County	<ul style="list-style-type: none"> ▪ Palustrine ▪ Riverine

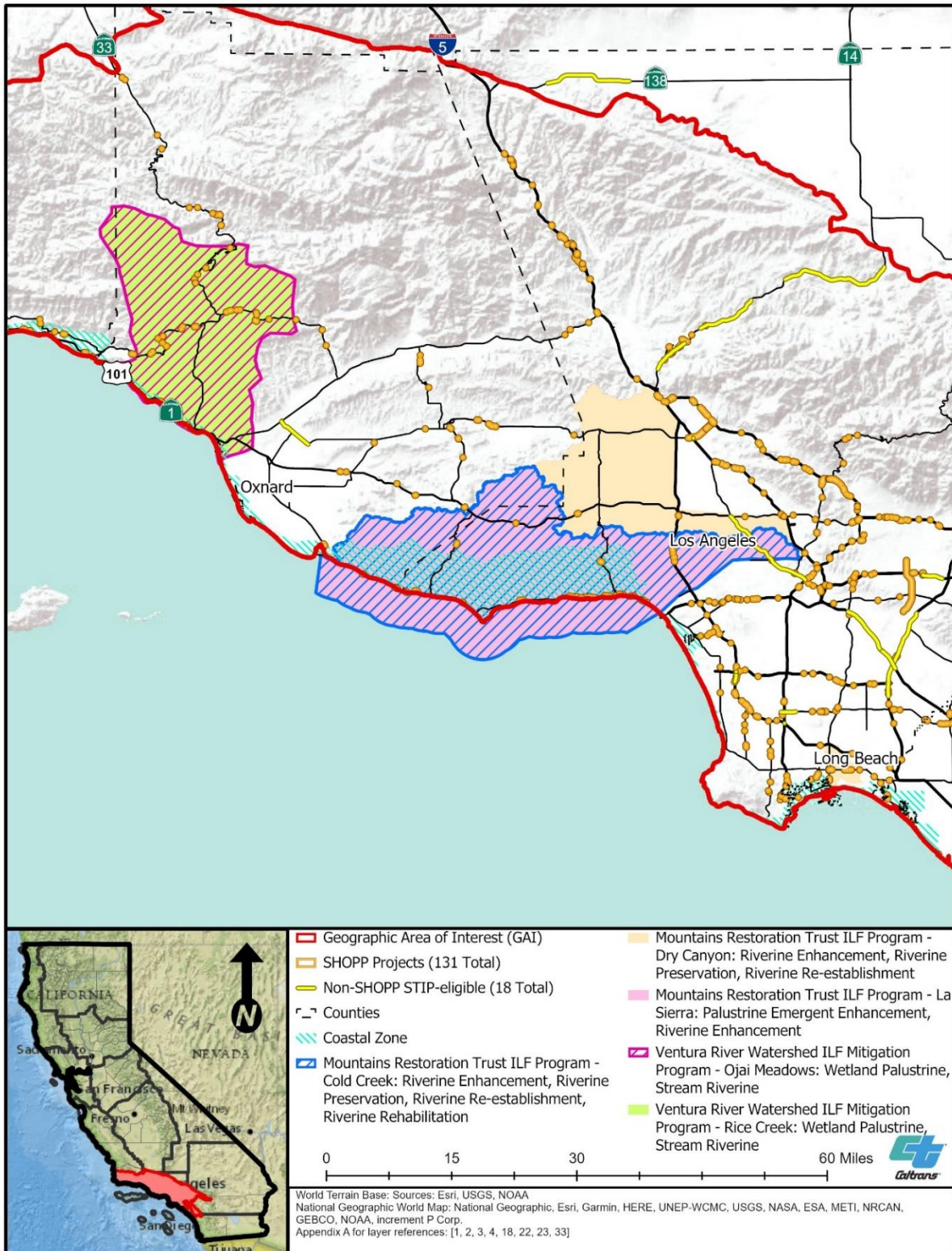
^a Up-to-date information on approved in-lieu fee programs, including available credits, can be found at: <https://ribits.ops.usace.army.mil/ords/f?p=107:47:13453394859366::NO>

^b Signatories in **bold** are signatories to the *Master Process Agreement for Planning and Developing Advance Mitigation Throughout California for the California Department of Transportation* (Caltrans et al. 2020).

^c Established credits are approved by signatory natural resource regulatory agencies. When a natural resource regulatory agency has not approved credits, early coordination may improve chances that credits may be applied to a specific future transportation project permit, on a transportation project-by-project basis.

^d CDFW is part of the Interagency Review Team of some in-lieu fee programs, but does not approve advance mitigation credits.

Figure 4-9. In-lieu Fee Program Service Area Boundaries



4.5 RCISs and MCAs

Assembly Bill 2087 established CDFW's RCIS Program in 2016 (FGC Chapter 9, § 1850, et seq.), which created a voluntary framework for governments and other entities to strategically plan for conservation investments in their areas, including investments performed for compensatory mitigation. To promote the conservation quality of compensatory mitigation investments, the RCIS Program provides an advance mitigation tool that can be applied to resources subject to regulations implemented by CDFW. MCAs are developed when and where an RCIS is approved by CDFW and, with respect to the SHS, create credits that may be used as compensatory mitigation to offset impacts identified under CESA and the Lake and Streambed Alteration Program. It is important to note that MCAs are not permits like HCPs and NCCPs (Section 4.2). MCA advance mitigation credits are analogous to conservation and mitigation bank credits (Section 4.3). In other words, unlike an HCP and NCCP, RCISs and MCAs do not result in the issuance of incidental take permits for covered activities.

Some conservation or enhancement actions, because of their size, type, or location, would not be suitable for establishing mitigation credits through CDFW's mitigation and conservation banking program. Implementing actions on public land—such as installing wildlife crossings or removing fish passage barriers—are examples of potential enhancement actions that may establish CDFW-approved credits under an MCA and not a BEI (CDFW 2019c).

4.5.1. RCISs

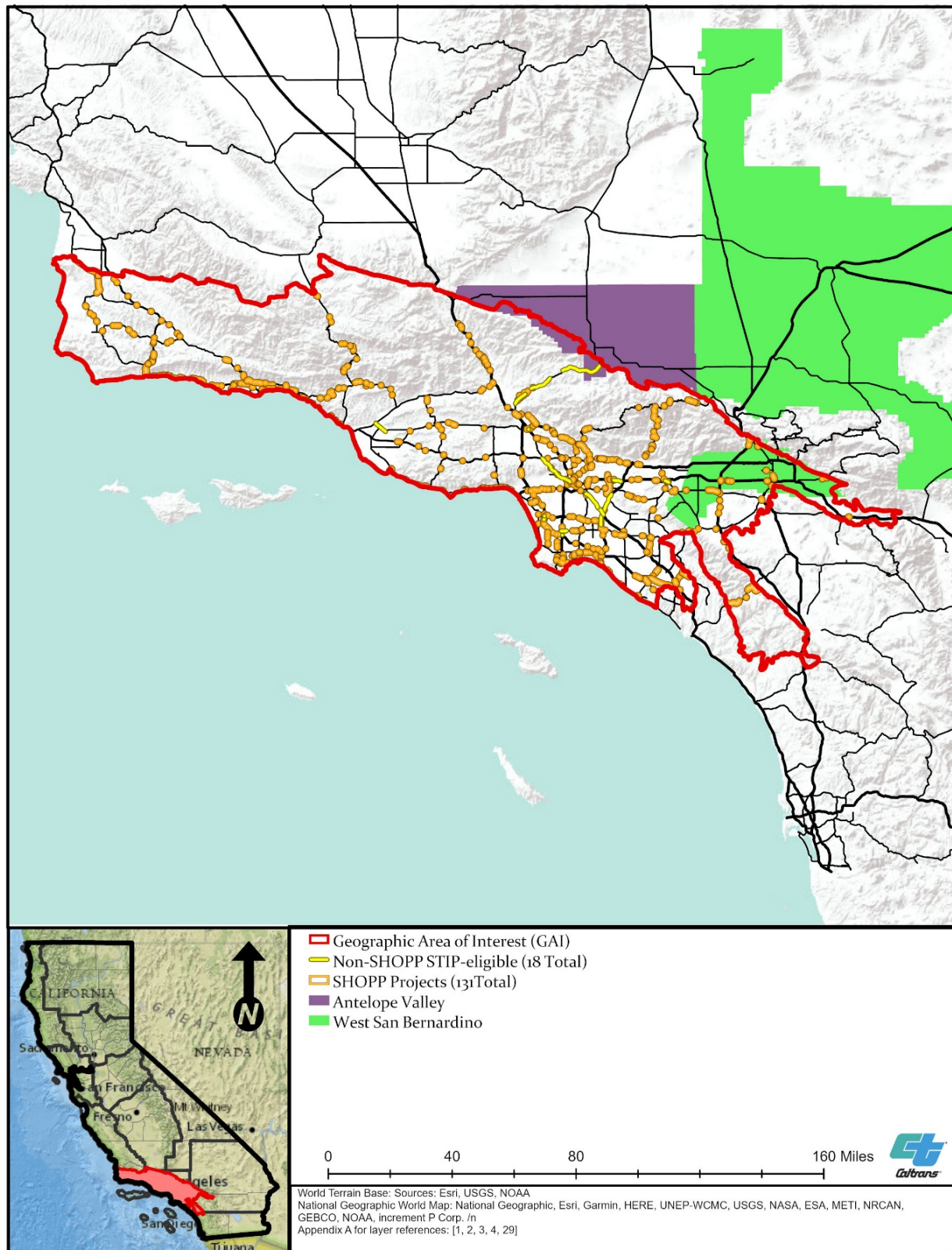
Caltrans identified the following pending RCISs with service areas that overlap part of the GAI (Figure 4-10):

- Antelope Valley RCIS (in progress)
- San Bernardino County RCIS (in progress)

Antelope Valley RCIS (In Progress)

The Antelope Valley RCIS was drafted in October 2019 (ICF 2019), and is currently in substantive review. It covers approximately 707,076 acres in northern Los Angeles County. The Desert Mountains Conservation Authority is the proponent. The Antelope Valley RCIS analyzes 27 focal species, including 22 wildlife species and 5 plant species whose conservation needs may be addressed through the RCIS. Two RCIS focal species are also species of mitigation need in this RAMNA: willow flycatcher and mountain lion. Conservation goals and objectives included in the RCIS focus largely on protecting land that is not currently protected and enhancing habitat values of land that is currently protected. This may include safeguarding wildlife movement corridors and removing passage barriers where they currently exist. In addition, the RCIS discusses the effects of climate change on each focal species. The RCIS identifies Caltrans and the Los Angeles Metropolitan Transportation Authority as the major transportation agencies in the RCIS area. Caltrans was also an active participant in the Antelope Valley RCIS Steering Committee (ICF 2019).

Figure 4-10. RCIS Areas in the GAI



San Bernardino County RCIS (In Progress)

A preliminary draft of the San Bernardino County RCIS was created in 2018 (Dudek 2018), which is currently under revision to meet CDFW's latest RCIS guidelines. San Bernardino County, the San Bernardino Council of Governments, and the Environmental Element Stakeholder Group are the proponents. The preliminary RCIS was divided into two subareas: the 319,000-acre Valley Subarea, which is within the GAI in southwestern San Bernardino County, and the 3.25 million-acre West Desert Subarea, which is outside the GAI in the western portion of the county north of the San Bernardino Mountains. It is expected that these two subareas will be combined into a single contiguous area as part of the RCIS revision process, incorporating portions of the intervening mountains. The preliminary San Bernardino County RCIS analyzes 47 focal species, including 12 plant and 35 wildlife species, and more are likely to be added during the revision process.

The following RCIS focal species are also species of mitigation need in this RAMNA: coastal California gnatcatcher, willow flycatcher, California red-legged frog, and mountain lion. Conservation goals and objectives are based on vegetation types that serve as habitats for the various focal species. The preliminary RCIS includes a landscape-level analysis of areas that are priorities for acquisition, preservation, and enhancement of focal species habitats. The San Bernardino County Transportation Authority was an active participant in the preparation and review of the preliminary San Bernardino County RCIS (Dudek 2018).

4.5.2. Mitigation Credit Agreements

As discussed previously, MCAs are developed when and where an RCIS is approved by CDFW and, with respect to the SHS, create credits that may be used as compensatory mitigation to offset impacts identified under CESA and the Lake and Streambed Alteration Program. An MCA has numerous required elements, many of which parallel the requirements of a mitigation bank. These required elements can be found in the California FGC § 1856. At this time, practical instructions and guidance for establishing MCAs are being developed by CDFW,³ and no MCAs or MCA credits are available. Because both the Antelope Valley RCIS and San Bernardino County RCIS are currently in development, there are future opportunities for Caltrans to enter into MCAs with CDFW in either of these RCIS areas. Once these RCISs are finalized and an MCA has been approved by CDFW, they may create mitigation credits through the agreement that could be applied to Caltrans transportation projects.

Wildlife Crossing and Aquatic Corridor Enhancements

One potential benefit of the RCIS and MCA process is that it may provide a mechanism to generate compensatory mitigation credits by improving permeability of the SHS through wildlife crossings and aquatic corridor enhancements. Through an MCA developed under an RCIS, CDFW would be authorized to recognize CESA and Lake and

³ <https://wildlife.ca.gov/Conservation/Planning/Regional-Conservation>

Streambed Alteration credits established through wildlife crossing and aquatic corridor construction made separate from and distinct from a specific transportation project. As pointed out above, at this time, MCA instructions and guidance are being developed by CDFW. Connectivity information for the GAI is summarized in Section 2.11.

4.6 Other Credit Purchase Opportunities

The Caltrans AMP anticipates that natural resource regulatory agencies may approve compensatory mitigation credits established under new programs or mechanisms not discussed above. Caltrans works with the appropriate natural resource regulatory agency to determine whether credits established under any new program or mechanism are appropriate for purchase through the AMP.

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5. MODELED ESTIMATED IMPACTS

In this chapter, Caltrans documents the potential compensatory mitigation needs in the GAI for fiscal years 2019/20 to 2028/29. Needs were based on estimated potential compensatory mitigation requirements of Caltrans' anticipated SHOPP projects and regional and local STIP-eligible projects. Because the assessment is intended to inform advance mitigation project scoping, the impact estimates used to forecast compensatory mitigation needs do not distinguish between permanent or temporary impacts. Actual transportation project impacts, and natural resource regulatory agency compensatory mitigation conditions on transportation projects, will be determined in the future through each transportation project's environmental studies and permits.

In the Chapter, Caltrans

- Describes its approach to, and major assumptions when, estimating transportation-related compensatory mitigation needs for the GAI.
- Identifies transportation projects that could potentially benefit from advance mitigation planning¹ for the 10-year planning period (Appendix I; summarized in Tables 5-1 and 5-2).
- Provides its estimate of impacts for the 10-year planning period for species of mitigation need; special-status species potentially co-occurring with the species of mitigation need; aquatic resources; and riparian habitat.

Because District 7 chose to focus the analysis on terrestrial resources (Section 1.5), the results presented below are organized by ecoregion section. However, since the GAI spans or overlaps multiple Caltrans Districts, results and analysis are also presented and provided by Caltrans District in Appendix K (District 5), Appendix L (District 7), Appendix M (District 8), Appendix N (District 11), and Appendix O (District 12).

5.1 Approach

Transportation projects eligible to use advance mitigation credits funded by the AMA may only be SHOPP or STIP transportation projects (SHC § 800.7; Caltrans 2019a). Hence, the compensatory mitigation needs for wildlife and aquatic resources in the GAI are based on Caltrans' anticipated SHOPP transportation project impacts and Caltrans, regional, and local STIP-eligible transportation project impacts. At this time:

- SHOPP transportation project needs are forecast quantitatively through the SAMNA model developed for the AMP.
- STIP-eligible needs are assessed qualitatively, through Caltrans District, MPO, RTPA, and other transportation agency coordination.

¹ Benefiting transportation projects are transportation projects whose delivery schedules benefit from advance mitigation credits.

All estimates assume permanent losses, although it is likely that in many cases, some of the effects of a transportation project may be avoided, may be temporary, or may not result in a full loss.

5.1.1. SHOPP Needs Assessment

SHOPP impacts were forecast through the SAMNA. The SAMNA consists of an intersection of assumed transportation project footprints with natural resource layers developed for the SAMNA. Briefly described in Section 1.4, more detailed SAMNA information is provided in the *Advanced Mitigation Needs Assessment GIS Tool Report for California Department of Transportation* (Caltrans 2018). A partial list of caveats, however, is included in Section 1.4.

To identify the list of SHOPP projects planned for the GAI, Caltrans consulted the SHOPP Ten-Year Book for fiscal years 2019/20 to 2028/29 (Caltrans 2021a). The intent of the SHOPP Ten-Year Book is to raise awareness of planned future transportation projects, and detailed transportation project information is not provided. The SHOPP Ten-Year Book includes 132 SHOPP transportation projects in the GAI that are currently in the planning and conceptual phases (Appendix I; summarized in Tables 5-1 and 5-2). Of these transportation projects, the majority are forecast to potentially affect special-status species habitat and/or aquatic resources. The general locations of all 132 planned transportation projects are shown on most of the maps in this document; many of these projects occur in more than one ecoregion or sub-basin.

Each transportation project's potential impact was defined using an assumed buffer from the edge of pavement. Different buffer widths were used depending on the transportation project's activity. The vast majority of planned activities are to replace/install culverts (Appendix I). Table 5-3 provides the range of buffers relevant to the transportation projects listed in the SHOPP Ten-Year Book for this GAI, which are extracted from Table 1 of Caltrans 2021a. Many transportation projects include multiple activities. In those cases, the largest buffer was assigned to the transportation project for the potential impact analysis. Estimates are not precise and are not intended to be used for transportation project permitting; however, they are suitable for informing advance mitigation project scopes.

Table 5-1. Summary of SHOPP Transportation Projects Planned within the Southern California Coast Ecoregion Section of the GAI (All Caltrans Districts)

Caltrans District	Sub-basin (HUC-8)	Sub-basin Number	Number of Transportation Projects	Counties	Example Activities
7	Calleguas	18070103	4	Ventura	<ul style="list-style-type: none"> ▪ Bridge rail ▪ Replace/install culverts
7	Los Angeles ^a	18070105	33	Los Angeles	<ul style="list-style-type: none"> ▪ Bridge rail ▪ Replace/install culverts ▪ Bridge replacement/new construction ▪ Retaining wall ▪ Widen roadway ▪ Cure in place line culvert ▪ Acceleration/deceleration lane
7	Santa Clara ^a	18070102	2	Los Angeles, Ventura	<ul style="list-style-type: none"> ▪ Replace/ install culverts
7	Santa Monica Bay	18070104	13	Los Angeles, Ventura	<ul style="list-style-type: none"> ▪ Bridge replacement/new construction ▪ Bridge rail ▪ Replace/install culverts ▪ Cure in place line culvert
7	Ventura ^a	18070101	4	Ventura	<ul style="list-style-type: none"> ▪ Bridge rail ▪ Drainage improvements ▪ Replace/install culverts
7, 12	San Gabriel ^a	18070106	21	Los Angeles, Orange	<ul style="list-style-type: none"> ▪ Bridge rail ▪ Replace/install culverts ▪ Bridge replacement/new construction ▪ Slip line culvert ▪ Rock slope protection ▪ Cure in place line culvert ▪ Abandon/remove culvert
7, 8, 12	Santa Ana ^a	18070203	5	Los Angeles, Riverside, San Bernardino, Orange	<ul style="list-style-type: none"> ▪ Replace/install culverts ▪ Cure in place line culvert ▪ Improved highway geometry ▪ Acceleration/deceleration lane ▪ Bridge rail ▪ Bridge replacement/new construction ▪ Widen shoulders
8, 12	Aliso-San Onofre ^a	18070301	8	Orange, Riverside	<ul style="list-style-type: none"> ▪ Cure in place line culvert

Caltrans District	Sub-basin (HUC-8)	Sub-basin Number	Number of Transportation Projects	Counties	Example Activities
12	Newport Bay	18070204	11	Orange	<ul style="list-style-type: none"> ▪ Improved highway geometry ▪ Auxiliary lanes ▪ Acceleration/deceleration lane ▪ Bridge rail ▪ Cure in place line culvert ▪ Replace/install culverts
12	Seal Beach	18070201	3	Orange	<ul style="list-style-type: none"> ▪ Replace/install culverts ▪ Slip line culvert
5	San Antonio	18060009	3	Santa Barbara	<ul style="list-style-type: none"> ▪ Bridge rail ▪ Replace/install culverts ▪ Improved highway geometry
5	Santa Barbara Coastal	18060013	15	Santa Barbara	<ul style="list-style-type: none"> ▪ Replace/install culverts ▪ Bridge replacement/new construction ▪ Bridge rail ▪ Retaining wall
5	Santa Maria	18060008	3	Santa Barbara	<ul style="list-style-type: none"> ▪ Improved highway geometry ▪ Replace/install culverts
5	Santa Ynez	18060010	11	Santa Barbara	<ul style="list-style-type: none"> ▪ Bridge replacement/new construction ▪ Replace/install culverts ▪ Retaining wall ▪ Bridge rail ▪ Roundabouts
5, 7, 8, 12 (all Districts)	All HUC-8s	N/A	102^b	N/A	N/A

Note: N/A = not applicable

^a Sub-basin spans both ecoregion sections in the GAI.

^b Total does not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one sub-basin.

Table 5-2. Summary of SHOPP Transportation Projects Planned within the Southern California Mountains and Valleys Section of the GAI (All Caltrans Districts)

Caltrans District	Sub-basin	Sub-basin Number	Number of Transportation Projects	Counties	Example Activities
7, 5	Ventura ^a	18070101	3	Ventura, Santa Barbara	<ul style="list-style-type: none"> ▪ Bridge rail ▪ Drainage improvements ▪ Replace/install culverts
7	Antelope-Fremont Valleys	18090206	3	Los Angeles	<ul style="list-style-type: none"> ▪ Replace/install culverts
7	Cuyama	18060007	1	Ventura	<ul style="list-style-type: none"> ▪ Drainage improvements
7	Los Angeles ^a	18070105	1	Los Angeles	<ul style="list-style-type: none"> ▪ Replace/install culverts
7	Santa Clara ^a	18070102	8	Los Angeles, Ventura	<ul style="list-style-type: none"> ▪ Replace/install culverts ▪ Drainage improvements ▪ Bridge rail
7, 8	Mojave	18090208	5	Los Angeles, San Bernardino	<ul style="list-style-type: none"> ▪ Replace/install culverts
7, 12	San Gabriel ^a	18070106	6	Los Angeles, Orange	<ul style="list-style-type: none"> ▪ Bridge rail ▪ Replace/install culverts
7, 8, 12	Santa Ana ^a	18070203	21	Los Angeles, Riverside, San Bernardino, Orange	<ul style="list-style-type: none"> ▪ Replace/install culverts ▪ Cure in place line culvert ▪ Improved highway geometry ▪ Acceleration/deceleration lane ▪ Bridge rail ▪ Bridge replacement/new construction ▪ Widen shoulders
8	San Jacinto	18070202	9	Riverside	<ul style="list-style-type: none"> ▪ Bridge replacement/new construction ▪ Widen shoulders
8	Santa Margarita	18070302	1	Riverside	<ul style="list-style-type: none"> ▪ Bridge rail
8	Whitewater River	18100201	2	Riverside	<ul style="list-style-type: none"> ▪ Bridge replacement/new construction ▪ Widen shoulders
8, 11, 12	Aliso-San Onofre ^a	18070301	8	Orange, Riverside	<ul style="list-style-type: none"> ▪ Drainage improvements ▪ Bridge rail ▪ Widen shoulders ▪ Drainage improvements

Caltrans District	Sub-basin	Sub-basin Number	Number of Transportation Projects	Counties	Example Activities
11	San Luis Rey-Escondido	18070303	4	San Diego	▪ Replace/install culverts
5, 7, 8, 11, 12 (all Districts)	All HUC-8s	N/A	36^b	N/A	N/A

Note: N/A = not applicable

^a Sub-basin spans both ecoregion sections in the GAI.

^b Total does not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one sub-basin.

Table 5-3. Assumed Buffer Widths, by SHOPP Transportation Project Activity

Activity	Buffer Distance (feet)
Abandon/remove culvert	20
Acceleration/deceleration lane	20
Auxiliary lanes	20
Bridge rail	20
Bridge replacement/new construction	40
Cure in place line culvert	20
Drainage improvements	20
Improved highway geometry	40
Replace/install culverts	20
Retaining wall	15
Rock slope protection	30
Roundabouts	40
Slip line culvert	20
Widen roadway	15
Widen shoulders	15

Source: Caltrans 2021a, Table 1

5.1.2. SAMNA Model Results

The AMP developed the SAMNA strictly and specifically for Caltrans' use in advance mitigation planning—that is, when Caltrans is justifying, proposing, and scoping advance mitigation projects (Caltrans 2019a, 2021b). The SAMNA model, its foundation, and assumptions are described in the *Statewide Advance Mitigation Needs Assessment Report* (Caltrans 2021b).

The SAMNA's impact estimates from planned transportation projects anticipated between fiscal years 2019/20 and 2028/29 are provided in the *Statewide Advance Mitigation Needs Assessment Report* (Caltrans 2021b). All results are provided in acres. SAMNA results estimating impacts in the Southern California Coast ecoregion portion of the GAI can be found in Section 5.2. SAMNA results estimating impacts on in the Southern California Mountains and Valleys ecoregion portion of the GAI can be found in Section 5.3.

5.1.3. Non-SHOPP STIP-eligible Needs Assessment

At this time, STIP-eligible needs are assessed qualitatively, through coordination between Caltrans District 7, MPOs, RTPAs, and other public agencies that implement transportation improvements.

Obtaining a reliable list of STIP transportation projects within the 10-year planning horizon is problematic. It is never known which transportation projects will be funded through the STIP until the funds are voted on by the California Transportation Commission, at which point the transportation projects are well past their planning and conceptualization phases and entering their delivery phases. Because of this timing, funded STIP projects will likely need compensatory mitigation before the AMP can deliver the needed mitigation. AMP planning, therefore, must glean a list of transportation projects from the broader set of non-SHOPP transportation projects that may or may not receive STIP funding, such as STIP-eligible transportation projects. Additionally, the STIP is currently receiving very little funding in favor of the “fix-it-first” philosophy of the Road Repair and Accountability Act of 2017, although there is a backlog of transportation projects that potentially need these funds.

To address the dynamic nature of the non-SHOPP STIP-eligible list, it was necessary to identify transportation projects that will be (1) reasonably certain to occur in the same 10-year time frame as the SHOPP projects used in the SAMNA and (2) highly likely to receive STIP funding. To that end, the AMP consulted the Caltrans Division of Transportation Planning's Multimodal Operations, Non-SHOPP, Transportation Equity Report database, using the criteria that a transportation project would have to be in a fiscally constrained² regional transportation plan, with a Ready to List³ year identified as

² Transportation project funding is reasonably assured.

³ Transportation project schedule is reasonably assured. Ready to List is a named milestone within the Caltrans project delivery process. It is the point when a complete package is ready for contractors to bid on.

occurring in the 10-year planning horizon. The list would be further refined through consultation with Caltrans District 7 and its regional and local transportation partners (see Table 1-3 of this document for the consultation summary).

Non-SHOPP STIP-eligible Potential Impacts

Twelve (12) STIP-eligible transportation projects are planned within District 7, for fiscal years 2019/20 to 2028/29. STIP-eligible transportation projects planned within the Southern California Coast ecoregion section of District 7 are listed in Table 5-4 and STIP-eligible transportation projects planned within the Southern California Mountains and Valleys ecoregion section of District 7 are listed in Table 5-5. The HUC-8 subbasins in which the planned transportation projects will be located are provided in each table; some HUC-8s overlap both ecoregion sections. It is likely that these transportation projects would have compensatory mitigation conditions placed on them by natural resource regulatory agencies, similar to conditions placed on SHOPP transportation projects.

Table 5-4. STIP-eligible Transportation Projects Planned within Southern California Coast Ecoregion Section of District 7

EA Number	County	Route	Begin Mile	End Mile	Sub-basin	Activity
Not available	Ventura	118	0.53	4.103	Calleguas/Santa Clara	Not available
Not available	Los Angeles	10	28.5	30.5	Los Angeles	Not available
Not available	Los Angeles	101	1.6	11.8L	Los Angeles/Santa Monica Bay	Not available
29821	Los Angeles	5/605	6.39/ R6.36	9.45/ R15.1	Los Angeles/San Gabriel	Not available
34350	Los Angeles	5	8.9	13.9	Los Angeles/San Gabriel	Not available
Not available	Los Angeles	10	28.5	30.5	San Gabriel	Not available
Not available	Los Angeles	405	20.21	R21.22	San Gabriel	Not available
Not available	Los Angeles	91	6.012	R7.5	San Gabriel	Not available

Note: EA = expenditure authorization

Table 5-5. STIP-eligible Transportation Projects Planned within Southern California Mountains and Valleys Section of District 7

EA Number	County	Route	Begin Mile	End Mile	Sub-basin	Activity
Not available	Los Angeles	14	43.288	R54.472	Antelope-Fremont Valleys/Santa Clara	Not available
21061	Los Angeles	71	R0.5	R1.6	San Gabriel	Not available
Not available	Los Angeles	14	33	39	Santa Clara	Not available
Not available	Los Angeles	14	R26.986	R30.722	Santa Clara	Not available

Note: EA = expenditure authorization

5.2 Southern California Coast Ecoregion Section Results

The quantitative results provided in this document are pursuant to the SAMNA model. Specific wildlife and aquatic resource impacts will be assessed as part of each transportation project's environmental studies.

5.2.1. Estimated Wildlife Impacts

The special-status terrestrial plant and wildlife species evaluated through the SAMNA consisted of federal and state threatened, endangered, or sensitive species; state fully protected or rare species; or state species of special concern. Based on a search of the species-attributed vegetation layer, 114 special-status terrestrial species are known to occur or have the potential to occur in the portion of the GAI that lies within the Southern California Coast ecoregion section (Section 2.8; Appendix E, Table E-1; Caltrans 2021b).

Using the methods described in Section 5.1.1, the SAMNA analysis determined that 102 SHOPP transportation projects could potentially affect 17 habitat types, which could support up to 112 special-status species in Southern California Coast ecoregion portion of the GAI (Appendix E; Table 5-6). Complete terrestrial species SAMNA results for the 102 transportation projects planned within the Southern California Coast ecoregion section of the GAI are provided in Table E-1 of Appendix E.

Table 5-6. Summary of Estimated SHOPP Impacts on Special-status Terrestrial Species Habitat: Southern California Coast Ecoregion Section

Caltrans Districts	Number of Caltrans SHOPP Projects ^a	Number of Habitats	Special-status Species ^b	Estimated Total Habitat Impact (acres)
7	59	14	90	16.9
5	24	13	91	141.5
8	14	0	0	0
12	10	6	70	9.2
5, 7, 8, 12 (all Districts)	102^{a,d}	17^d	112^{b,d}	167.6

^a Transportation projects are listed in Table 5-1.

^b Special-status terrestrial plant and wildlife species evaluated through the SAMNA consisted of federal and state threatened, endangered, or sensitive species; state fully protected or rare species; or state species of special concern.

^c Totals may not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one District.

^d Totals may not reflect numbers presented in rows above. Some habitat types and special status species are found in more than one District.

Estimated Impacts on Species of Mitigation Need

As described in Section 1.5, to focus the assessment, Caltrans District 7 identified species of mitigation need, for which results are provided below. Species of mitigation need are species for which a high probability of compensatory mitigation need is anticipated. Each is discussed briefly in the subsections below:

- **Coastal California Gnatcatcher.** The SAMNA estimated that 16.9 acres of coastal California gnatcatcher habitat may be affected by 27 Caltrans SHOPP projects planned for the Southern California Coast ecoregion portion of the GAI (Caltrans 2021b).
- **California Red-legged Frog.** The SAMNA estimated that 106.8 acres of California red-legged frog habitat may be affected by 57 Caltrans SHOPP projects planned for the Southern California Coast ecoregion portion of the GAI (Caltrans 2021b).
- **Least Bell's Vireo.** The SAMNA, modified to incorporate species distribution data provided by FWS, estimated that 1.8 acres of Least Bell's Vireo habitat may be affected by 11 Caltrans SHOPP projects planned for the Southern California Coast ecoregion portion of the GAI (Caltrans 2021b; FWS 2021a).
- **Mountain Lion.** The SAMNA estimated that 117.7 acres of mountain lion habitat may be affected by 36 Caltrans SHOPP projects planned for the Southern California Coast ecoregion portion of the GAI (Caltrans 2021b).

- **Southwestern Willow Flycatcher.** The SAMNA, modified to incorporate species distribution data provided by FWS, estimated that 1.8 acres of Southwestern willow flycatcher habitat may be affected by 13 Caltrans SHOPP projects planned for the Southern California Coast ecoregion portion of the GAI (Caltrans 2021b; FWS 2021b).

Results are tabulated in Table 5-7.

Estimated Impacts on Other Special-status Species

As discussed further in Chapter 9, during advance mitigation project scoping, consideration will also be given to additional special-status species that the SAMNA identified as co-occurring with the species of mitigation need, because they could potentially be affected by the same habitat impacts that affect the species of mitigation need. The above-listed species of mitigation need co-occur with other protected plant, invertebrate, amphibian, reptile, bird, and mammal species in the Southern California Coast ecoregion in 15 habitats. Using the methods described in Section 5.1.1, the SAMNA forecast impacts on an additional 104 special-status terrestrial species that potentially use the same habitats as the species of mitigation need in the GAI (Table 5-8).

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Table 5-7. Estimated SHOPP Impacts on Species of Mitigation Need: Southern California Coast Ecoregion Section (All Caltrans Districts; in acres)

Caltrans Districts	Coastal California Gnatcatcher: Number of Caltrans SHOPP Projects	Coastal California Gnatcatcher: Estimated Habitat Impact (acres)	California Red-legged Frog: Number of Caltrans SHOPP Projects	California Red-legged Frog: Estimated Habitat Impact (acres)	Least Bell's Vireo: Number of Caltrans SHOPP Projects	Least Bell's Vireo: Estimated Riparian Habitat Impact (acres)	Mountain Lion: Number of Caltrans SHOPP Projects	Mountain Lion: Estimated Habitat Impact (acres)	Southwestern Willow Flycatcher: Number of Caltrans SHOPP Projects	Southwestern Willow Flycatcher: Estimated Habitat Impact (acres)
7	19	9.9	25	12.7	5	0.3	10	8.4	3	<0.1
5	0	0	23	87.0	6	1.6	24	108.8	8	1.6
8	0	0	0	0	0	0	0	0	0	0
12	8	7.0	9	7.2	0	0	2	0.5	2	<0.1
5, 7, 8, 12 (all Districts)	27 ^a	16.9	57 ^a	106.8	11 ^a	1.8	36 ^a	117.7	13 ^a	1.8

^a Totals may not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one District.

Table 5-8. Estimated SHOPP Impacts on Co-occurring Special Status Species: Southern California Coast Ecoregion Section (acres)

Common Name	Species Name	Status	Annual Grassland	Chamise- Redshank Chaparral	Coastal Oak Woodland	Coastal Scrub	Deciduous Orchard	Desert Wash	Eucalyptus	Fresh Emergent Wetland	Lacustrine	Mixed Chaparral	Montane Riparian	Pasture	Perennial Grassland	Sierran Mixed Conifer	Valley Foothill Riparian
Not applicable	Not applicable	Total	67.47	0.07	6.36	22.67	2.64	0.29	0.77	0.40	0.66	8.89	0.03	22.70	0.06	0.07	1.87
Species of Mitigation Need	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Coastal California gnatcatcher	<i>Polioptila californica</i>	FT, SSC	10.95	0	0.62	3.96	0	0	0	0	0	1.09	0	0	0.06	0	0.22
California red-legged frog	<i>Rana draytonii</i>	FT, SSC	67.47	0	6.36	22.67	0	0	0.77	0.40	0.66	6.57	0.03	0	0.06	0	1.85
Least Bell's Vireo	<i>Vireo bellii pusillus</i>	FE, SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.87
Mountain lion	<i>Puma concolor</i>	ST	58.46	0.07	6.25	21.06	2.08	0.24	0.12	0	0	6.08	0	21.65	0	0.07	1.60
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	FE, SE	0	0	0	0	0	0	0.13	0	0	0	0.03	0	0	0	1.62
Plants	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Marsh sandwort	<i>Arenaria paludicola</i>	FE, SE	0	0	0	0	0	0	0	0.37	0	0	0	0	0	0	0
Braunton's milk-vetch	<i>Astragalus brauntonii</i>	FE	12.13	0	0	5.82	0	0	0	0	0	5.73	0	0	0	0	0
Ventura marsh milk-vetch	<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>	FE, SE	0	0	0	4.61	0	0	0	0	0	0	0	0	0	0	0
Coastal dunes milk-vetch	<i>Astragalus tener</i> var. <i>titi</i>	FE, SE	0	0	0	4.76	0	0	0	0	0	0	0	0	0	0	0
Nevin's barberry	<i>Berberis nevinii</i>	FE, SE	0	0	0	5.82	0	0	0	0	0	5.73	0	0	0	0	0
Thread-leaved brodiaea	<i>Brodiaea filifolia</i>	FT, SE	9.86	0	0	5.00	0	0	0	0	0	1.46	0	0	0	0	0
California jewelflower	<i>Caulanthus californicus</i>	FE, SE	2.26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salt marsh bird's-beak	<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	FE, SE	0	0	0	4.76	0	0	0	0	0	0	0	0	0	0	0
San Fernando valley spineflower	<i>Chorizanthe parryi</i> var. <i>fernandina</i>	FS, SE	2.26	0	0	0.95	0	0	0	0	0	0	0	0	0	0	0
Surf thistle	<i>Cirsium rhotophilum</i>	FS, ST	0	0	0	0.15	0	0	0	0	0	0	0	0	0	0	0
La Graciosa thistle	<i>Cirsium scariosum</i> var. <i>loncholepis</i>	FE, ST	49.71	0	0	0.15	0	0	0	0	0	0.05	0	0	0	0	0

Common Name	Species Name	Status	Annual Grassland	Chamise- Redshank Chaparral	Coastal Oak Woodland	Coastal Scrub	Deciduous Orchard	Desert Wash	Eucalyptus	Fresh Emergent Wetland	Lacustrine	Mixed Chaparral	Montane Riparian	Pasture	Perennial Grassland	Sierran Mixed Conifer	Valley Foothill Riparian
Seaside bird's-beak	<i>Cordylanthus rigidus</i> ssp. <i>littoralis</i>	FS, SE	0	0	0	0.15	0	0	0	0	0	0.05	0	0	0	0	0
Gaviota tarplant	<i>Deinandra increscens</i> ssp. <i>villosa</i>	FE, SE	8.44	0	0	4.61	0	0	0	0	0	0	0	0	0	0	0
Santa Susana tarplant	<i>Deinandra minthornii</i>	SR	0	0	0	0.95	0	0	0	0	0	4.45	0	0	0	0	0
Vandenberg monkeyflower	<i>Diplacus vandenbergensis</i>	FE	0	0	0	16.73	0	0	0	0	0	0.79	0	0	0	0	0
Beach spectaclepod	<i>Dithyrea maritima</i>	ST	0	0	0	4.76	0	0	0	0	0	0	0	0	0	0	0
Slender-horned spineflower	<i>Dodecahema leptoceras</i>	FE, SE	0	0	0	5.82	0	0	0	0	0	5.73	0	0	0	0	0
Marcescent dudleya	<i>Dudleya cymosa</i> ssp. <i>agourensis</i>	FT	0	0	0	0	0	0	0	0	0	8.89	0	0	0	0	0
Santa Monica dudleya	<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>	FT	0	0	0	0.95	0	0	0	0	0	4.45	0	0	0	0	0
Conejo dudleya	<i>Dudleya parva</i>	FT	2.26	0	0	0.95	0	0	0	0	0	0	0	0	0	0	0
Laguna Beach dudleya	<i>Dudleya stolonifera</i>	FT, ST	8.44	0	0	4.61	0	0	0	0	0	1.46	0	0	0	0	0
Verity's dudleya	<i>Dudleya verityi</i>	FT	0	0	0	0.95	0	0	0	0	0	4.45	0	0	0	0	0
Indian knob mountainbalm	<i>Eriodictyon altissimum</i>	FE, SE	0	0	0	16.73	0	0	0	0	0	0.79	0	0	0	0	0
Lompoc yerba santa	<i>Eriodictyon capitatum</i>	FE, SR	0	0	0	17.80	0	0	0	0	0	5.29	0	0	0	0	0
Conejo buckwheat	<i>Eriogonum crocatum</i>	SR	2.26	0	0	0.95	0	0	0	0	0	4.45	0	0	0	0	0
San Diego button-celery	<i>Eryngium aristulatum</i> var. <i>parishii</i>	FE, SE	9.86	0	0	5.00	0	0	0	0	0	0	0	0	0	0	0
Roderick's fritillary	<i>Fritillaria roderickii</i>	SE	67.47	0	0	22.67	0	0	0	0	0	0	0	0	0	0	0
Beach layia	<i>Layia carnosa</i>	FE, SE	0	0	0	0.15	0	0	0	0	0	0	0	0	0	0	0
Spreading navarretia	<i>Navarretia fossalis</i>	FT	64.18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
California Orcutt grass	<i>Orcuttia californica</i>	FE, SE	12.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lyon's pentachaeta	<i>Pentachaeta lyonii</i>	FE, SE	10.70	0	0	5.43	0	0	0	0	0	5.73	0	0	0	0	0
Adobe sanicle	<i>Sanicula maritima</i>	FS, SR	49.71	0	0	0.15	0	0	0	0	0	0.05	0	0	0	0	0

Common Name	Species Name	Status	Annual Grassland	Chamise- Redshank Chaparral	Coastal Oak Woodland	Coastal Scrub	Deciduous Orchard	Desert Wash	Eucalyptus	Fresh Emergent Wetland	Lacustrine	Mixed Chaparral	Montane Riparian	Pasture	Perennial Grassland	Sierran Mixed Conifer	Valley Foothill Riparian
Santa Ynez false lupine	<i>Thermopsis macrophylla</i>	FS, SR	0	0	0	0	0	0	0	0	0	4.45	0	0	0	0	0
Big-leaved crownbeard	<i>Verbesina dissita</i>	FT, ST	0	0	0	4.61	0	0	0	0	0	1.46	0	0	0	0	0
Invertebrates	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT	48.71	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Riverside fairy shrimp	<i>Streptocephalus woottoni</i>	FE	1.61	0	0	0.87	0	0	0	0	0	0	0	0	0	0	0
Amphibians	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
California tiger salamander	<i>Ambystoma californiense</i>	FE, ST	52.15	0	3.36	0	0	0	0	0	0	0	0	0	0	0	0
Coast range newt [California newt]	<i>Taricha torosa</i>	SSC	3.14	0	2.47	5.54	0	0	0.77	0.40	0.47	5.34	0	0	0	0	0.64
Ensatina	<i>Ensatina eschscholtzii</i>	FS	0	0	6.25	21.06	0	0	0.12	0	0	6.08	0	0	0	0.07	1.60
Western spadefoot	<i>Spea hammondi</i>	FS, SSC	67.47	0.07	6.21	22.67	2.64	0	0.77	0.40	0.66	6.28	0	0	0.06	0	0
Arroyo toad	<i>Anaxyrus californicus</i>	FE, SSC	0	0	0	0	0	0.05	0.48	0	0	1.20	0	0	0	0	0.25
Foothill yellow-legged frog	<i>Rana boylei</i>	FS, SE ^c	5.54	0.07	2.59	7.89	0	0	0.12	0	0	5.56	0	0	0	0.07	0.66
Reptiles	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Coast horned lizard [Blainville's horned lizard]	<i>Phrynosoma blainvillii</i>	FS, SCC	67.47	0.07	6.36	22.67	0	0	0.77	0	0	6.57	0	0	0.06	0	1.85
California legless lizard	<i>Anniella pulchra</i>	FS, SSC	0	0.07	6.36	22.67	0	0.29	0.77	0	0	6.57	0	0	0.06	0	1.85
Orange-throated whiptail	<i>Aspidoscelis hyperythra</i>	FS	0	0	0	0.55	0	0	0	0	0	0	0	0	0	0	0
Ring-necked snake	<i>Diadophis punctatus</i>	FS	67.47	0.07	6.36	22.67	0	0	0.77	0.40	0	6.57	0.03	22.70	0.06	0.07	1.85
Western patch-nosed snake	<i>Salvadora hexalepis</i>	SSC	63.82	0.07	6.23	22.14	0	0.29	0.12	0	0	6.18	0	0	0	0	0.87
Common gartersnake	<i>Thamnophis sirtalis</i>	SSC	67.47	0.07	6.36	22.67	2.64	0	0.77	0.40	0.66	6.57	0.03	22.70	0.06	0.07	1.85
Two-striped gartersnake	<i>Thamnophis hammondi</i>	FS, SSC	67.47	0.07	6.36	22.67	0	0	0.77	0.40	0.66	6.57	0.03	0	0	0	1.85

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Red diamond rattlesnake	<i>Crotalus ruber</i>	FS, SSC	4.98	0	0	0.55	0	0	0	0	0	0	0	0	0	0	0
Birds	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Brown pelican	<i>Pelecanus occidentalis</i>	FS, SFP	0	0	0	0.32	0	0	0	0	0.23	0	0	0	0	0	0
Least bittern	<i>Ixobrychus exilis</i>	SSC	0	0	0	0	0	0	0	0.40	0.66	0	0	0	0	0	0
Great blue heron	<i>Ardea herodias</i>	SFS	67.47	0	6.36	22.67	0	0	0.77	0.40	0.66	0	0.03	0	0.06	0.07	1.85
Great egret	<i>Ardea alba</i>	SFS	67.47	0	6.36	0	0	0	0.77	0.40	0.66	0	0.03	0	0.06	0	1.85
Redhead	<i>Aythya americana</i>	SSC	0	0	0	0	0	0	0	0.03	0.29	0	0	0	0	0	0
California condor	<i>Gymnogyps californianus</i>	FE, SE	1.96	0	0.28	0.54	0	0	0	0	0	0.21	0	0	0	0	0
Osprey	<i>Pandion haliaetus</i>	SFS	67.47	0	6.36	0	0	0.29	0.77	0.40	0.66	6.57	0.03	0	0.06	0.07	1.85
White-tailed kite	<i>Elanus leucurus</i>	FS, SFP	67.47	0.07	6.36	22.67	2.64	0	0.77	0.40	0	6.57	0	0	0.06	0	1.85
Bald eagle	<i>Haliaeetus leucocephalus</i>	FS, SE	67.47	0.07	6.36	22.67	0	0	0.77	0.40	0.66	6.57	0.03	0	0.06	0.07	1.85
Northern harrier	<i>Circus hudsonius [cyaneus]</i> ^c	SSC	67.47	0.07	6.36	22.67	2.64	0.29	0.77	0.40	0.66	6.57	0.03	0	0.06	0.07	1.85
Golden eagle	<i>Aquila chrysaetos</i>	FS, SFP	58.46	0.07	6.25	21.06	0	0.24	0.12	0.03	0	6.08	0	21.65	0	0.07	1.60
Peregrine falcon	<i>Falco peregrinus</i>	SFP	67.47	0.07	6.36	22.67	0	0	0.77	0.40	0.66	6.57	0.03	0	0.06	0.07	1.85
Snowy plover	<i>Charadrius nivosus</i>	FT, SSC	0	0	0	0	0	0	0	0	0.66	0	0	0	0	0	0
Mountain plover	<i>Charadrius montanus</i>	FS, SSC	46.23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Black skimmer	<i>Rynchops niger</i>	SSC	0	0	0	0	0	0	0	0	0.12	0	0	0	0	0	0
Burrowing owl	<i>Athene cunicularia</i>	FS, SSC	61.01	0.02	2.03	8.59	0	0.29	0.77	0	0	1.63	0	17.07	0.06	0	0.61
Spotted owl	<i>Strix occidentalis</i>	FT, ST	0	0	0.85	0	0	0	0	0	0	0	0	0	0	0.07	0.11
California spotted owl	<i>Strix occidentalis occidentalis</i>	FS, SSC	0	0	1.51	0	0	0	0	0	0	0	0	0	0	0.07	0.11
Long-eared owl	<i>Asio otus</i>	SSC	58.41	0.07	5.95	0	0	0	0.12	0	0	5.78	0	21.65	0	0.07	1.57
Short-eared owl	<i>Asio flammeus</i>	SSC	52.73	0.02	2.59	8.52	0	0	0.12	0.03	0	5.37	0	0	0.06	0	0.39
Olive-sided flycatcher	<i>Contopus cooperi</i>	SSC	0	0.07	0	0	0	0	0.12	0	0	5.56	0	0	0	0.07	0
Purple martin	<i>Progne subis</i>	SSC	3.76	0	2.00	0	0	0	0	0.03	0	0	0	0	0	0.07	0.49
San Diego cactus wren	<i>Campylorhynchus brunneicapillus sandiegensis</i>	FS, SSC	0	0	0	0.55	0	0	0	0	0	0	0	0	0	0	0

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Common yellowthroat	<i>Cistothorus palustris</i>	SSC	0	0	0	0	0	0	0	0.40	0	0	0.03	0	0	0	1.85
Loggerhead shrike	<i>Lanius ludovicianus</i>	SSC	67.47	0.07	6.36	22.67	2.64	0.29	0.77	0	0	6.57	0.03	0	0.06	0	1.85
Yellow warbler	<i>Setophaga petechia</i>	SSC	0	0.07	6.36	22.67	2.64	0.29	0.77	0	0	6.57	0.03	0	0	0.07	1.85
Yellow-breasted chat	<i>Icteria virens</i>	SSC	0	0	0	22.35	0	0	0	0	0	0	0.03	0	0	0	1.85
Savannah sparrow	<i>Passerculus sandwichensis</i>	SE	67.47	0.07	6.36	22.67	2.64	0.29	0.77	0	0	6.57	0	22.70	0.06	0	1.85
Bryant's savannah sparrow	<i>Passerculus sandwichensis alaudinus</i>	SSC	48.47	0	0	0	0	0	0	0	0	0	0	15.12	0	0	0
Grasshopper sparrow	<i>Ammodramus savannarum</i>	SSC	64.47	0	0	0	0	0	0.12	0	0	0	0	0	0	0	0
Tricolored blackbird	<i>Agelaius tricolor</i>	FS, ST	63.86	0	0	0	2.45	0	0.65	0.37	0	0	0	0	0.06	0	1.48
Clapper rail	<i>Rallus obsoletus [longirostris]^c</i>	FE, SE	0	0	0	0	0	0	0	0	0.20	0	0	0	0	0	0
Light-footed clapper rail	<i>Rallus obsoletus [longirostris] levipes^c</i>	FE, SE	0	0	0	0	0	0	0	0	0.20	0	0	0	0	0	0
Oregon vesper sparrow	<i>Poocetes gramineus affinis</i>	SSC	0.47	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SSC	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mammals	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Ornate shrew	<i>Sorex ornatus</i>	SSC	67.47	0	6.36	22.67	0	0	0.77	0.40	0	6.57	0.03	0	0.06	0.07	1.85
Spotted bat	<i>Euderma maculatum</i>	FS, SSC	2.87	0	0.26	2.86	0	0.05	0.48	0	0	0	0.03	0	0	0	0.07
Yuma myotis	<i>Myotis yumanensis</i>	FS	67.47	0.07	6.36	22.67	2.64	0.29	0.77	0.40	0.66	6.57	0.03	22.70	0.06	0.07	1.85
Long-eared myotis	<i>Myotis evotis</i>	FS	0	0.07	6.36	22.67	2.64	0.29	0.77	0.40	0.66	6.57	0.03	22.70	0.06	0.07	1.85
Fringed myotis	<i>Myotis thysanodes</i>	FS	67.47	0.07	6.36	22.67	0	0.29	0.77	0	0.66	6.57	0.03	22.70	0.06	0.07	1.85
Small-footed myotis	<i>Myotis ciliolabrum</i>	FS	67.47	0.07	6.36	22.67	2.64	0	0.77	0.40	0.66	6.57	0.03	22.70	0.06	0.07	1.85
Western red bat	<i>Lasiurus blossevillei</i>	SSC	67.47	0.07	6.36	22.67	0	0	0.77	0.40	0.66	6.57	0.03	22.70	0.06	0.07	1.85
Western yellow bat	<i>Lasiurus xanthinus</i>	SSC	0	0	0.10	0	0	0.05	0	0	0	0	0	0	0	0	0.25
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	FS, SSC	67.47	0.07	6.36	22.67	2.64	0.29	0.77	0	0	6.57	0.03	22.70	0.06	0.07	1.85

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Pallid bat	<i>Antrozous pallidus</i>	FS, SSC	67.47	0.07	6.36	22.67	2.64	0.29	0.77	0	0	6.57	0.03	22.70	0.06	0.07	1.85
Western mastiff bat	<i>Eumops perotis</i>	FS, SSC	67.47	0.07	6.36	22.67	2.64	0.29	0.77	0.40	0	6.57	0.03	22.70	0.06	0	1.85
Black-tailed jackrabbit	<i>Lepus californicus</i>	SSC	67.47	0.07	6.36	22.67	2.64	0.29	0.77	0	0	6.57	0.03	22.70	0.06	0.07	1.85
California pocket mouse	<i>Chaetodipus californicus</i>	SSC	67.47	0.07	6.36	22.67	0	0	0.77	0	0	6.57	0	0	0	0	0
Desert woodrat	<i>Neotoma lepida</i>	SSC	0	0.07	0	22.67	0	0.29	0	0	0	6.57	0	0	0	0	0
California vole	<i>Microtus californicus</i>	SSC	67.47	0	6.36	22.67	2.64	0	0.77	0.40	0	6.57	0.03	22.70	0.06	0.07	1.85
Ringtail	<i>Bassariscus astutus</i>	SFP	67.47	0.07	6.36	22.67	0	0.29	0.77	0	0	6.57	0.03	22.70	0.06	0.07	1.85
American badger	<i>Taxidea taxus</i>	SSC	67.47	0.07	6.36	22.67	2.64	0.29	0.77	0	0	6.57	0.03	22.70	0.06	0.07	1.85
Little pocket mouse	<i>Perognathus longimembris</i>	SSC	0	0	0.10	1.34	0	0.05	0	0	0	0.49	0	0	0	0	0
San Diego pocket mouse	<i>Chaetodipus fallax</i>	SSC	0.47	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0
Stephens' kangaroo rat	<i>Dipodomys stephensi</i>	FE, ST	0.47	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0
Southern grasshopper mouse	<i>Onychomys torridus</i>	SSC	9.25	0	0	1.34	0	0.05	0	0	0	0.55	0.03	0	0	0	0.25
Bighorn sheep	<i>Ovis canadensis</i>	FS, SFP	0	0	0	0	0	0.05	0	0	0	0	0	0	0	0	0

Notes: FE = federal endangered, FT = federal threatened, SE = state endangered

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5.2.2. Estimated Aquatic Resource Impacts

Below, estimated aquatic resource impacts are presented by HUC-8 sub-basin within the Southern California Coast portion of the GAI. Aquatic resources impacts are categorized as potential impacts on threatened and endangered fish, wetlands, and non-wetland waters. Coastal wetlands, coastal non-wetland waters, and riparian habitat are also discussed.

Estimated Impacts on Threatened and Endangered Fish Species

Water resources are mapped in Appendix H. All impacts to threatened and endangered fish species that may occur in the GAI were analyzed. Using the methods described in Section 5.1.1, impacts on threatened and endangered fish habitat were estimated for the transportation projects listed in Table 5-1. Results for all Caltrans Districts overlapping the GAI are provided in Table 5-4. Of the 102 SHOPP transportation projects evaluated in the Southern California Coast ecoregion, 22 would result in impacts on approximately 2.5 acres of steelhead habitat, 0.5 acre of tidewater goby habitat, and 2.8 acres of unarmored threespine stickleback habitat for projects in sub-basins within the GAI (Table 5-9; Caltrans 2021b). For example, within the Santa Barbara Coastal Sub-basins, 12 projects are anticipated to impact 1.6 acres of steelhead habitat, 0.4 acres of tidewater goby habitat, and 2.5 acres of unarmored threespine stickleback habitat in the Southern California Coast Ecoregion.

Table 5-9. Southern California Coast Ecoregion Summary of Estimated SHOPP Impacts on Threatened and Endangered Fish in the GAI (All Caltrans Districts; in acres)

Caltrans District	Sub-basin (HUC-8)	Number of Transportation Projects	Steelhead – Southern California DPS – FE	Tidewater Goby – FE	Unarmored Threespine Stickleback – FE, SE
7	Calleguas	1	0.7	0	0
7	Santa Clara	1	<0.1	0	<0.1
7	Santa Monica Bay	2	0.1	0.1	0
7	Ventura	1	<0.1	0	0
7, 12	San Gabriel	1	0	0	0
12	Newport Bay	1	0	0	<0.1
5	San Antonio	2	0	0	0.2
5	Santa Barbara Coastal	12	1.6	0.4	2.5
5	Santa Ynez	2	0.1	0	0
5, 7, 8, 12 (all Districts)	N/A	22^a	2.5^a	0.5^a	2.8^a

Notes: FE = federal endangered, FT = federal threatened, N/A = not applicable, SE = state endangered

^a Totals may not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one sub-basin.

Estimated Impacts to Wetlands

Wetland resources are mapped in Appendix H. Using the methods described in Section 5.1.1, impacts on wetlands were estimated for the transportation projects listed in Table 5-1. Of the 102 SHOPP transportation projects evaluated in the Southern California Coast Ecoregion portion of the GAI, 56 would result in impacts on 2.9 acres of wetland habitat (Table 5-10; Caltrans 2021b). For example, there is a total of 0.4 acre of impacts on wetlands in the Los Angeles Sub-basin, which includes 0.4 acre of impacts on freshwater emergent wetland and <0.1 acre of impacts on freshwater forested/shrub wetland from a total of 7 projects.

Note the SAMNA's wetland layers provide output that appears similar to its terrestrial output, in that the results are provided in terms of wetland habitat. Wetland forecasts based on the SAMNA's wetland layer, however, are considered more certain than wetland habitat forecasts based on the SAMNA's terrestrial habitat layers; hence, the wetland estimates below are based solely on the SAMNA's wetland data layer (Caltrans 2021b).

Estimated Impacts to Coastal Wetlands

As pointed out in Section 2.17.2, Caltrans did not find any coastal wetland spatial data for the GAI. Further, no species or other element from the SAMNA data layers was found to be a suitable proxy for coastal wetlands. Nevertheless, for the purposes of this RAMNA, it is assumed that wetland impacts forecast within the coastal zone would be evaluated under the CCC's coastal wetland impact standards (Table 5-11). Hence, within the coastal zone, estimated impacts on coastal wetlands include 2.0 acres of impacts on seven wetland types from a total of 17 projects within the GAI. As an example, within the Santa Monica Sub-basin, 7 projects are anticipated to affect 0.5 acre of estuarine and marine wetland habitat, <0.1 acre of estuarine saline natural intertidal non-vegetated habitat, <0.1 acre of estuarine saline natural subtidal non-vegetated habitat, <0.1 acre of estuarine saline unnatural intertidal emergent habitat, and 0.1 acre of freshwater forested/shrub wetland habitat.

As pointed out in Section 2.17.2, CCC would likely identify as present more coastal wetlands than included in the SAMNA's wetland layer, which is based on the National Wetland Inventory. Consequently, it is possible that forecasts presented in Table 5-11 are underestimates.

Estimated Impacts to Non-wetland Waters

Non-wetland water resources are mapped in Appendix H. Using the methods described in Section 5.1.1, impacts on non-wetland waters were estimated for the transportation projects listed in Table 5-1. Of the 102 SHOPP transportation projects evaluated in the Southern California Coast ecoregion portion of the GAI, 57 would result in impacts on 8.6 acres within four types of non-wetland waters within the GAI (Caltrans 2021b).

Estimated Impacts to Coastal Non-wetland Waters

Estimated impacts on non-wetland waters from planned SHOPP transportation projects within the GAI that are located in the coastal zone and under the jurisdiction of the CCC

are shown in Table 5-12. A total of 2.8 acres of impact on non-wetland waters in the coastal zone is anticipated from 18 projects in five sub-basins within the GAI (Table 5-13). For example, five projects within the coastal zone are anticipated to have impacts on 0.4 acre of stream/river habitat in the Santa Monica Bay Sub-basin.

Estimated Impacts to Riparian Habitat

For this assessment, riparian habitat was considered any of the following CWHR types: montane riparian and valley foothill riparian. Estimated impacts on riparian habitat from planned SHOPP transportation projects within the Southern California Coast ecoregion portion of the GAI are shown in Table 5-14. A total of 1.9 acres of impact on riparian habitat is anticipated from nine projects in five sub-basins within the GAI (Table 5-14). For example, two projects within the coastal zone are anticipated to have impacts on 0.4 acre of riparian habitat in Santa Barbara Coastal Sub-basin.

Estimated Impacts to Coastal Riparian Habitat

For this assessment, riparian habitat was considered any of the following CWHR types: montane riparian and valley foothill riparian. Estimated impacts on riparian habitat from planned SHOPP transportation projects within the GAI that are located in the coastal zone and under the jurisdiction of the CCC are shown in Table 5-15. A total of 0.2 acre of impact on riparian habitat in the coastal zone is anticipated from two projects in sub-basins within the GAI (Table 5-15). For example, one project within the coastal zone is anticipated to have impacts on 0.2 acre of riparian habitat in Santa Barbara Sub-basin.

Table 5-10. Southern California Coast Ecoregion Summary of Estimated SHOPP Impacts on Wetlands in the GAI (All Caltrans Districts; in acres)

Sub-basin (HUC-8)	Caltrans District	Number of Transportation Projects	Depressional Seasonal Unnatural Emergent	Depressional Seasonal Unnatural Shrub-Scrub	Estuarine and Marine Wetland	Estuarine Saline Natural Intertidal Non-vegetated	Estuarine Saline Natural Subtidal Non-Vegetated	Estuarine Saline Natural Subtidal Vegetated	Estuarine Saline Unnatural Intertidal Emergent	Freshwater Emergent Wetland	Freshwater Forested/ Shrub Wetland	Estimated Wetland Impact ^a
Calleguas	7	4	0	0	0.8	0	0	0	<0.1	0	0.1	0.9
Los Angeles ^b	7	12	0	0	0	0	0	0	0	0.4	<0.1	0.4
Newport Bay	12	7	<0.1	<0.1	0	0	0	0	0	0	0	<0.1
San Antonio	5	2	0	0	0	0	0	0	0	0	0	0
San Gabriel ^b	7, 12	4	0	0	0	0	0	0	0	<0.1	0	<0.1
Santa Ana ^b	12	1	0	0	0	0	0	0	0	0	<0.1	<0.1
Santa Barbara Coastal	5	13	0	0	0.3	0	0	0	0	0.1	0.2	0.6
Santa Clara ^b	7	2	0	0	0	0	0	0	0	0	0.1	0.1
Santa Maria	5	2	0	0	0	0	0	0	0	0.1	<0.1	0.1
Santa Monica Bay	7	7	0	0	0.5	<0.1	<0.1	<0.1	0	0	0.2	0.7

Sub-basin (HUC-8)	Caltrans District	Number of Transportation Projects	Depressional Seasonal Unnatural Emergent	Depressional Seasonal Unnatural Shrub-Scrub	Estuarine and Marine Wetland	Estuarine Saline Natural Intertidal Non-vegetated	Estuarine Saline Natural Subtidal Non-vegetated	Estuarine Saline Natural Subtidal Vegetated	Estuarine Saline Unnatural Intertidal Emergent	Freshwater Emergent Wetland	Freshwater Forested/ Shrub Wetland	Estimated Wetland Impact ^a
Santa Ynez	5	6	0	0	0	0	0	0	0	0.1	0.1	0.2
Ventura ^b	7	3	0	0	0	0	0	0	0	<0.1	<0.1	<0.1
Total	N/A	56^c	<0.1	<0.1	1.6	<0.1	<0.1	<0.1	<0.1	0.6	0.7	2.9

Note: N/A = not applicable

^a Totals may be different due to rounding errors.

^b Sub-basin spans both ecoregion sections in the GAI.

^c Totals may not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one sub-basin; many are not forecast to affect non-wetland waters.

Table 5-11. Southern California Coast Ecoregion Summary of Estimated SHOPP Impacts on Wetlands in the GAI's Coastal Zone (All Caltrans Districts; in acres)

Sub-basin (HUC-8)	Caltrans District	Number of Transportation Projects	Estuarine and Marine Wetland	Estuarine Saline Natural Intertidal Non-vegetated	Estuarine Saline Natural Subtidal Non-vegetated	Estuarine Saline Natural Subtidal Vegetated	Estuarine Saline Unnatural Intertidal Emergent	Freshwater Emergent Wetland	Freshwater Forested/Shrub Wetland	Estimated Wetland Impact ^a
Calleguas	7	1	0.8	0	0	0	<0.1	0	0	0.8
Los Angeles ^b	7	1	0	0	0	0	0	<0.1	0	<0.1
San Gabriel ^b	7, 12	2	0	0	0	0	0	<0.1	0	<0.1
Santa Barbara Coastal	5	8	0.3	0	0	0	0	0.1	0.1	0.4
Santa Monica Bay	7	5	0.5	<0.1	<0.1	<0.1	0	0	0.1	0.7
Total	N/A	17^c	1.6	<0.1	<0.1	<0.1	<0.1	0.2	0.2	2.0

Note: N/A = not applicable

^a Totals may be different due to rounding errors.

^b Sub-basin spans both ecoregion sections in the GAI.

^c Totals may not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one sub-basin; many are not forecast to affect non-wetland waters.

Table 5-12. Southern California Coast Ecoregion Summary of Estimated SHOPP Impacts on Non-wetland Waters in the GAI (All Caltrans Districts; in acres)

Sub-basin (HUC-8)	Caltrans District	Number of Transportation Projects	Canal/Ditch	Lake/Pond	Stream/River	Wash	Estimated Non-wetland Water Impact ^a
Calleguas	7	4	<0.1	0	0.8	0	0.8
Los Angeles ^b	7	14	0.5	0	1.3	0	1.8
Newport Bay	12	7	0.3	0	0.7	0	1.0
San Antonio	5	2	0	0	0.2	0	0.2
San Gabriel ^b	7, 12	2	<0.1	0	0.3	0	0.3
Santa Ana ^b	7, 8, 12	1	0	0	<0.1	0	<0.1
Santa Barbara Coastal	5	12	0	0	2.1	0	2.3
Santa Clara ^b	7	1	0	0	<0.1	0	<0.1
Santa Maria	5	3	0	<0.1	0.6	0	0.6
Santa Monica Bay	7	7	0	0	0.4	0	0.4
Santa Ynez	5	6	0	0	0.7	0.3	1.0
Ventura ^b	7	3	0	0	0.2	0	0.2
Total	N/A	57^c	0.9	<0.1	7.3	0.3	8.6

Note: N/A = not applicable

^a Totals may be different due to rounding errors.

^b Sub-basin spans both ecoregion sections in the GAI.

^c Totals may not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one sub-basin; many are not forecast to affect non-wetland waters.

Table 5-13. Southern California Coast Ecoregion Summary of Estimated SHOPP Impacts on Non-wetland Waters in GAI's Coastal Zone (All Caltrans Districts; in acres)

Sub-basin (HUC-8)	Caltrans District	Number of Transportation Projects	Canal/Ditch	Lake/Pond	Stream/River	Wash	Estimated Non-wetland Water Impact ^a
Calleguas	7	1	0	0	0.7	0	0.7
San Gabriel ^b	7, 12	4	0	0	0.3	0	0.3
Santa Barbara Coastal	5	6	0	0	1.1	0	1.1
Santa Monica Bay	7	5	0	0	0.4	0	0.4
Ventura ^b	7	2	0	0	0.1	0	0.1
Total	N/A	18^c	0	0	2.6^c	0	2.8^c

Note: N/A = not applicable

^a Totals may be different due to rounding errors.

^b Sub-basin spans both ecoregion sections in the GAI.

^c Totals may not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one sub-basin; many are not forecast to affect non-wetland waters.

Table 5-14. Southern California Coast Ecoregion Summary of Estimated SHOPP Impacts on Riparian Habitat in GAI (All Caltrans Districts; in acres)

Sub-basin (HUC-8)	Caltrans District	Number of Transportation Projects	Montane Riparian	Valley Foothill Riparian	Estimated Riparian Impact ^a
Los Angeles	7	2	0	0.3	0.3
Santa Ana	12	1	<0.1	0	<0.1
Santa Barbara Coastal	5	2	0	0.4	0.4
Santa Monica Bay	7	1	0	<0.1	<0.1
Santa Ynez	5	3	0	1.2	1.2
Total	N/A	9	<0.1	1.9	1.9

Note: N/A = not applicable

Table 5-15. Southern California Coast Ecoregion Summary of Estimated SHOPP Impacts on Riparian Habitat in GAI's Coastal Zone (All Caltrans Districts; in acres)

Sub-basin (HUC-8)	Caltrans District	Number of Transportation Projects	Montane Riparian	Valley Foothill Riparian	Estimated Riparian Impact ^a
Los Angeles	7	0	0	0	0
Santa Ana	12	0	0	0	0
Santa Barbara Coastal	5	1	0	0.2	0.2
Santa Monica Bay	7	1	0	<0.1	<0.1
Santa Ynez	5	0	0	0	0
Total	N/A	2	0	0.2	0.2

5.3 Southern California Mountains and Valleys Ecoregion Section

The quantitative results provided in this document are pursuant to the SAMNA model. Specific wildlife and aquatic resource impacts will be assessed as part of each transportation project's environmental studies.

5.3.1. Estimated Wildlife Impacts

The special-status terrestrial plant and wildlife species evaluated through the SAMNA consisted of federal and state threatened, endangered, or sensitive species; state fully protected or rare species; or state species of special concern. Based on a search of the species-attributed vegetation layer, 107 special-status terrestrial species are known to occur or have the potential to occur in the portion of the GAI that lies within the Southern California Mountains and Valleys ecoregion (Section 2.8; Appendix E, Table E-2; Caltrans 2021b).

Using the methods described in Section 5.1.1, the SAMNA analysis determined that 33 SHOPP transportation projects could potentially affect 19 habitat types, which could support up to 106 special-status species within the Southern California Mountains and Valleys ecoregion portion of the GAI (Appendix E, Table E-2; Table 5-16). Complete terrestrial species SAMNA results for the 33 transportation projects planned within the Southern California Mountains and Valleys ecoregion portion of the GAI are provided in Table E-2 of Appendix E.

**Table 5-16. Summary of Estimated SHOPP Impacts on Special-status Species
Habitat: Southern California Mountains and Valleys Ecoregion Section**

Caltrans District(s)	Number of Caltrans SHOPP Projects ^a	Number of Habitats	Special-status Species ^b	Estimated Habitat Impact (acres)
5	0	0	0	0.0
7	17	18	89	14.8
8	14	8	89	20.2
11	1	2	53	0.1
12	2	5	70	6.6
5, 7, 8, 11, 12 (all Districts)	33^{a,c}	19^d	107^{b,d}	41.7

^a Transportation projects are listed in Table 5-1.

^b Special-status terrestrial plant and wildlife species evaluated through the SAMNA consisted of federal and state threatened, endangered, or sensitive species; state fully protected or rare species; or state species of special concern.

^c Totals may not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one District.

^d Totals may not reflect numbers presented in rows above. Some habitat types and special status species are found in more than one District.

Estimated Impacts to Species of Mitigation Need

As described in Section 1.5, to focus the assessment, Caltrans District 7 identified species of mitigation need, for which results are provided below. Species of mitigation need are species for which a high probability of compensatory mitigation need is anticipated and each is discussed briefly in the subsections below:

- **Coastal California Gnatcatcher.** The SAMNA estimated that 29.1 acre of coastal California gnatcatcher habitat may be affected by 25 Caltrans SHOPP projects planned for the Southern California Mountains and Valleys ecoregion portion of the GAI (Caltrans 2021b).
- **California Red-legged Frog.** The SAMNA estimated that 10.5 acres of California red-legged frog habitat may be affected by 17 Caltrans SHOPP projects planned for the Southern California Mountains and Valleys ecoregion portion of the GAI (Caltrans 2021b).
- **Least Bell's vireo.** The SAMNA, modified to incorporate species distribution data provided by FWS, estimated that 1.2 acres of Least Bell's Vireo habitat may be affected by 10 Caltrans SHOPP projects planned for the Southern California Mountains and Valleys ecoregion portion of the GAI (Caltrans 2021b; FWS 2021a).
- **Mountain Lion.** The SAMNA estimated that 12 acres of mountain lion habitat may be affected by 17 Caltrans SHOPP projects planned for the Caltrans District 7 portion of the Southern California Mountains and Valleys ecoregion in the GAI (Caltrans 2021b).
- **Southwestern willow flycatcher.** The SAMNA, modified to incorporate species distribution data provided by FWS, estimated that 1.9 acres of Southwestern willow flycatcher habitat may be affected by 10 Caltrans SHOPP projects planned for the Southern California Mountains and Valleys ecoregion portion of the GAI (Caltrans 2021b; FWS 2021b).

Results are tabulated in Table 5-17.

Estimated Impacts to Other Special-status Species

As discussed further in Chapter 9, during advance mitigation project scoping, consideration will also be given to additional special-status species that the SAMNA identified as co-occurring with the species of mitigation need, because they could potentially be affected by the same habitat impacts that affect the species of mitigation need. The above-listed species of mitigation need co-occur with other protected plant, invertebrate, amphibian, reptile, bird, and mammal species in 19 habitats within the Southern California Mountains and Valleys ecoregion portion of the GAI. Using the methods described in Section 5.1.1, the SAMNA forecast impacts on an additional 90 special-status terrestrial species that potentially use the same habitats as the species of mitigation need in the GAI (Table 5-18).

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Table 5-17. Estimated SHOPP Impacts on Species of Mitigation Need: Southern California Mountains and Valleys Ecoregion Section (All Caltrans Districts; in acres)

Caltrans District(s)	Coastal California Gnatcatcher: Number of Caltrans SHOPP Projects	Coastal California Gnatcatcher: Estimated Habitat Impact (acres)	California Red-legged Frog: Number of Caltrans SHOPP Projects	California Red-legged Frog: Estimated Habitat Impact (acres)	Least Bell's Vireo: Number of Caltrans SHOPP Projects	Least Bell's Vireo: Estimated Riparian Habitat Impact (acres)	Mountain Lion: Number of Caltrans SHOPP Projects	Mountain Lion: Estimated Habitat Impact (acres)	Southwestern Willow Flycatcher: Number of Caltrans SHOPP Projects	Southwestern Willow Flycatcher: Estimated Habitat Impact (acres)
5	0	0	0	0	0	0	0	0	0	0
7	14	8.1	17	10.5	6	0.8	17	12.0	5	0.8
8	8	18.6	12	19.5	3	0.4	12	19.9	3	0.4
11	1	0.1	1	0.1	1	<0.1	1	0.1	1	<0.1
12	2	2.4	2	6.7	0	0	2	6.7	1	0.7
5, 7, 8, 11, 12 (all Districts)	25 ^a	29.1	31 ^a	36.8	10 ^a	1.2	31 ^a	38.7	10 ^a	1.9

^a Totals may not reflect numbers presented in rows above. Some SHOPP transportation projects and some habitats cross more than one subsection.

Table 5-18. Estimated SHOPP Impacts for Co-occurring Special-status Species: Southern California Mountains and Valleys Ecoregion Section (acres)

Common Name	Scientific Name	Status	Annual Grassland	Chamise- Redshank Chaparral	Coastal Oak Woodland	Coastal Scrub	Desert Wash	Eastside Pine	Fresh Emergent Wetland	Jeffrey Pine	Lacustrine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hardwood- Conifer	Pasture	Pinyon- Juniper	Sagebrush	Sierran Mixed Conifer	Valley Foothill Riparian
Not applicable	Not Applicable	Total	3.07	0.15	4.55	8.99	0.52	0.13	0.04	0.04	0.03	17.43	0.25	0.50	0.24	0.26	0.02	0.24	0.38	1.98
Species of Mitigation Need	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Coastal California gnatcatcher	<i>Polioptila californica</i>	FT, SSC	2.72	0.15	3.92	7.75	0	0	0	0	0	13.07	0	0	0	0	0	0	0	1.52
California red- legged frog	<i>Rana draytonii</i>	FT, SSC	3.07	0	4.55	8.99	0	0	0.04	0	0.03	17.43	0	0.50	0.24	0	0	0	0	1.98
Least Bell's vireo	<i>Vireo bellii pusillus</i>	FE, SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.22
Mountain lion	<i>Puma concolor</i>	ST	3.07	0.15	4.55	8.99	0.52	0.13	0	0.04	0	17.43	0.25	0.50	0.24	0.26	0.02	0.24	0.38	1.98
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	FE, SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.93
Plants	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Braunton's milk- vetch	<i>Astragalus brauntonii</i>	FE	3.03	0	0	8.99	0	0	0	0	0	17.06	0	0	0	0	0	0	0	0
San Jacinto Valley crownscale	<i>Atriplex coronata</i> var. <i>notatior</i>	FE	1.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nevin's barberry	<i>Berberis nevinii</i>	FE, SE	0	0	0	8.99	0	0	0	0	0	17.43	0	0	0	0	0	0	0	0
Thread-leaved brodiaea	<i>Brodiaea filifolia</i>	FT, SE	1.66	0	0	7.02	0	0	0	0	0	13.37	0	0	0	0	0	0	0	0
Dunn's mariposa lily	<i>Calochortus dunnii</i>	FS, SR	0.81	0	0	0	0	0	0	0	0	12.91	0	0	0	0	0	0	0	0
Ash-gray paintbrush	<i>Castilleja cinerea</i>	FT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mt. Gleason paintbrush	<i>Castilleja gleasoni</i>	FS, SR	0	0	0	0	0	0	0	0	0	1.45	0	0	0.24	0	0	0	0	0
Vail Lake ceanothus	<i>Ceanothus ophiochilus</i>	FT, SE	0	0	0	0	0	0	0	0	0	12.91	0	0	0	0	0	0	0	0
California jewelflower	<i>Caulanthus californicus</i>	FE, SE	1.41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Common Name	Scientific Name	Status	Annual Grassland	Chamise- Redshank Chaparral	Coastal Oak Woodland	Coastal Scrub	Desert Wash	Eastside Pine	Fresh Emergent Wetland	Jeffrey Pine	Lacustrine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hardwood- Conifer	Pasture	Pinyon- Juniper	Sagebrush	Sierran Mixed Conifer	Valley Foothill Riparian
San Fernando valley spineflower	<i>Chorizanthe parryi</i> var. <i>fernandina</i>	FS, SE	1.41	0	0	1.62	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Susana tarplant	<i>Deinandra minthornii</i>	SR	0	0	0	1.62	0	0	0	0	0	2.61	0	0	0	0	0	0	0	0
Slender-horned spineflower	<i>Dodecahema leptoceras</i>	FE, SE	0	0	0	8.99	0	0	0	0	0	17.43	0	0	0	0	0	0	0	0
Santa Monica dudleya	<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>	FT	0	0	0	1.62	0	0	0	0	0	2.61	0	0	0	0	0	0	0	0
Conejo dudleya	<i>Dudleya parva</i>	FT	1.41	0	0	1.62	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Ana River woollystar	<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	FE, SE	0	0	0	0.29	0	0	0	0	0	0.10	0	0	0	0	0	0	0	0
Lompoc yerba santa	<i>Eriodictyon capitatum</i>	FE, SR	0	0	0	1.62	0	0	0	0	0	2.61	0	0	0	0	0	0	0	0
Southern mountain buckwheat	<i>Eriogonum kennedyi</i> var. <i>austromontanum</i>	FT	0	0	0	0	0	0	0	0	0	2.97	0	0	0	0	0	0	0	0
San Diego button-celery	<i>Eryngium aristulatum</i> var. <i>parishii</i>	FE, SE	1.62	0	0	7.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mexican flannelbush	<i>Fremontodendron mexicanum</i>	FE, SR	0	0	0	0	0	0	0	0	0	12.91	0	0	0	0	0	0	0	0
Roderick's fritillary	<i>Fritillaria roderickii</i>	SE	3.07	0	0	8.99	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parish's meadowfoam	<i>Limnanthes alba</i> ssp. <i>parishii</i>	FS, SE	0.81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Willow monardella	<i>Monardella viminea</i>	FE, SE	0	0	0	0.29	0	0	0	0	0	0.10	0	0	0	0	0	0	0	0.18
Spreading navarretia	<i>Navarretia fossalis</i>	FT	3.07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
California Orcutt grass	<i>Orcuttia californica</i>	FE, SE	3.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gander's ragwort	<i>Packera ganderi</i>	FS, SR	0	0	0	0	0	0	0	0	0	12.91	0	0	0	0	0	0	0	0
Lyon's pentachaeta	<i>Pentachaeta lyonii</i>	FE, SE	2.46	0	0	1.92	0	0	0	0	0	2.70	0	0	0	0	0	0	0	0

Common Name	Scientific Name	Status	Annual Grassland	Chamise- Redshank Chaparral	Coastal Oak Woodland	Coastal Scrub	Desert Wash	Eastside Pine	Fresh Emergent Wetland	Jeffrey Pine	Lacustrine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hardwood- Conifer	Pasture	Pinyon- Juniper	Sagebrush	Sierran Mixed Conifer	Valley Foothill Riparian
Parish's checkerbloom	<i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	FS, SR	0	0	0	0	0	0	0	0	0	2.97	0	0	0	0	0	0	0	0
Santa Ynez false lupine	<i>Thermopsis macrophylla</i>	FS, SR	0	0	0	0	0	0	0	0	0	2.61	0	0	0	0	0	0	0	0
Invertebrates	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Riverside fairy shrimp	<i>Streptocephalus woottoni</i>	FE	0.35	0	0	3.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delhi sands flower-loving fly	<i>Rhaphiomidas terminatus abdominalis</i>	FE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Amphibians	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Coast range newt [California newt]	<i>Taricha torosa</i>	SSC	0.29	0	4.11	7.26	0	0	0	0	0	14.40	0	0	0.20	0	0	0	0.13	1.18
San Gabriel slender salamander	<i>Batrachoseps gabrieli</i>	FS	0	0	0	0	0	0	0	0	0	0	0	0.49	0.20	0	0	0	0.13	0
Ensatina	<i>Ensatina eschscholtzii</i>	FS	0	0	4.55	8.99	0	0	0	0	0	17.06	0.25	0.50	0.24	0	0	0	0.38	1.98
Western spadefoot	<i>Spea hammondi</i>	FS, SSC	2.74	0.01	1.07	8.23	0	0	0.04	0	0	11.96	0	0	0	0	0	0	0	0
Arroyo toad	<i>Anaxyrus californicus</i>	FE, SSC	0	0	0	0	0.51	0	0	0	0.03	17.28	0	0	0	0	0.02	0	0	1.90
Foothill yellow-legged frog	<i>Rana boylei</i>	FS, SE ^c	0.19	0.14	0.24	0.08	0	0	0	0	0	1.32	0.08	0.39	0.20	0	0	0	0.13	0.65
Southern mountain yellow-legged frog	<i>Rana muscosa</i>	FE, FS, SE	0	0	0	0	0	0	0	0.04	0	0	0	0.49	0.23	0	0	0	0.38	0
Reptiles	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Blainville's horned lizard	<i>Phrynosoma blainvillii</i>	FS, SSC	3.07	0.15	4.55	8.99	0	0	0	0	0	17.43	0	0	0.24	0	0	0	0	1.98
California legless lizard	<i>Anniella pulchra</i>	FS, SSC	0	0.15	4.55	8.99	0.52	0	0	0	0	17.43	0	0	0	0	0	0	0	1.98

Common Name	Scientific Name	Status	Annual Grassland	Chamise- Redshank Chaparral	Coastal Oak Woodland	Coastal Scrub	Desert Wash	Eastside Pine	Fresh Emergent Wetland	Jeffrey Pine	Lacustrine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hardwood- Conifer	Pasture	Pinyon- Juniper	Sagebrush	Sierran Mixed Conifer	Valley Foothill Riparian
Orange-throated whiptail	<i>Aspidoscelis hyperythra</i>	FS	0	0	4.05	6.81	0	0	0	0	0	13.19	0	0	0	0	0	0	0	0
Red diamond rattlesnake	<i>Crotalus ruber</i>	FS, SSC	1.13	0	4.10	6.86	0	0	0	0	0	12.91	0	0	0	0	0	0	0	1.07
Ring-necked snake	<i>Diadophis punctatus</i>	FS	3.07	0.15	4.55	8.99	0	0	0.04	0	0	17.39	0	0.48	0.15	0.26	0	0	0.08	1.98
Western patch-nosed snake	<i>Salvadora hexalepis</i>	SSC	3.07	0.15	4.55	8.99	0.52	0	0	0	0	17.43	0.25	0	0	0	0.02	0.24	0	1.98
Common gartersnake	<i>Thamnophis sirtalis</i>	SSC	2.82	0.15	4.55	8.94	0	0	0.04	0	0.03	16.25	0	0.10	0	0.26	0.02	0.06	0	1.90
Two-striped gartersnake	<i>Thamnophis hammondi</i>	FS, SSC	3.07	0.15	4.55	8.99	0	0	0.04	0.04	0.03	17.43	0.25	0.50	0.24	0	0	0	0	1.98
Birds	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Least bittern	<i>Ixobrychus exilis</i>	SSC	0	0	0	0	0	0	0.04	0	0	0	0	0	0	0	0	0	0	0
Great blue heron	<i>Ardea herodias</i>	SFS	3.07	0	4.55	8.99	0	0.13	0.04	0	0.03	0	0	0.50	0.24	0	0.02	0	0.38	1.98
Great egret	<i>Ardea alba</i>	SFS	2.74	0	4.49	0	0	0	0.04	0	0	0	0	0	0	0	0	0	0	1.72
Redhead	<i>Aythya americana</i>	SSC	0	0	0	0	0	0	0.04	0	0	0	0	0	0	0	0	0	0	0
California condor	<i>Gymnogyps californianus</i>	FE, SE	1.41	0.15	0.39	0.62	0	0	0	0	0.03	2.61	0	0	0	0	0.02	0.06	0	0
Osprey	<i>Pandion haliaetus</i>	SFS	2.74	0	4.55	0	0.52	0.13	0.04	0.04	0	16.16	0.25	0.50	0.24	0	0	0.20	0.38	1.98
White-tailed kite	<i>Elanus leucurus</i>	FS, SFP	3.07	0.15	4.49	8.48	0	0	0.04	0	0	15.88	0	0	0	0	0	0	0	1.72
Bald eagle	<i>Haliaeetus leucocephalus</i>	FS, SE	3.07	0.15	4.55	8.99	0	0.13	0.04	0.04	0.03	17.43	0.25	0.50	0.24	0	0.02	0.24	0.38	1.98
Northern harrier	<i>Circus hudsonius</i> ^c	SSC	3.07	0.15	4.55	8.94	0.47	0.05	0.04	0	0.03	17.21	0	0.11	0.01	0	0.02	0.24	0.15	1.95
Golden eagle	<i>Aquila chrysaetos</i>	FS, SFP	3.07	0.15	4.55	8.99	0.52	0.13	0.04	0.04	0	17.43	0.25	0.50	0.24	0.26	0.02	0.24	0.38	1.98
Peregrine falcon	<i>Falco peregrinus</i>	FS	3.07	0.15	4.55	8.99	0	0.13	0.04	0.04	0.03	17.43	0.25	0.50	0.24	0	0.02	0.24	0.38	1.98
Mountain plover	<i>Charadrius montanus</i>	FS, SSC	0.09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burrowing owl	<i>Athene cunicularia</i>	FS, SSC	0.81	0	0	0.22	0.46	0	0	0	0	0.61	0	0	0	0	0	0	0	0.12

Common Name	Scientific Name	Status	Annual Grassland	Chamise- Redshank Chaparral	Coastal Oak Woodland	Coastal Scrub	Desert Wash	Eastside Pine	Fresh Emergent Wetland	Jeffrey Pine	Lacustrine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hardwood- Conifer	Pasture	Pinyon- Juniper	Sagebrush	Sierran Mixed Conifer	Valley Foothill Riparian
Spotted owl	<i>Strix occidentalis</i>	FT, ST	0	0	0.30	0	0	0.13	0	0.04	0	0	0	0.50	0.24	0	0	0	0.38	0.91
California spotted owl	<i>Strix occidentalis occidentalis</i>	FS, SSC	0	0	0.30	0	0	0.13	0	0.04	0	0	0	0.50	0.24	0	0	0	0.38	0.91
Long-eared owl	<i>Asio otus</i>	SSC	3.07	0.15	4.55	0	0	0.13	0	0	0	17.43	0.25	0.50	0.24	0.26	0	0.24	0.38	1.98
Short-eared owl	<i>Asio flammeus</i>	SSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Olive-sided flycatcher	<i>Contopus cooperi</i>	SSC	0	0.15	0	0	0	0.13	0	0.04	0	5.25	0	0.50	0.24	0	0	0	0.38	0
Purple martin	<i>Progne subis</i>	SSC	1.06	0	4.16	0	0	0	0	0	0	0	0	0.49	0.23	0	0	0	0.22	1.27
San Diego cactus wren	<i>Campylorhynchus brunneicapillus sandiegensis</i>	FS	0	0	0	2.12	0	0	0	0	0	0.27	0	0	0	0	0	0	0	0
Marsh wren	<i>Cistothorus palustris</i>	SSC	0	0	0	0	0	0	0.04	0	0	0	0	0	0	0	0	0	0	1.90
Loggerhead shrike	<i>Lanius ludovicianus</i>	SSC	3.07	0.15	4.55	8.99	0.52	0.13	0	0.04	0	17.43	0	0.50	0.24	0	0.02	0.24	0	1.98
Yellow warbler	<i>Setophaga petechia</i>	SSC	0	0.15	4.55	8.99	0.52	0.13	0	0.04	0	17.43	0.25	0.50	0.24	0	0	0	0.38	1.98
Yellow-breasted chat	<i>Icteria virens</i>	SSC	0	0	0	8.48	0	0	0	0	0	0	0	0	0	0	0	0	0	1.72
Grasshopper sparrow	<i>Ammodramus savannarum</i>	SSC	1.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oregon vesper sparrow	<i>Poocetes gramineus affinis</i>	SSC	1.66	0	4.10	0	0	0	0	0	0	13.27	0	0	0	0	0	0	0	0
Tricolored blackbird	<i>Agelaius tricolor</i>	FS, ST	1.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.07
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SSC	0.56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern goshawk	<i>Accipiter gentilis</i>	FS, SSC	0	0.14	0	0	0	0.13	0	0.04	0	0.36	0.25	0.40	0.24	0	0	0.18	0.38	0.14
Black swift	<i>Cypseloides niger</i>	SSC	0	0	0.06	0	0	0	0	0	0	1.19	0.08	0.49	0.20	0	0	0	0.13	0.18
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	FT, FS, SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07

Common Name	Scientific Name	Status	Annual Grassland	Chamise- Redshank Chaparral	Coastal Oak Woodland	Coastal Scrub	Desert Wash	Eastside Pine	Fresh Emergent Wetland	Jeffrey Pine	Lacustrine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hardwood- Conifer	Pasture	Pinyon- Juniper	Sagebrush	Sierran Mixed Conifer	Valley Foothill Riparian
Mammals	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Ornate shrew	<i>Sorex ornatus</i>	SSC	3.07	0	4.55	8.99	0	0	0.04	0	0	17.43	0.25	0	0.24	0	0	0	0.38	1.98
Yuma myotis	<i>Myotis yumanensis</i>	FS	3.07	0.15	4.55	8.99	0.52	0.13	0.04	0.04	0.03	17.43	0.25	0.50	0.24	0.26	0.02	0.24	0.38	1.98
Long-eared myotis	<i>Myotis evotis</i>	FS	0	0.15	4.55	8.99	0.52	0.13	0.04	0.04	0.03	17.43	0.25	0.50	0.24	0.26	0.02	0.24	0.38	1.98
Fringed myotis	<i>Myotis thysanodes</i>	FS	3.07	0.15	4.55	8.99	0.52	0.13	0	0.04	0.03	17.43	0.25	0.50	0.24	0.26	0.02	0.24	0.38	1.98
Small-footed myotis	<i>Myotis ciliolabrum</i>	FS	3.07	0.15	4.55	8.99	0	0.13	0.04	0.04	0.03	17.43	0.25	0.50	0.24	0.26	0.02	0.24	0.38	1.98
Western red bat	<i>Lasiurus blossevillii</i>	SSC	3.03	0.15	4.49	8.65	0	0	0.04	0	0.03	16.11	0	0	0	0.26	0.02	0	0	1.90
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	FS, SSC	3.07	0.15	4.55	8.99	0.52	0.13	0	0.04	0	17.43	0.25	0.50	0.24	0.26	0.02	0.24	0.38	1.98
Pallid bat	<i>Antrozous pallidus</i>	FS, SSC	3.07	0.15	4.55	8.99	0.52	0.13	0	0.04	0	17.43	0.25	0.50	0.24	0.26	0.02	0.24	0.38	1.98
Pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>	SSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Western mastiff bat	<i>Eumops perotis</i>	FS, SSC	3.07	0.15	4.55	8.99	0.52	0	0.04	0	0	17.43	0.25	0.50	0.24	0.26	0.02	0	0	1.98
Western yellow bat	<i>Lasiurus xanthinus</i>	SSC	0	0	4.16	0	0.51	0	0	0	0	0	0	0	0	0	0	0	0	1.25
Spotted bat	<i>Euderma maculatum</i>	FS, SSC	3.07	0	4.14	6.08	0.52	0.13	0	0.04	0	0	0.25	0	0.24	0	0	0.18	0.38	0.62
Black-tailed jackrabbit	<i>Lepus californicus</i>	SSC	3.07	0.15	4.55	8.99	0.52	0.05	0	0	0	17.41	0.08	0.50	0.21	0.26	0.02	0.24	0.28	1.95
San Bernardino flying squirrel	<i>Glaucomys oregonensis californicus</i>	FS, SSC	0	0	0	0	0	0.10	0	0.02	0	0	0	0	0.04	0	0	0	0.10	0.08
Stephens' kangaroo rat	<i>Dipodomys stephensi</i>	FE, ST	1.66	0	0	6.86	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Bernardino kangaroo rat	<i>Dipodomys merriami parvus</i>	FE, SCE, SSC	0.60	0	0	0	0.44	0	0	0	0	0.36	0	0	0	0	0	0	0	0
Little pocket mouse	<i>Perognathus longimembris</i>	SSC	0	0	0.26	1.50	0.46	0	0	0	0	1.65	0	0	0	0	0	0	0	0
San Joaquin pocket mouse	<i>Perognathus inornatus</i>	FS	0	0	0	0	0	0	0	0	0	0.05	0	0	0	0	0	0	0	0

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San Diego pocket mouse	<i>Chaetodipus fallax</i>	SSC	1.66	0	0	6.86	0.46	0	0	0	0	13.31	0	0	0	0	0	0.18	0	0
California pocket mouse	<i>Chaetodipus californicus</i>	SSC	3.07	0.15	4.55	8.99	0	0	0	0	0	17.43	0.25	0.50	0	0	0	0.24	0	0
Southern grasshopper mouse	<i>Onychomys torridus</i>	SSC	3.07	0	0	8.98	0.52	0	0	0	0	16.31	0	0	0	0	0	0.18	0	1.33
Desert woodrat	<i>Neotoma lepida</i>	SSC	0	0.15	0	8.99	0.52	0	0	0	0	17.43	0.25	0.50	0.24	0	0.02	0.24	0	0
California vole	<i>Microtus californicus</i>	SSC	3.07	0	4.55	8.99	0	0.13	0.04	0	0	17.43	0.25	0.50	0.24	0.26	0	0.24	0.38	1.98
Ringtail	<i>Bassariscus astutus</i>	SFP	3.07	0.15	4.55	8.99	0.52	0.13	0	0.04	0	17.43	0.25	0.50	0.24	0.26	0.02	0.24	0.38	1.98
American badger	<i>Taxidea taxus</i>	SSC	3.07	0.15	4.55	8.99	0.52	0.13	0	0.04	0	17.43	0.25	0.50	0.24	0.26	0.02	0.24	0.38	1.98
Bighorn sheep	<i>Ovis canadensis</i>	FS, SFP	0	0	0	0	0.45	0	0	0	0	0	0	0	0	0	0	0	0	0

5.3.2. Estimated Aquatic Resources Impacts

Estimated aquatic resource impacts are HUC-8 sub-basins within the Southern California Mountains and Valleys portion of the GAI that may potentially experience impacts on aquatic resources. Aquatic resources impacts are categorized as potential impacts on threatened and endangered fish, wetlands, and non-wetland waters. Riparian habitat impacts are also discussed. The Southern California Mountains and Valleys ecoregion is outside the coastal zone and, therefore, no impacts on coastal wetlands or non-wetland waters would occur in this ecoregion.

Estimated Impacts to Special-status Fish Species

Water resources are mapped in Appendix H. All impacts on threatened and endangered fish species that may occur in the GAI were analyzed. Using the methods described in Section 5.1.1, impacts on fish habitat were estimated for the transportation projects listed in Table 5-2 and are provided in Table 5-19. For example, within the San Gabriel Sub-basin, 0.6 acre of impacts on Mohave tui chub habitat and <0.1 acre of impacts on Santa Ana sucker would occur.

Table 5-19. Southern California Mountains and Valleys Ecoregion Summary of Estimated SHOPP Impacts on Threatened and Endangered Fish in the GAI (All Caltrans Districts; in acres)

Caltrans District	Sub-basin (HUC-8)	Number of Transportation Projects	Mohave Tui Chub – FE, SE	Santa Ana Sucker – FT	Steelhead – Southern California DPS – FE	Unarmored Threespine Stickleback – FE, SE
7	Santa Clara ^a	3	0	0	0.2	0.3
7	Ventura ^a	3	0	0	0.2	0
7	Santa Clara ^a	3	0	0	0.2	0.3
7, 8	Santa Ana ^a	5	0	0	0	0.6
7, 12	San Gabriel ^a	3	0.3	0.1	0	0
7, 8, 12	N/A	13^b	0.3	0.1	0.4	0.8

Notes: FE = federal endangered, FT = federal threatened, N/A = not applicable, SE = state endangered

^a Sub-basin spans both ecoregion sections in the GAI.

^b Totals may not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one sub-basin; many are not forecast to affect wetlands.

Estimated Impacts to Wetlands

Wetland resources are mapped in Appendix H. Using the methods described in Section 5.1.1, impacts on wetlands within the Southern California Mountains and Valleys ecoregion portion of the GAI were estimated for the transportation projects listed in

Table 5-2, and are provided in Table 5-20. For example, there is a total of 0.2 acre of impacts on wetlands in the Santa Clara Sub-basin, which includes <0.1 acre of impacts on freshwater forested/shrub wetland, and 1 acre of impacts on riverine habitat.

Note the SAMNA's wetland layers provide output that appears similar to its terrestrial output, in that the results are provided in terms of wetland habitat. Wetland forecasts based on the SAMNA's wetland layer, however, are considered more certain than wetland habitat forecasts based on the SAMNA's terrestrial habitat layers; hence, the wetland estimates below are based solely on the SAMNA's wetland data layer (Caltrans 2021b).

Estimated Impacts to Non-wetland Waters

Non-wetland water resources are mapped in Appendix H. Using the methods described in Section 5.1.1, impacts on non-wetland waters were estimated for the transportation projects listed in Table 5-2 and are provided in Table 5-21.

Estimated Impacts to Riparian Habitat

For this assessment, riparian habitat was considered any of the following CWHR types: montane riparian and valley foothill riparian. Estimated impacts on riparian habitat from planned SHOPP transportation projects within the GAI are shown in Table 5-22. A total of 2.0 acres of impact on riparian habitat is anticipated from eight projects in seven sub-basins within the GAI. For example, two projects within the Ventura Sub-basin are anticipated to have impacts on 0.2 acre of riparian habitat.

Table 5-20. Southern California Mountains and Valleys Ecoregion Summary of Estimated SHOPP Impacts on Wetlands in the GAI (All Caltrans Districts; in acres)

Caltrans District	Sub-basin (HUC-8)	Number of Transportation Projects	Freshwater Forested/Shrub Wetland	Freshwater Pond	Estimated Wetland Impact ^a
7	Santa Clara ^b	1	<0.1	0	<0.1
7	Ventura ^b	3	<0.1	0	<0.1
7, 8	Mojave	1	0.1	0	0.1
7, 12	San Gabriel ^b	4	0.3	0.1	0.4
8	San Jacinto	1	<0.1	0	<0.1
8	Santa Margarita	1	0.1	0	0.1
8, 12	Aliso–San Onofre ^b	2	<0.1	0	<0.1
5, 7, 8, 11, 12 (all Districts)	N/A	11^c	0.6	0.1	0.7

Note: N/A = not applicable

^a Totals may be different due to rounding errors.

^b Sub-basin spans both ecoregion sections in the GAI.

^c Totals may not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one sub-basin; many are not forecast to affect wetlands.

Table 5-21. Southern California Mountains and Valleys Ecoregion Summary of Estimated SHOPP Impacts on Non-wetland Waters in the GAI (all Caltrans Districts; in acres)

Caltrans District	Sub-basin (HUC-8)	Number of Transportation Projects	Canal/Ditch	Stream/River	Wash	Estimated Non-wetland Water Impact ^a
7	Cuyama	1	0	<0.1	0.1	0.1
7	Santa Clara ^b	3	0	0.3	0	0.3
7	Ventura ^b	3	0	0.3	0	0.3
7, 12	San Gabriel ^b	3	0	0.3	0	0.3
7, 8, 12	Santa Ana ^b	8	0.1	0.6	0	0.7
8	San Jacinto	1	0	0.3	0	0.3
8	Santa Margarita	1	0	0.1	0	0.1
8, 12	Aliso–San Onofre ^b	2	0	1.4	0	1.4
5, 7, 8, 11, 12 (all Districts)	N/A	19^c	0.1	3.2	0.1	3.4

Note: N/A = not applicable

^a Totals may be different due to rounding errors.

^b Sub-basin spans both ecoregion sections in the GAI.

^c Totals may not reflect numbers presented in rows above. Some SHOPP transportation projects cross more than one sub-basin; many are not forecast to affect non-wetland waters.

Table 5-22. Southern California Mountains and Valleys Ecoregion Summary of Estimated SHOPP Impacts on Riparian Habitat in the GAI (all Caltrans Districts; in acres)

Sub-basin (HUC-8)	Caltrans District	Number of Transportation Projects	Montane Riparian	Valley Foothill Riparian	Estimated Riparian Impact ^a
Aliso-San Onofre	12	1	0	0.7	0.7
Mojave	7	1	0	0.1	0.1
San Gabriel	7	1	0	0.2	0.2
San Jacinto	8	1	0	0.3	0.3
Santa Ana	8	1	0	0.1	0.1
Santa Clara	7	2	0	0.5	0.5
Ventura	7	2	0	0.2	0.2
Total	N/A	8^a	0	2.0	2.0

Note: N/A = not applicable

^a Totals may not reflect numbers presented in rows below. Some SHOPP transportation projects cross more than one sub-basin.

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6. BENEFITING TRANSPORTATION PROJECT CONSIDERATIONS

Benefiting transportation projects are transportation projects whose delivery schedules benefit from advance mitigation credits. Potential benefiting transportation projects were identified in Chapter 5 for the purposes of advance mitigation planning and is intended to guide advance mitigation project scoping. Actual benefiting transportation projects will be determined in the future. Caltrans and relevant natural resource regulatory agencies shall evaluate the appropriateness of using advance mitigation credits on a case-by-case basis as part of each future transportation project's permitting and technical assistance processes.

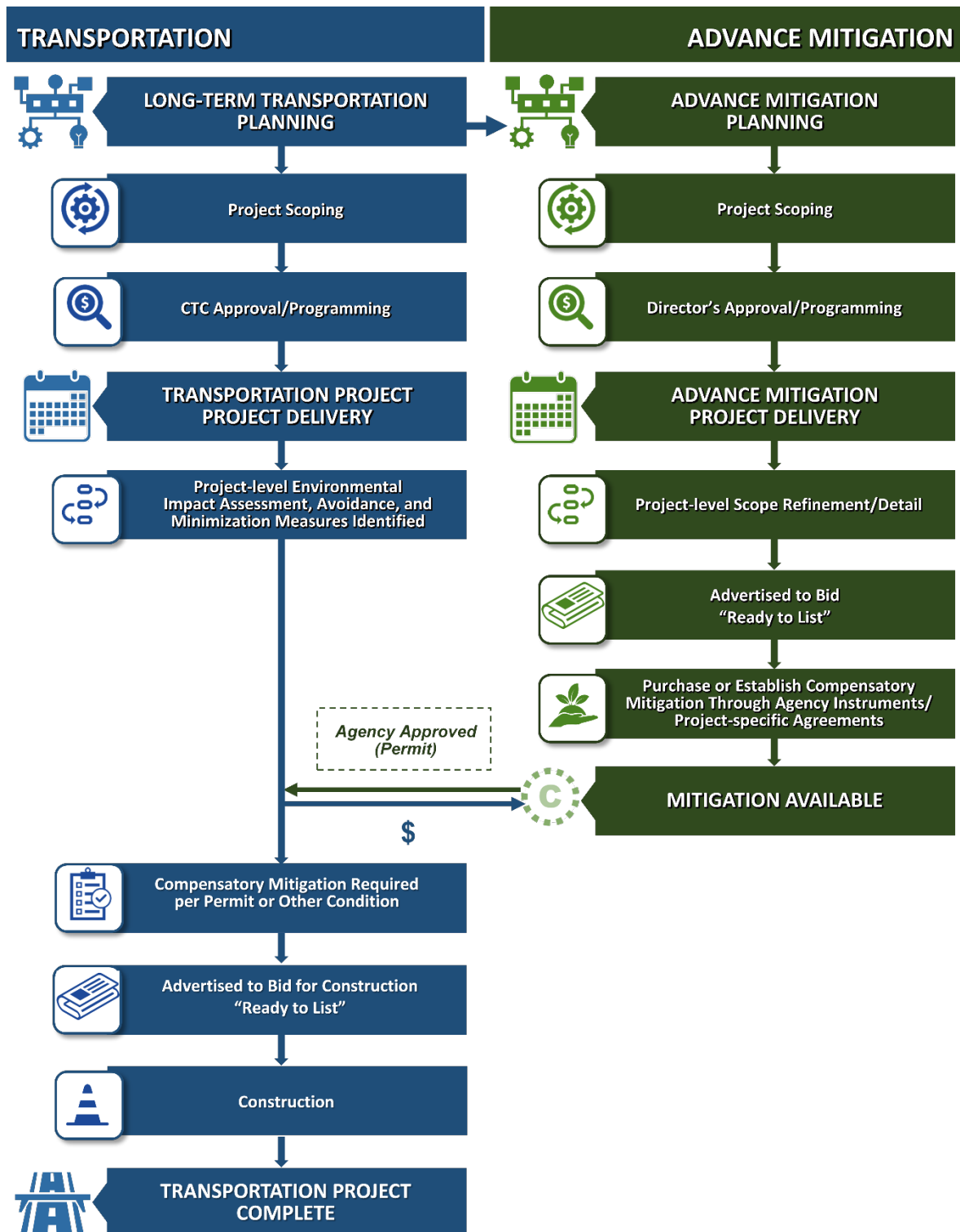
In this chapter, Caltrans summarizes the scheduling considerations and constraints of potential benefiting transportation projects planned for the GAI by assessing the timing of Caltrans' forecast mitigation needs. The potentially benefiting transportation projects' acceleration priorities for Caltrans District 7 that may affect the actual timing are documented in this chapter, as well. Since the GAI spans or overlaps multiple Caltrans Districts, results and analysis are presented and provided by Caltrans District in Appendix K (District 5), Appendix L (District 7), Appendix M (District 8), Appendix N (District 11), and Appendix O (District 12).

6.1 Why Timing is Important

Broadly speaking, an advance mitigation project consists of (1) purchasing compensatory mitigation that has been previously approved by the natural resource regulatory agencies through a conservation/mitigation bank, HCP/NCCP, or in-lieu fee program; or (2) establishing and receiving approval of compensatory mitigation credits, such as establishing a mitigation bank in accordance with existing laws, policies, procedures, templates, and guidance. The time it takes to perform each authorized activity varies; however, purchasing compensatory mitigation would likely take less time than establishing compensatory mitigation.

Caltrans transportation projects must have permits and compensatory mitigation secured before advertising and selecting a contractor to bid upon and perform a transportation project (Figure 6-1). Hence, for advance mitigation project scoping, the District's selection of a specific advance mitigation project type will be contingent, in part, on the anticipated timing of the potentially benefiting transportation project impacts. This is because, to benefit transportation projects as intended, the compensatory mitigation purchased or established through an advance mitigation project will need to be available to meet actual transportation project permit conditions established through an environmental study and document process undertaken prior to the transportation project incurring impacts (Figure 6-1).

Figure 6-1. Timing Advance Mitigation with Transportation Project Delivery



The date when a Caltrans potential transportation project is expected to be Ready to List (that is, the date a transportation project has been approved to be advertised to bid for construction) is an appropriate estimate for identifying when a Caltrans advance mitigation project will need to deliver compensatory mitigation to a potential benefiting transportation project.

6.2 Patterns of Estimated Potential Impacts

Given that the planning horizon for this assessment covers the 2019/20 through 2028/29 fiscal years, and that some of the transportation projects may have already gone to bid, it is necessary to consider which of the transportation projects:

- Would need to acquire compensatory mitigation before the AMP can deliver, and hence the AMP cannot feasibly supply compensatory mitigation credits on the required schedule;
- Would need compensatory mitigation delivered in a nearer time frame, which may favor seeking already existing credits as an AMP advance mitigation project scope; or
- Would need compensatory mitigation farther out in time and, if so, whether there is time to establish new compensatory mitigation.

6.2.1. Southern California Coast Ecoregion Section

Initial estimated impact patterns are based on the SHOPP transportation projects planned for the Southern California Coast ecoregion summarized in Table 5-1 and listed in Appendix I.

- As shown in Table 6-1 and Figure 6-2, when the SHOPP transportation projects identified previously have their forecast species of mitigation need impacts examined relative to their expected advertising date, the estimated compensatory mitigation needs are focused during the 2021/22, 2023/24, and 2026/27 fiscal years for the Southern California Coast ecoregion section, with lesser needs throughout the planning period.
- As shown in Tables 6-2 through 6-9 and Figures 6-3 through 6-10, when the SHOPP transportation projects identified previously have their aquatic resource impacts examined relative to their expected advertising date, the estimated compensatory mitigation needs are spread throughout the 10-year planning horizon, depending on sub-basin, with spikes in anticipated impacts in fiscal years 2021/22, 2022/23, and 2027/28. Similar trends are seen for projects within the coastal zone.

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Table 6-1. Southern California Coast Ecoregion Section: Estimated Impacts on Species of Mitigation Need within the GAI, by Transportation Project Delivery Year

Species of Mitigation Need	2019/ 20	2020/ 21	2021/ 22	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	Total
Coastal California gnatcatcher: number of transportation projects	2	3	4	2	1	0	3	6	2	4	27
Coastal California gnatcatcher: estimated potential impacts (acres)	0.1	2.2	2.5	3.9	0.1	0.0	0.5	4.5	0.9	2.3	16.9
California red-legged frog: number of transportation projects	6	3	8	5	7	3	5	9	3	8	57
California red-legged frog: estimated potential impacts (acres)	1.2	2.2	16.2	5.2	68.2	0.6	0.6	6.4	1.0	5.3	106.8
Least Bell's vireo: number of transportation projects	0	0	3	0	0	0	0	3	1	2	9
Least Bell's vireo: estimate potential impacts (acres)	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.2	<0.1	1.0	1.9
Mountain lion: number of transportation projects	4	1	5	3	4	2	2	8	2	5	36
Mountain lion: estimated potential impacts (acres)	1.1	1.3	14.5	1.0	86.6	0.4	0.1	7.9	0.7	4.2	117.7
Southwest willow flycatcher: number of transportation projects	2	0	2	0	1	0	0	5	1	2	13
Southwest willow flycatcher: estimated potential impacts (acres)	<0.1	0.0	0.5	0.0	<0.1	0.0	0.0	0.3	<0.1	1.0	1.8
Percentage of total mitigation need (%)^a	100	98.4	96.1	82.1	78.0	14.8	14.7	14.6	6.7	5.6	100%

^a Indicative of the timing of mitigation need. $[\sum \text{impacts (year)} \div \sum \text{total impacts}] * 100$

Figure 6-2. Southern California Coast Ecoregion Section: Estimated Impacts on Species of Mitigation Need within the GAI, by Transportation Project Delivery Year (in acres)

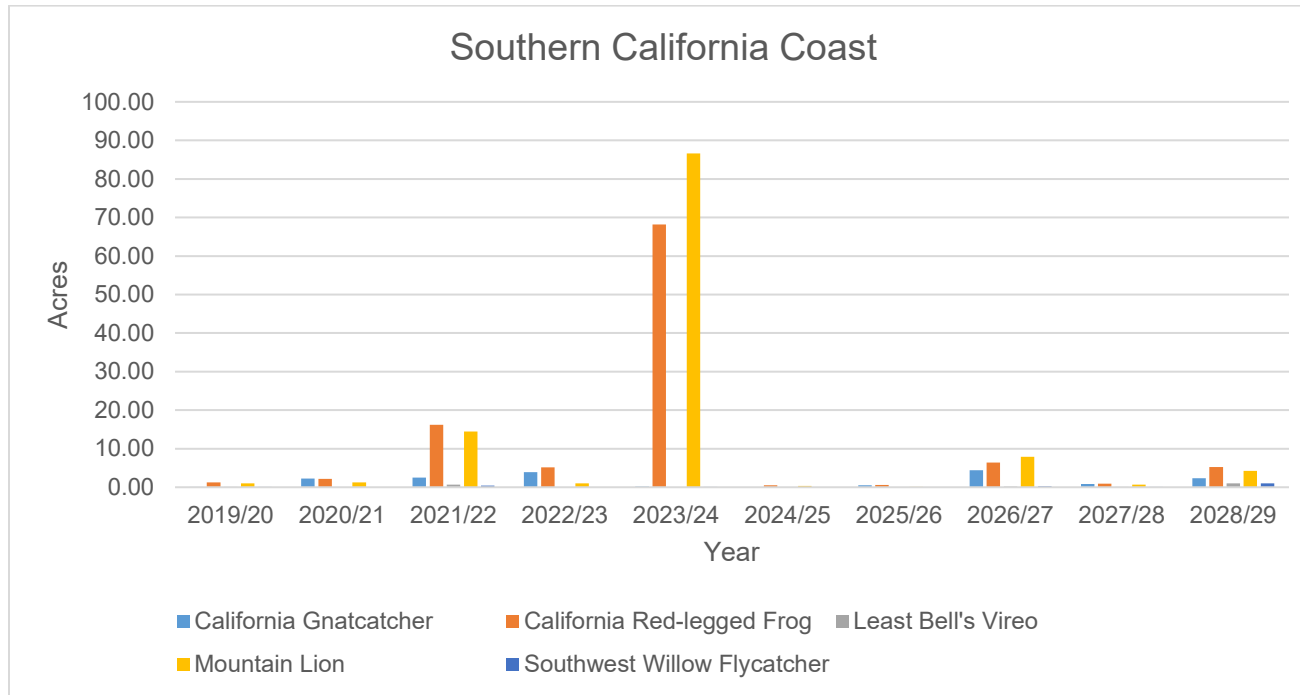


Table 6-2. Southern California Coast Ecoregion Section: Estimated Impacts on Threatened and Endangered Fish Habitat within the GAI, by Transportation Project Delivery Year (in acres)

Sub-basin	2019/20 Projects	2019/20 Impacts	2020/21 Projects	2020/21 Impacts	2021/22 Projects	2021/22 Impacts	2022/23 Projects	2022/23 Impacts	2023/24 Projects	2023/24 Impacts	2024/25 Projects	2024/25 Impacts	2025/26 Projects	2025/26 Impacts	2026/27 Projects	2026/27 Impacts	2027/28 Project	2027/28 Impacts	2028/29 Projects	2028/29 Impacts	Total Projects	Total Impacts
Calleguas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.7	0	0.0	1	0.7
Newport Bay	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	1	<0.1
San Antonio	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	2	0.2
San Gabriel	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3
Santa Barbara Coastal	2	0.2	0	0.0	4	2.7	1	0.6	1	0.2	1	0.2	0	0.0	1	0.4	1	0.1	1	<0.1	12	4.5
Santa Clara	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	1	0.1
Santa Monica Bay	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0	2	0.2
Santa Ynez	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	2	0.2
Ventura	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	0.1
Total	4	0.4	0	0.0	4	2.7	1	0.6	3	0.7	2	0.3	0	0.0	3	0.5	2	0.8	3	0.1	22	6.1
% of total mitigation need	N/A	100	N/A	93.1	N/A	93.1	N/A	48.8	N/A	39.0	N/A	27.5	N/A	22.6	N/A	22.6	N/A	14.4	N/A	1.3	N/A	100%

Note: N/A = not applicable
^a Totals may not equal sum of rows due to rounding errors

Figure 6-3. Southern California Coast Ecoregion Section: Estimated Impacts on Threatened and Endangered Fish Habitat within the GAI, by Transportation Project Delivery Year (in acres)

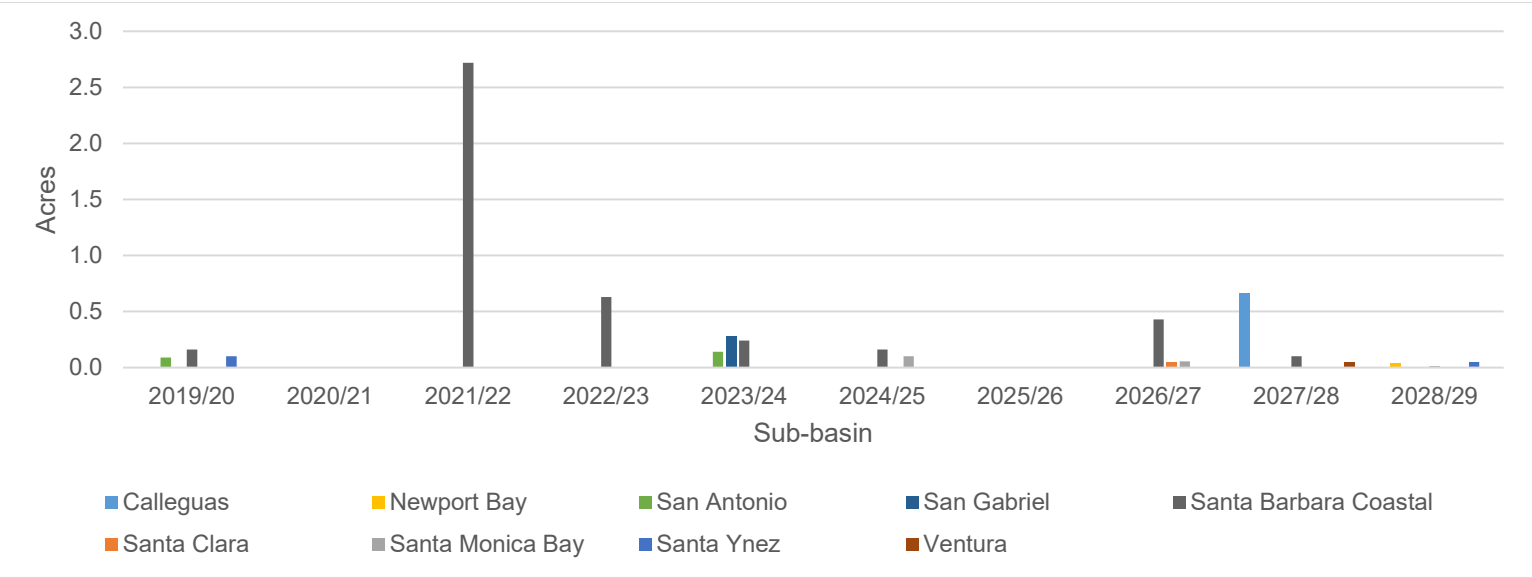


Table 6-3. Southern California Coast Ecoregion Section: Estimated Impacts on Threatened and Endangered Fish Habitat within the Coastal Zone, by Transportation Project Delivery Year (in acres)

Sub-basin	2019/20 Projects	2019/20 Impacts	2020/21 Projects	2020/21 Impacts	2021/22 Projects	2021/22 Impacts	2022/23 Projects	2022/23 Impacts	2023/24 Projects	2023/24 Impacts	2024/25 Projects	2024/25 Impacts	2025/26 Projects	2025/26 Impacts	2026/27 Projects	2026/27 Impacts	2027/28 Project	2027/28 Impacts	2028/29 Projects	2028/29 Impacts	Total Projects	Total Impacts
Calleguas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.7	0	0.0	1	0.7
San Gabriel	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3
Santa Barbara Coastal	2	0.2	0	0.0	2	2.1	1	0.6	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	0	0.0	6	3.4
Santa Monica Bay	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0	2	0.2
Total	2	0.2	0	0.0	2	2.1	1	0.6	1	0.3	1	0.1	0	0.0	2	0.5	1	0.7	0	0.0	10	4.5
% of total mitigation need	N/A	100	N/A	95.6	N/A	95.6	N/A	48.9	N/A	35.6	N/A	28.9	N/A	26.7	N/A	26.7	N/A	15.6	N/A	0.0	N/A	100%

Note: N/A = not applicable
^a Totals may not equal sum of rows due to rounding errors

Figure 6-4. Southern California Coast Ecoregion Section: Estimated Impacts on Threatened and Endangered Fish Habitat within the Coastal Zone, by Transportation Project Delivery Year (in acres)

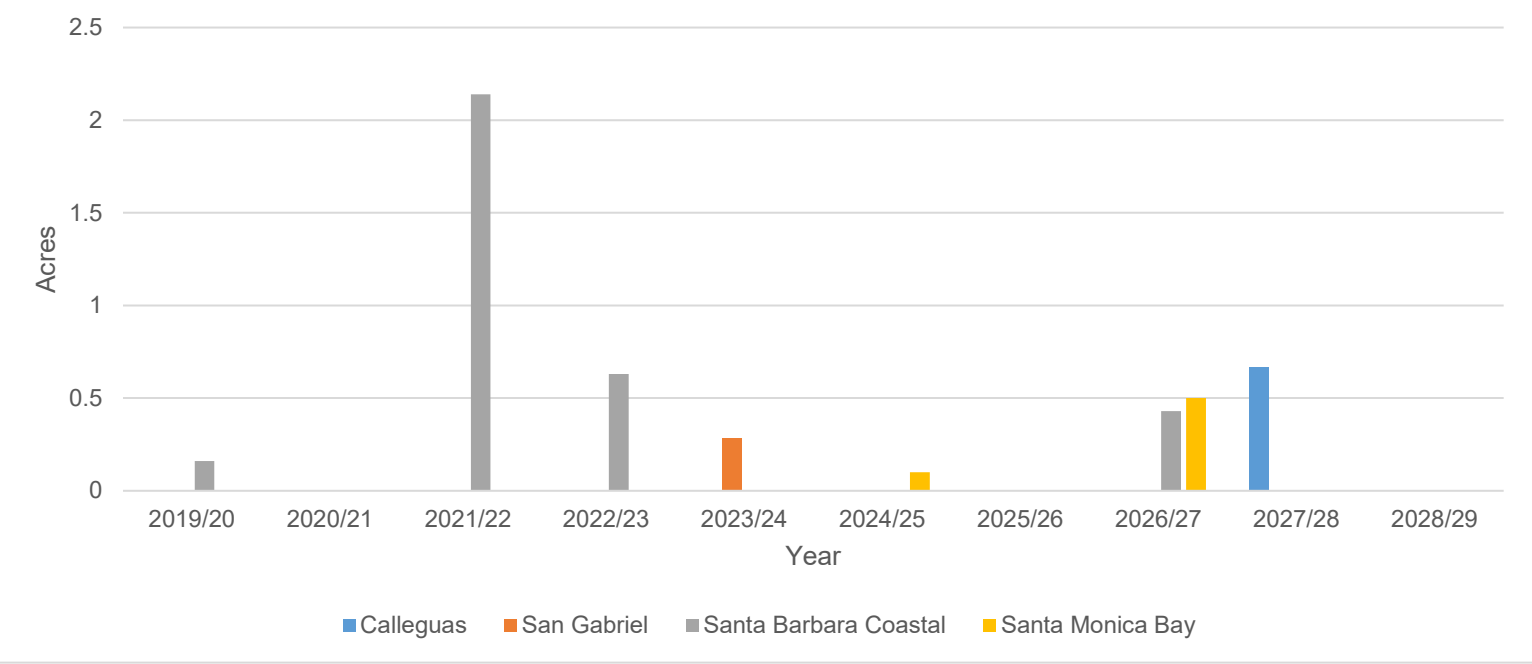


Table 6-4. Southern California Coast Ecoregion Section: Estimated Impacts on Wetlands within the GAI, by Transportation Project Delivery Year (in acres)

Sub-basin	2019/20 Projects	2019/20 Impacts	2020/21 Projects	2020/21 Impacts	2021/22 Projects	2021/22 Impacts	2022/23 Projects	2022/23 Impacts	2023/24 Projects	2023/24 Impacts	2024/25 Projects	2024/25 Impacts	2025/26 Projects	2025/26 Impacts	2026/27 Projects	2026/27 Impacts	2027/28 Project	2027/28 Impacts	2028/29 Projects	2028/29 Impacts	Total Projects	Total Impacts ^a
Calleguas	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	1	0.8	0	0.0	2	0.9
Los Angeles	0	0.0	0	0.0	2	0.3	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.4
Newport Bay	0	0.0	0	0.0	1	<0.1	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	<0.1
San Gabriel	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1
Santa Ana	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1
Santa Barbara Coastal	1	0.1	0	0.0	2	0.4	1	0.1	1	<0.1	1	<0.1	0	0.0	1	<0.1	0	0.0	0	0.0	8	0.6
Santa Clara	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	1	0.1
Santa Maria	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
Santa Monica Bay	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	1	0.2	1	0.1	1	0.1	0	0.0	0	0.0	4	0.7
Santa Ynez	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	3	0.2
Ventura	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	1	<0.1
Total	1	0.1	1	0.3	6	0.8	3	0.2	4	0.1	2	0.2	1	0.1	4	0.2	1	0.8	1	<0.1	24	2.9
% of total mitigation need	N/A	100	N/A	93.0	N/A	82.7	N/A	55.1	N/A	48.2	N/A	44.8	N/A	37.9	N/A	34.5	N/A	27.6	N/A	0.0	N/A	100%

Note: N/A = not applicable
^a Totals may not equal sum of rows due to rounding errors

Figure 6-5. Southern California Coast Ecoregion Section: Estimated Impacts on Wetlands in the GAI, by Transportation Project Delivery Year (in acres)

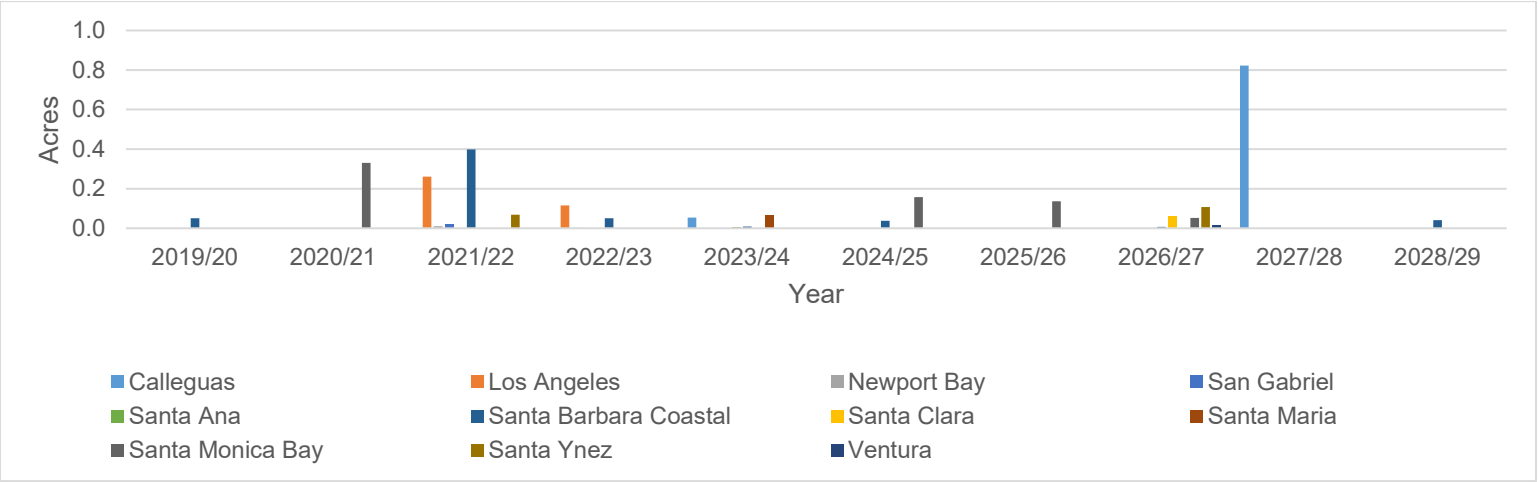


Table 6-5. Southern California Coast Ecoregion Section: Estimated Impacts on Wetlands within the Coastal Zone, by Transportation Project Delivery Year (in acres)

Sub-basin	2019/20 Projects	2019/20 Impacts	2020/21 Projects	2020/21 Impacts	2021/22 Projects	2021/22 Impacts	2022/23 Projects	2022/23 Impacts	2023/24 Projects	2023/24 Impacts	2024/25 Projects	2024/25 Impacts	2025/26 Projects	2025/26 Impacts	2026/27 Projects	2026/27 Impacts	2027/28 Project	2027/28 Impacts	2028/29 Projects	2028/29 Impacts	Total Projects	Total Impacts ^a
Calleguas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.8	0	0.0	1	0.8
Los Angeles	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1
San Gabriel	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1
Santa Barbara Coastal	1	0.1	0	0.0	2	0.3	1	0.1	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	1	<0.1	6	0.4
Santa Monica Bay	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	1	0.2	1	0.1	1	0.1	0	0.0	0	0.0	4	0.7
Total	1	0.1	1	0.3	4	0.3	1	0.1	0	0.0	1	0.2	1	0.1	2	0.1	1	0.8	1	<0.1	12	2.0
% of total mitigation need	N/A	100	N/A	95.0	N/A	80.0	N/A	65.0	N/A	60.0	N/A	60.0	N/A	50.0	N/A	45.0	N/A	40.0	N/A	0.0	N/A	100%

Note: N/A = not applicable
^a Totals may not equal sum of rows due to rounding errors

Figure 6-6. Southern California Coast Ecoregion Section: Estimated Impacts on Wetlands in the Coastal Zone, by Transportation Project Delivery Year (in acres)

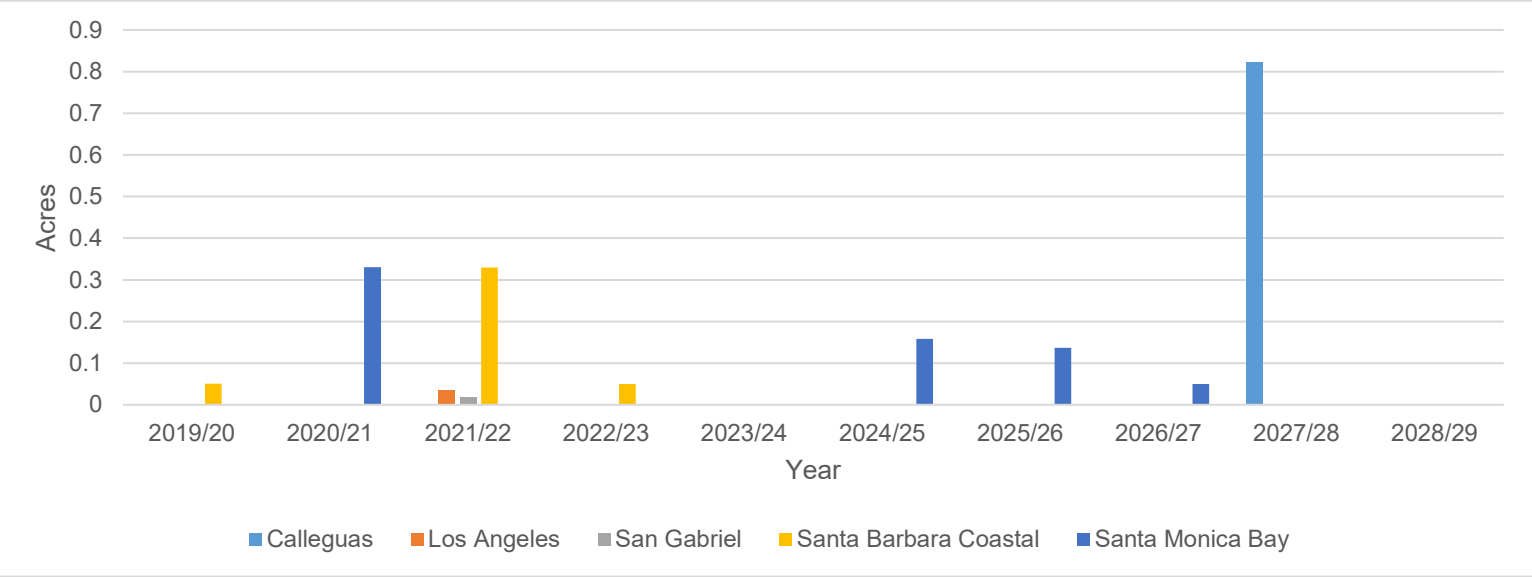


Table 6-6. Southern California Coast Ecoregion Section: Estimated Impacts on Non-wetland Waters for within the GAI, by Transportation Project Delivery Year (in acres)

Sub-basin	2019/20 Projects	2019/20 Impacts	2020/21 Projects	2020/21 Impacts	2021/22 Projects	2021/22 Impacts	2022/23 Projects	2022/23 Impacts	2023/24 Projects	2023/24 Impacts	2024/25 Projects	2024/25 Impacts	2025/26 Projects	2025/26 Impacts	2026/27 Projects	2026/27 Impacts	2027/28 Project	2027/28 Impacts	2028/29 Projects	2028/29 Impacts	Total Projects	Total Impacts
Calleguas	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	1	<0.1	1	0.7	1	<0.1	4	0.8
Los Angeles	1	0.2	0	0.0	2	0.6	2	0.5	1	<0.1	0	0.0	2	0.1	1	0.2	2	0.1	3	0.1	14	1.7
Newport Bay	1	0.2	1	0.1	1	0.1	1	0.5	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1	7	1.1
San Antonio	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.2
San Gabriel	0	0.0	0	0.0	0	0.0	0	0.0	2	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.3
Santa Ana	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	1	<0.1
Santa Barbara Coastal	2	0.2	0	0.0	4	1.3	1	0.3	1	0.2	1	0.1	0	0.0	1	0.3	1	<0.1	1	<0.1	12	2.4
Santa Clara	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	1	<0.1
Santa Maria	0	0.0	0	0.0	0	0.0	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	3	0.6
Santa Monica Bay	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0	1	0.1	1	<0.1	2	0.1	1	<0.1	0	0.0	7	0.5
Santa Ynez	1	0.1	0	0.0	2	0.2	0	0.0	1	0.2	0	0.0	0	0.0	1	0.2	0	0.0	1	0.4	6	1.0
Ventura	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	1	0.1	3	0.2
Total	6	0.8	4	0.3	8	2.1	4	1.4	8	1.5	2	0.2	3	0.2	7	0.8	5	0.8	10	0.8	57	8.9
% of total mitigation need	N/A	100	N/A	89.7	N/A	86.3	N/A	62.7	N/A	47.0	N/A	30.1	N/A	27.9	N/A	27.0	N/A	18.0	N/A	9.0	N/A	100%

Note: N/A = not applicable
^a Totals may not equal sum of rows due to rounding errors

Figure 6-7. Southern California Coast Ecoregion Section: Estimated Impacts on Non-wetland Waters in the GAI, by Transportation Project Delivery Year (in acres)

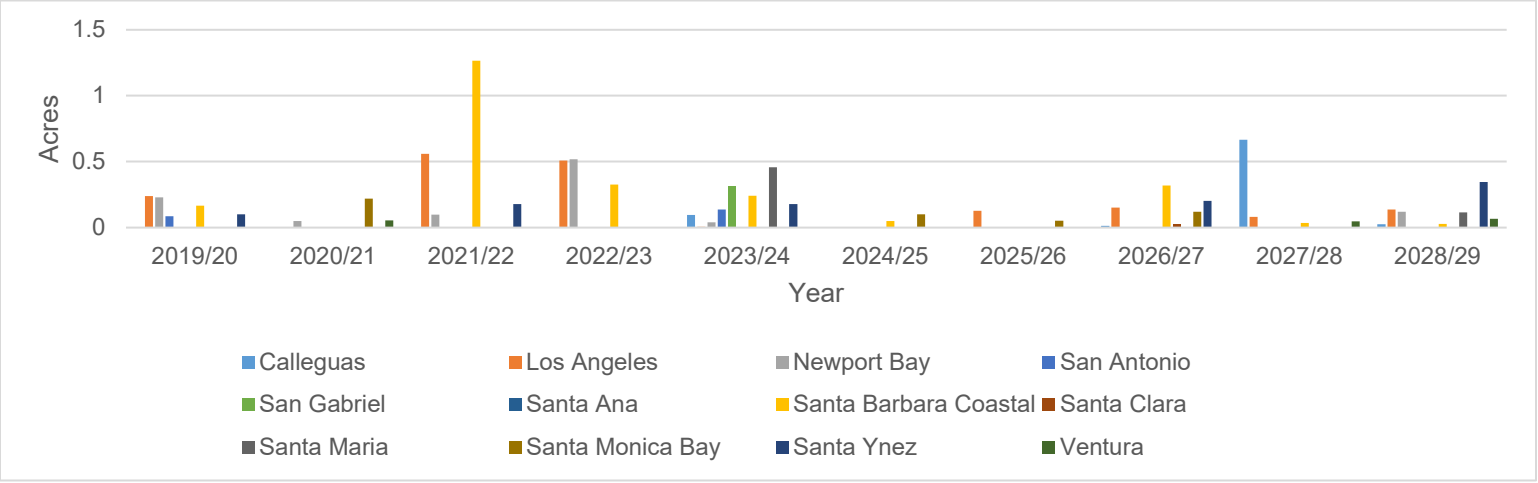


Table 6-7. Southern California Coast Ecoregion Section: Estimated Impacts on Non-wetland Waters for within the Coastal Zone, by Transportation Project Delivery Year (in acres)

Sub-basin	2019/20 Projects	2019/20 Impacts	2020/21 Projects	2020/21 Impacts	2021/22 Projects	2021/22 Impacts	2022/23 Projects	2022/23 Impacts	2023/24 Projects	2023/24 Impacts	2024/25 Projects	2024/25 Impacts	2025/26 Projects	2025/26 Impacts	2026/27 Projects	2026/27 Impacts	2027/28 Project	2027/28 Impacts	2028/29 Projects	2028/29 Impacts	Total Projects	Total Impacts
Calleguas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.7	0	0.0	1	0.7
San Gabriel	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3
Santa Barbara Coastal	2	0.2	0	0.0	2	0.7	1	0.3	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	6	1.3
Santa Monica Bay	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0	1	0.1	1	<0.1	1	0.1	0	0.0	0	0.0	5	0.4
Ventura	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	2	0.1
Total	2	0.2	3	0.3	2	0.7	1	0.3	1	0.3	1	0.1	1	<0.1	2	0.2	1	0.7	1	0.1	15	2.8
% of total mitigation need	N/A	100	N/A	96.4	N/A	85.7	N/A	60.7	N/A	50.0	N/A	39.3	N/A	35.7	N/A	35.7	N/A	28.6	N/A	3.6	N/A	100%

Note: N/A = not applicable
^a Totals may not equal sum of rows due to rounding errors

Figure 6-8. Southern California Coast Ecoregion Section: Estimated Impacts on Non-wetland Waters in the Coastal Zone, by Transportation Project Delivery Year (in acres)

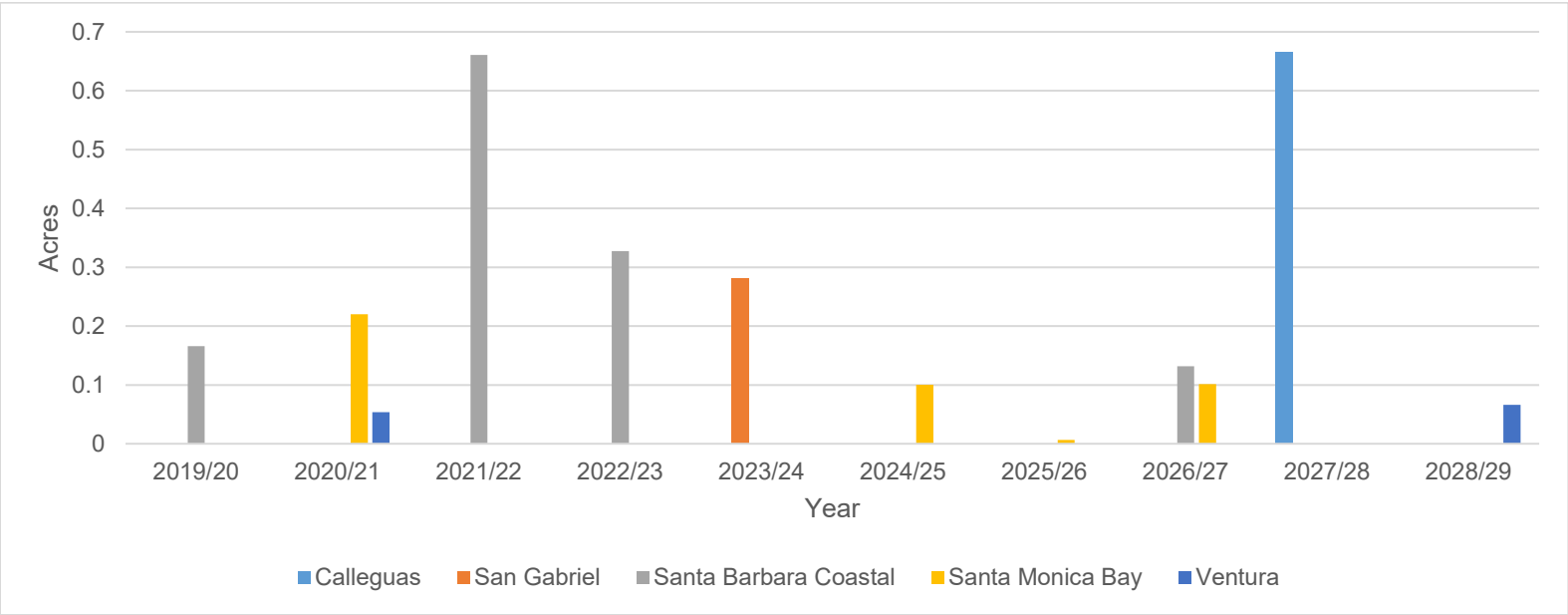


Table 6-8. Southern California Coast Ecoregion Section: Estimated Impacts on Riparian Habitat in the GAI, by Transportation Project Delivery Year (in acres)

Sub-basin	2019/20 Projects	2019/20 Impacts	2020/21 Projects	2020/21 Impacts	2021/22 Projects	2021/22 Impacts	2022/23 Projects	2022/23 Impacts	2023/24 Projects	2023/24 Impacts	2024/25 Projects	2024/25 Impacts	2025/26 Projects	2025/26 Impacts	2026/27 Projects	2026/27 Impacts	2027/28 Project	2027/28 Impacts	2028/29 Projects	2028/29 Impacts	Total Projects	Total Impacts
Calleguas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Los Angeles	0	0.0	0	0.0	2	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.3
Newport Bay	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
San Antonio	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
San Gabriel	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Santa Ana	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1
Santa Barbara Coastal	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	2	0.4
Santa Clara	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Santa Maria	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Santa Monica Bay	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	1	<0.1
Santa Ynez	0	0.0	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	0.9	3	1.2
Ventura	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	0	0.0	0	0.0	4	0.7	0	0.0	1	<0.1	0	0.0	0	0.0	2	0.2	0	0.0	2	1.0	9	1.9
% of total mitigation need	N/A	100	N/A	100	N/A	100	N/A	63.1	N/A	63.1	N/A	63.1	N/A	63.1	N/A	63.1	N/A	52.6	N/A	52.6	N/A	100%

Note: N/A = not applicable
^a Totals may not equal sum of rows due to rounding errors

Figure 6-9. Southern California Coast Ecoregion Section: Estimated Impacts on Riparian Habitat in the GAI, by Transportation Project Delivery Year (in acres)

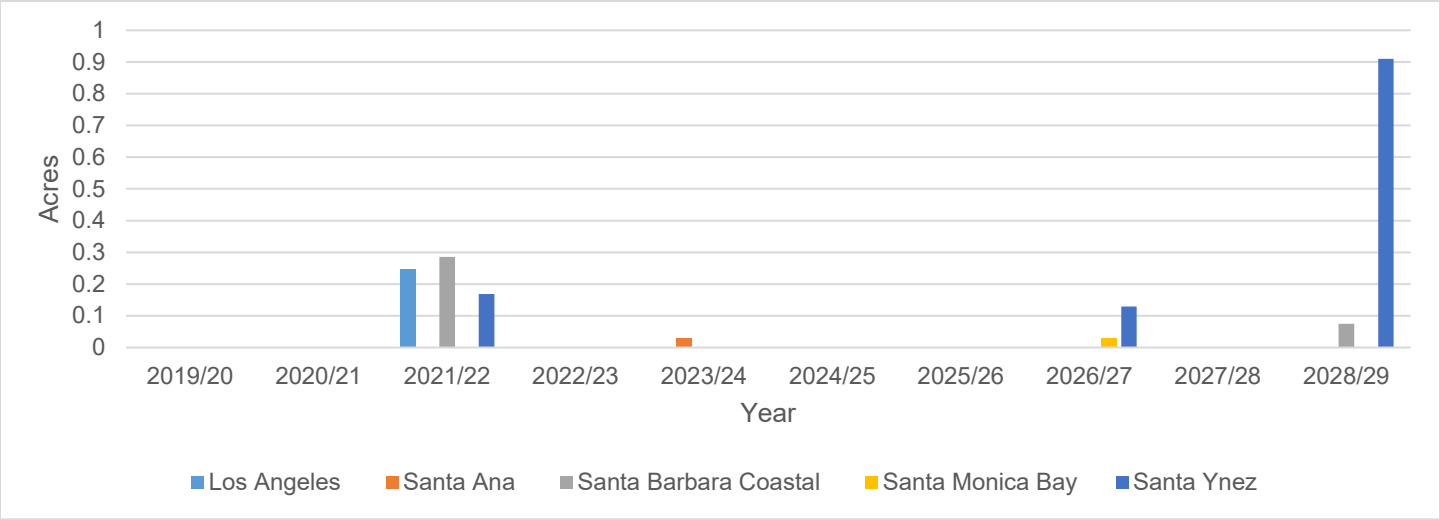
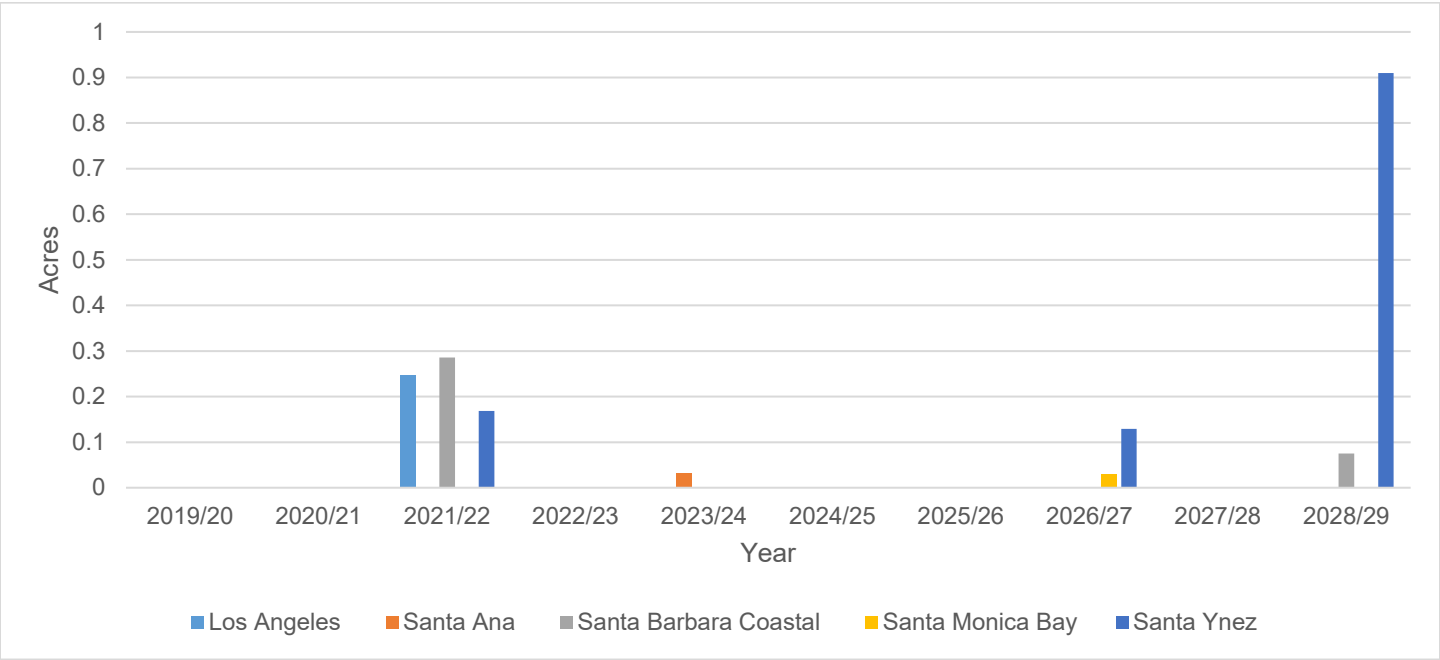


Table 6-9. Southern California Coast Ecoregion Section: Estimated Impacts on Riparian Habitat in the Coastal Zone, by Transportation Project Delivery Year (in acres)

Sub-basin	2019/20 Projects	2019/20 Impacts	2020/21 Projects	2020/21 Impacts	2021/22 Projects	2021/22 Impacts	2022/23 Projects	2022/23 Impacts	2023/24 Projects	2023/24 Impacts	2024/25 Projects	2024/25 Impacts	2025/26 Projects	2025/26 Impacts	2026/27 Projects	2026/27 Impacts	2027/28 Project	2027/28 Impacts	2028/29 Projects	2028/29 Impacts	Total Projects	Total Impacts
Los Angeles	0	0.0	0	0.0	2	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.3
Santa Ana	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1
Santa Barbara Coastal	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	2	0.4
Santa Monica Bay	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	1	<0.1
Santa Ynez	0	0.0	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	1	0.9	3	1.2
Total	0	0.0	0	0.0	4	0.7	0	0.0	1	<0.1	0	0.0	0	0.0	2	0.2	0	0.0	2	1.0	9	1.9
% of total mitigation need	N/A	100	N/A	100	N/A	100	N/A	63.1	N/A	63.1	N/A	63.1	N/A	63.1	N/A	63.1	N/A	52.6	N/A	52.6	N/A	100%

Note: N/A = not applicable
^a Totals may not equal sum of rows due to rounding errors

Figure 6-10. Southern California Coast Ecoregion Section: Estimated Impacts on Riparian Habitat in the Coastal Zone, by Transportation Project Delivery Year (in acres)



6.2.2. Southern California Mountains and Valleys Ecoregion Section

Initial estimated impact patterns are based on the SHOPP transportation projects planned for the Southern California Mountains and Valleys ecoregion summarized in Table 5-2 and listed in Appendix I.

- As shown in Table 6-10 and Figure 6-11, when the SHOPP transportation projects identified previously have their forecast species of mitigation need impacts examined relative to their expected advertising date, the Caltrans District 7's compensatory mitigation needs focused on the 2019/20 and 2023/24 fiscal years, with lesser needs spread throughout the 10-year planning period for the Southern California Mountains and Valleys ecoregion section.
- As shown in Tables 6-11 through 6-14 and Figures 6-12 through 6-15, when the SHOPP transportation projects identified previously have their aquatic resource impacts examined relative to their expected advertising date, the Caltrans District 7's compensatory mitigation needs are spread throughout the 10-year planning period, with the exception of fiscal years 2023/24 through 2026/27, which show no anticipated impacts to aquatic resources.

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Table 6-10. Southern California Mountains and Valleys Ecoregion Section: Estimated Impacts on Species of Mitigation Need within the GAI, by Transportation Project Delivery Year

Species of Mitigation Need	2019/ 20	2020/ 21	2021/ 22	2022/2 3	2023/ 24	2024/ 25	2025/ 26	2026/ 27	2027/ 28	2028/ 29	Total
Coastal California gnatcatcher: number of transportation projects	4	3	2	0	5	0	0	3	3	5	25
Coastal California gnatcatcher: estimated potential impacts (acres)	3.5	0.7	0.4	0.0	20.4	0.0	0.0	0.3	2.0	1.9	29.1
California red-legged frog: number of transportation projects	6	3	3	2	6	0	0	3	3	5	31
California red-legged frog: estimated potential impacts (acres)	8.3	0.7	0.9	0.5	20.7	0.0	0.0	0.3	1.8	3.8	36.8
Least Bell's vireo: number of transportation projects	1	1	1	0	2	0	0	0	2	2	9
Least Bell's vireo: estimate potential impacts (acres)	<0.1	0.1	0.2	0.0	0.3	0.0	0.0	0.1	0.4	0.1	1.2
Mountain lion: number of transportation projects	5	3	3	2	6	0	0	3	3	6	31
Mountain lion: estimated potential impacts (acres)	8.2	0.7	0.9	1.1	20.8	0.0	0.0	0.4	2.3	4.4	38.7
Southwest willow flycatcher: number of transportation projects	2	1	1	0	2	0	0	1	1	2	10
Southwest willow flycatcher: estimated potential impacts (acres)	0.7	0.1	0.2	0.0	0.3	0.0	0.0	0.1	0.4	0.1	1.9
Percentage of total mitigation need (%)^a	100	81.1	79.0	76.6	75.1	17.1	17.1	17.1	16.0	9.6	100%

^a Indicative of the timing of mitigation need. $[\sum \text{impacts (year)} \div \sum \text{total impacts}] * 100$

Figure 6-11. Southern California Mountains and Valleys Ecoregion Section: Estimated Impacts on Species of Mitigation Need within the GAI, by Transportation Project Delivery Year (in acres)

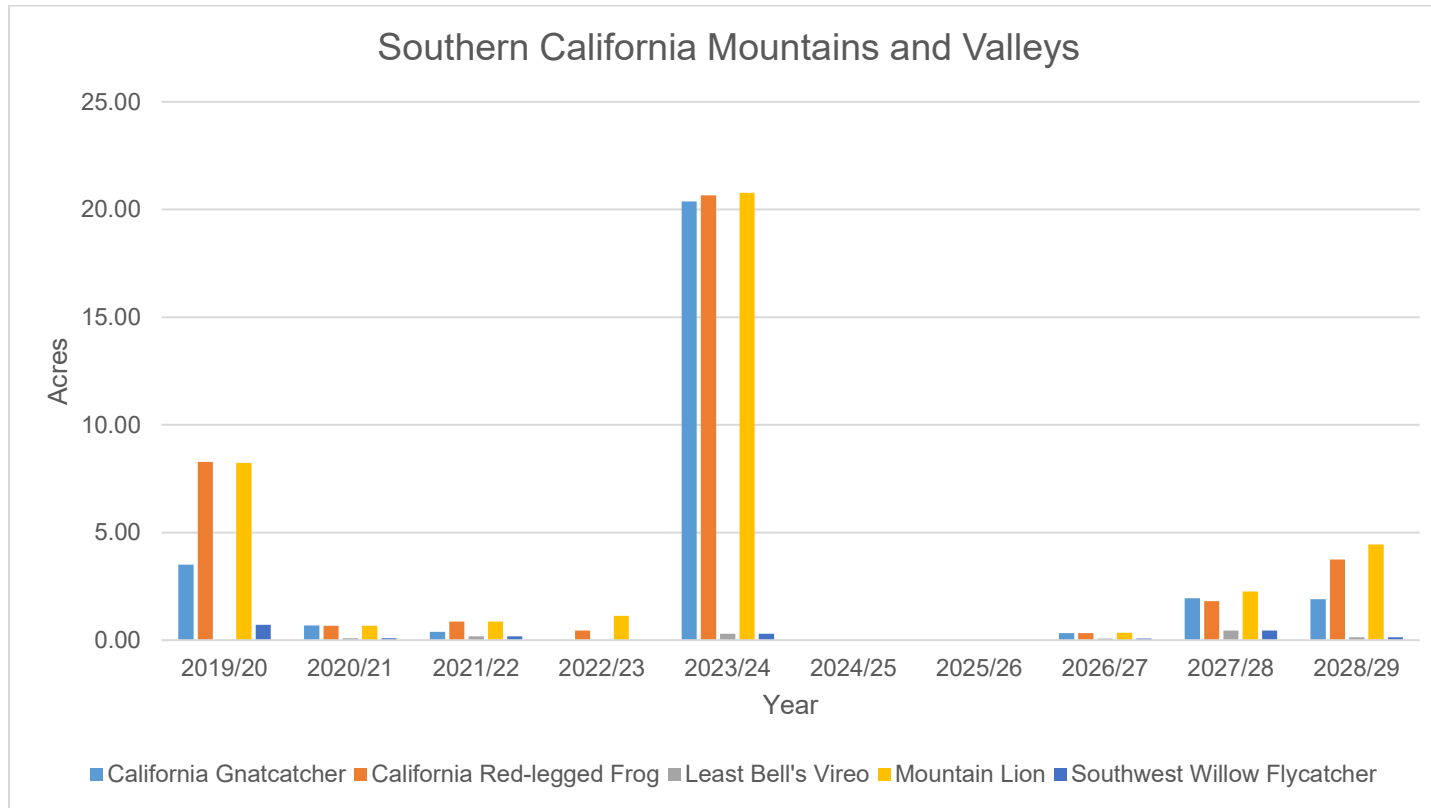


Table 6-11. Southern California Mountains and Valleys Ecoregion Section: Estimated Impacts on Threatened and Endangered Fish Habitat within the GAI, by Transportation Project Delivery Year (in acres)

Sub-Basin	2019/20 Projects	2019/20 Impacts	2020/21 Projects	2020/21 Impacts	2021/22 Projects	2021/22 Impacts	2022/23 Projects	2022/23 Impacts	2023/24 Projects	2023/24 Impacts	2024/25 Projects	2024/25 Impacts	2025/26 Projects	2025/26 Impacts	2026/27 Projects	2026/27 Impacts	2027/28 Project	2027/28 Impacts	2028/29 Projects	2028/29 Impacts	Total Projects	Total Impacts
San Gabriel	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	1	0.1	3	0.3
Santa Ana	2	0.4	1	0.1	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	0.6
Santa Clara	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	1	<0.1	3	0.4
Ventura	0	0.0	1	0.1	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	3	0.3
Total	3	0.5	2	0.2	2	0.1	0	0.0	2	0.1	0	0.0	0	0.0	0	0.0	2	0.5	2	0.2	13	1.6
% of total mitigation need	N/A	100	N/A	68.9	N/A	56.4	N/A	50.1	N/A	50.1	N/A	43.8	N/A	43.8	N/A	43.8	N/A	43.8	N/A	12.5	N/A	100%

Note: N/A = not applicable
^a Totals may not equal sum of rows due to rounding errors

Figure 6-12. Southern California Mountains and Valleys Ecoregion Section: Estimated Impacts on Threatened and Endangered Fish Habitat within the GAI, by Transportation Project Delivery Year (in acres)

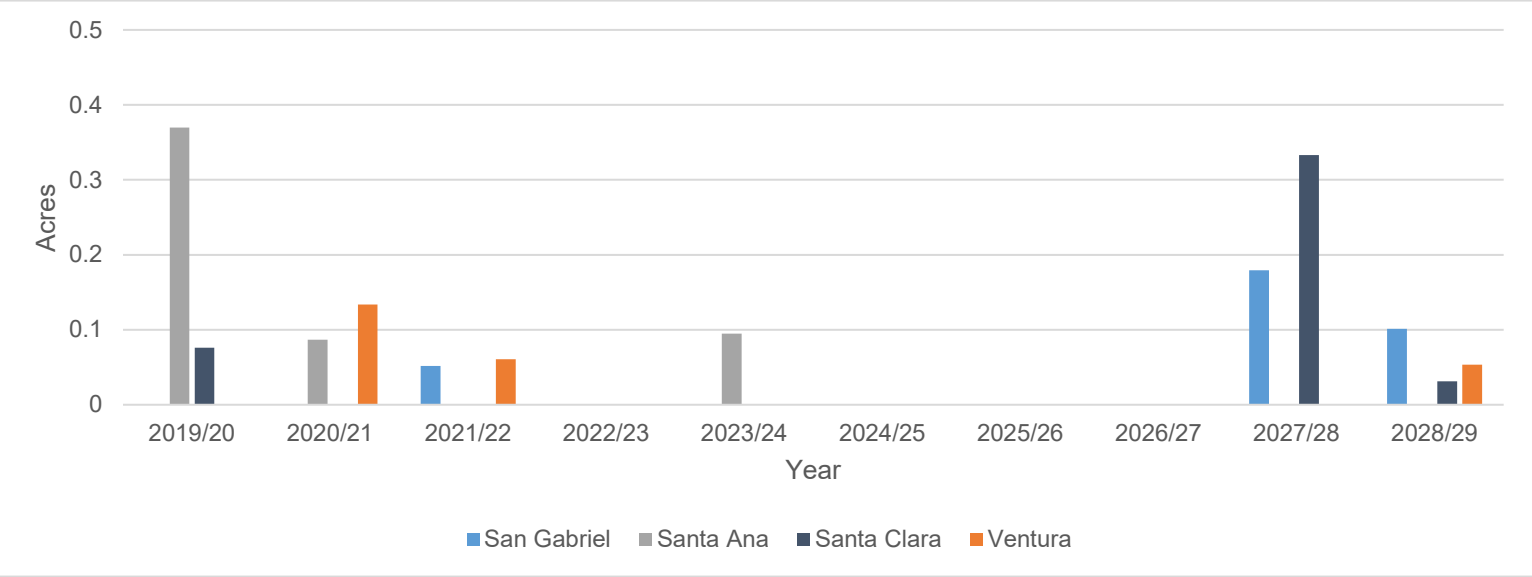


Table 6-12. Southern California Mountains and Valleys Ecoregion Section: Estimated Impacts on Wetlands within the GAI, by Transportation Project Delivery Year (in acres)

Sub-Basin	2019/20 Projects	2019/20 Impacts	2020/21 Projects	2020/21 Impacts	2021/22 Projects	2021/22 Impacts	2022/23 Projects	2022/23 Impacts	2023/24 Projects	2023/24 Impacts	2024/25 Projects	2024/25 Impacts	2025/26 Projects	2025/26 Impacts	2026/27 Projects	2026/27 Impacts	2027/28 Project	2027/28 Impacts	2028/29 Projects	2028/29 Impacts	Total Projects	Total Impacts
Aliso-San Onofre	1	<0.1	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	<0.1
Mojave	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
San Gabriel	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	1	0.1	2	0.2	4	0.4
San Jacinto	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1
Santa Clara	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	1	<0.1
Santa Margarita	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
Ventura	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	1	<0.1
Total	2	0.1	0	0.0	1	<0.1	1	0.1	1	<0.1	0	0.0	0	0.0	1	0.1	1	0.1	3	0.2	11	0.6
% of total mitigation need	N/A	100	N/A	83.4	N/A	83.4	N/A	83.4	N/A	66.7	N/A	66.7	N/A	66.7	N/A	66.7	N/A	50.0	N/A	33.3	N/A	100%

Note: N/A = not applicable
^a Totals may not equal sum of rows due to rounding errors

Figure 6-13. Southern California Mountains and Valleys Ecoregion Section: Estimated Impacts on Wetlands within the GAI, by Transportation Project Delivery Year (in acres)

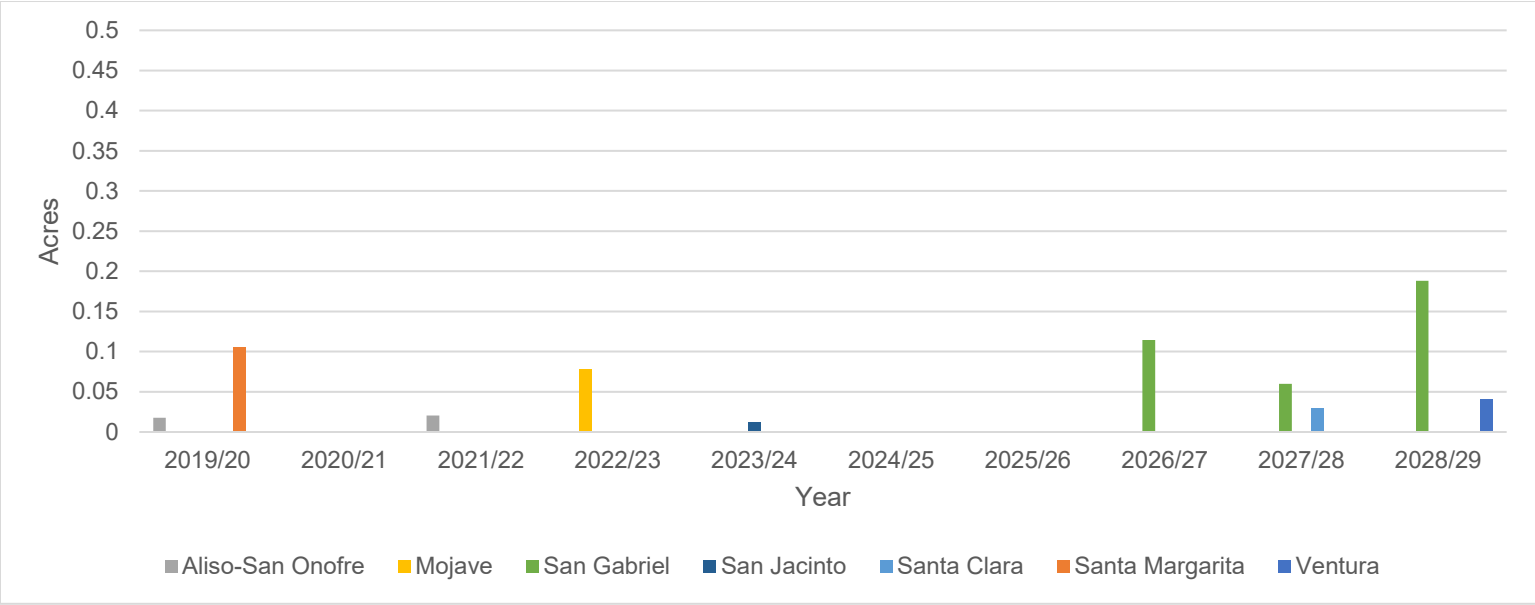


Table 6-13. Southern California Mountains and Valleys Ecoregion Section: Estimated Impacts on Non-wetland Waters within the GAI, by Transportation Project Delivery Year (in acres)

Sub-Basin	2019/20 Projects	2019/20 Impacts	2020/21 Projects	2020/21 Impacts	2021/22 Projects	2021/22 Impacts	2022/23 Projects	2022/23 Impacts	2023/24 Projects	2023/24 Impacts	2024/25 Projects	2024/25 Impacts	2025/26 Projects	2025/26 Impacts	2026/27 Projects	2026/27 Impacts	2027/28 Project	2027/28 Impacts	2028/29 Projects	2028/29 Impacts	Total Projects	Total Impacts
Aliso-San Onofre	1	1.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	1.4
Cuyama	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	1	0.1
Mojave	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1
San Gabriel	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	1	0.1	3	0.3
San Jacinto	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3
Santa Ana	2	0.4	1	0.1	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0	1	<0.1	1	<0.1	1	0.1	8	0.7
Santa Clara	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	1	<0.1	3	0.3
Santa Margarita	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
Ventura	0	0.0	1	0.1	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	3	0.3
Total	5	1.5	2	0.2	2	0.1	1	<0.1	3	0.8	0	0.0	0	0.0	1	<0.1	3	0.4	3	0.4	20	3.4
% of total mitigation need	N/A	100	N/A	54.5	N/A	48.7	N/A	45.8	N/A	45.8	N/A	22.6	N/A	22.6	N/A	22.6	N/A	22.6	N/A	11.3	N/A	100%

Note: N/A = not applicable
^a Totals may not equal sum of rows due to rounding errors

Figure 6-14. Southern California Mountains and Valleys Ecoregion Section: Estimated Impacts on Non-wetland Waters within the GAI, by Transportation Project Delivery Year (in acres)

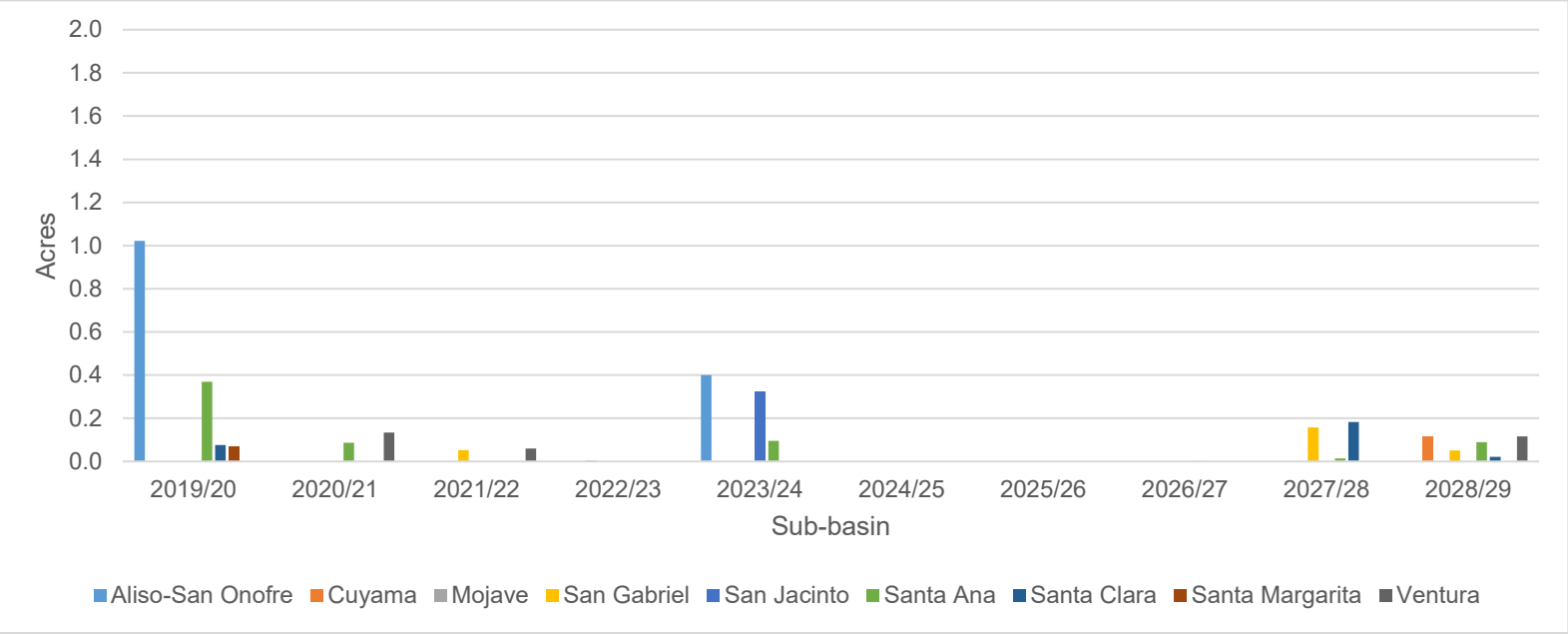
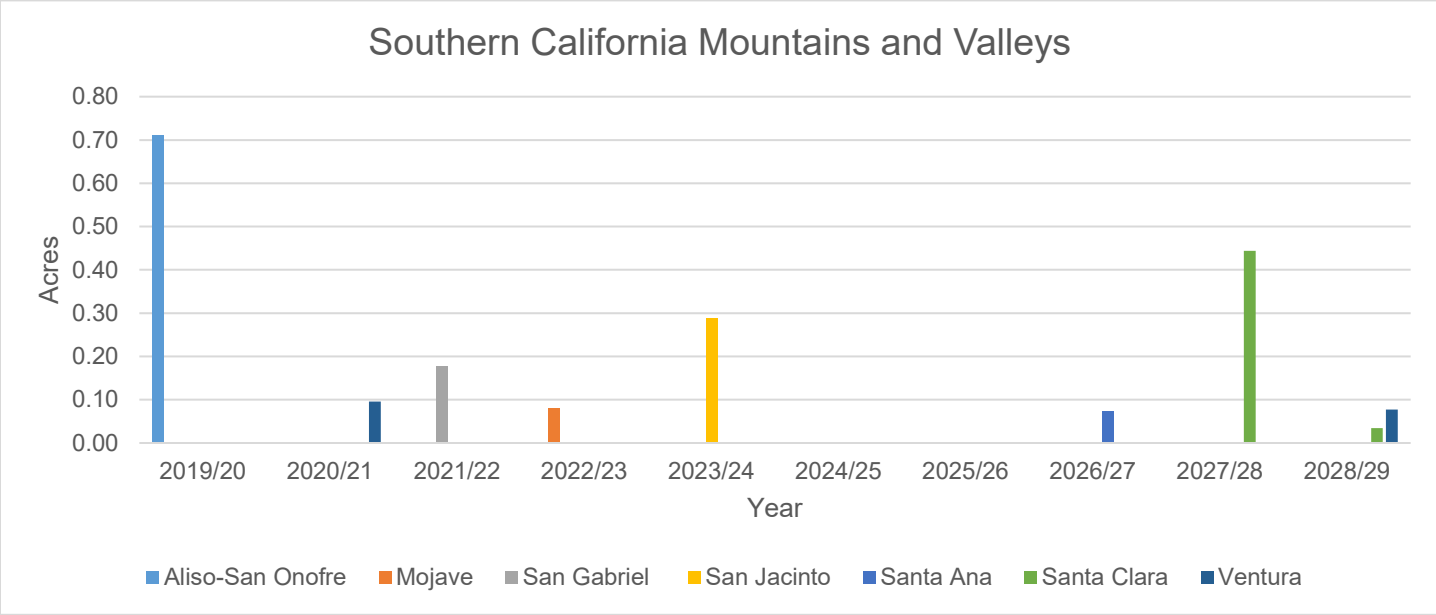


Table 6-14. Southern California Mountains and Valleys Ecoregion Section: Estimated Impacts on Riparian Habitat in the GAI, by Transportation Project Delivery Year (in acres)

Sub-Basin	2019/20 Projects	2019/20 Impacts	2020/21 Projects	2020/21 Impacts	2021/22 Projects	2021/22 Impacts	2022/23 Projects	2022/23 Impacts	2023/24 Projects	2023/24 Impacts	2024/25 Projects	2024/25 Impacts	2025/26 Projects	2025/26 Impacts	2026/27 Projects	2026/27 Impacts	2027/28 Project	2027/28 Impacts	2028/29 Projects	2028/29 Impacts	Total Projects	Total Impacts
Aliso-San Onofre	1	0.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.7
Cuyama	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mojave	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
San Gabriel	0	0.0	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2
San Jacinto	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3
Santa Ana	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	1	0.1
Santa Clara	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.4	1	<0.1	2	0.5
Santa Margarita	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ventura	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	2	0.2
Total	1	0.7	1	0.1	1	0.2	1	0.1	1	0.3	0	0.0	0	0.0	1	0.1	1	0.4	2	0.1	9	2.0
% of total mitigation need	N/A	100	N/A	65.0	N/A	60.0	N/A	50.0	N/A	45.0	N/A	30.0	N/A	30.0	N/A	30.0	N/A	25.0	N/A	5.0	N/A	100%

Note: N/A = not applicable
^a Totals may not equal sum of rows due to rounding errors

Figure 6-15. Southern California Mountains and Valleys Ecoregion Section: Estimated Impacts on Riparian Habitat in the GAI, by Transportation Project Delivery Year (in acres)



6.3 Acceleration Priorities

Caltrans' transportation project sequence prioritization reflects the updated information provided in the 2019/20 to 2028/29 (Quarter 3) SHOPP Ten-Year Book and is based on meeting the District's needs and performance targets while financially balancing the District's accounts (Appendix I). As a result of the dynamic nature of transportation planning, since the 2019/20 to 2028/29 (Quarter 3) SHOPP Ten-Year Book was published, delivery schedules associated with 9 transportation projects have changed.

The following transportation projects were delayed, based on the current SHOPP Ten-Year Book (2021, Quarter 3):

- SHOPP Project ID 13651¹ will be delayed from 2020/21 to 2021/22.
- SHOPP Project ID 18767¹ will be delayed from 2020/21 to 2022/23.
- SHOPP Project ID 21832¹ will be delayed from 2021/22 to 2022/23

Additionally, at this time, the following transportation projects will be accelerated:

- SHOPP Project ID 16961 will be accelerated from 2021/22 to 2020/21.
- SHOPP Project ID 18005¹ will be accelerated from 2021/22 to 2020/21.
- SHOPP Project ID 14094¹ will be accelerated from 2021/22 to 2020/21.
- SHOPP Project ID 16655¹ will be accelerated from 2021/22 to 2020/21.

The following projects have been excluded from the most current Ten-Year Book (2021, Quarter 3):

- SHOPP Project IDs 22273,¹ 22275,¹ 22276,¹ 22278,¹ 22280,¹ 22281,¹ 22282,¹ 22283,¹ 22284,¹ 22496,¹ 22497,¹ 22498,¹ 22500,¹ 22505,¹ 22506,¹ 22507,¹ 13447,¹ 13414,¹ 17037,¹ 16949,¹ 17060,¹ 17061,¹ 17117,¹ 17118,¹ 17123,¹ 17125.¹

However, the following projects have been selected as priorities in the most current Ten-Year Book (2021, Quarter 3):

- SHOPP Project IDs 20784, 22009, 18056, 21471, 20792, 20714, 20787, 19918, 22030, 20259, 22324, 22315, 22295, 22296, 22324, 18313, 22326, 19918, 18944, 21952, 19951, 19941, 19096, 22012, 21168, 22329, 22328, 19996, 19078, 15934, 22315, 20016, 19096, 20015, 18944, 22328, 18253, 21168, 22328, 20767, 18664, 20882, 16302.

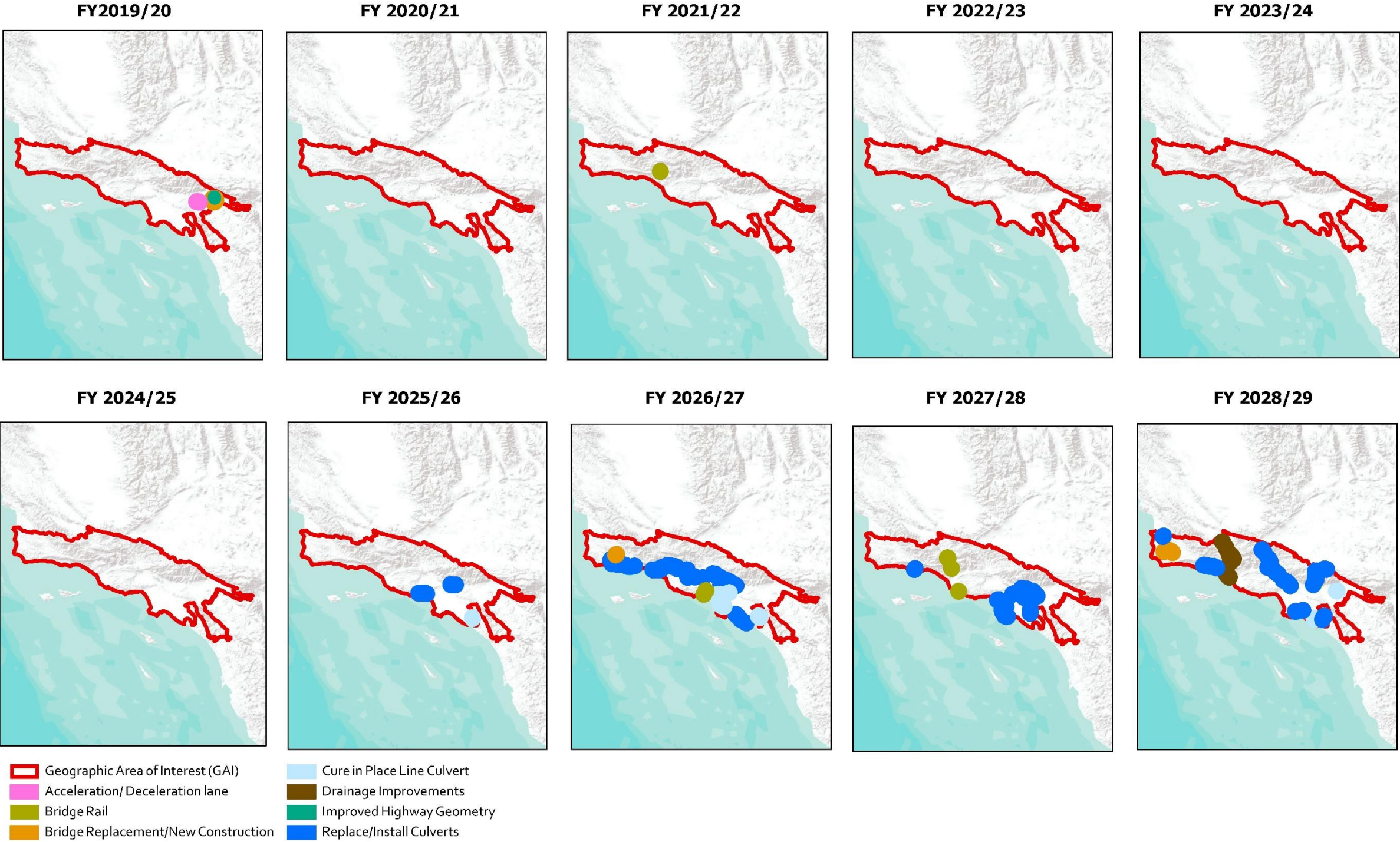
As shown in Tables 6-1 through 6-9 and Figures 6-2 through 6-10, which are based on Quarter 2 of the Ten-Year Book, most impacts on aquatic resources in the Southern California Coast are forecast throughout of the 10-year period evaluated in the SAMNA, while impacts on aquatic resources in the Southern California Mountains and Valleys are

¹ This transportation project was not included in the SHOPP Ten-Year Book for fiscal years 2020 to 2029 but is included in subsequent planning documents. The SAMNA results included in this document do not include forecast impacts from this transportation project.

forecast for the beginning and late part of the 10-year period evaluated. Similarly, most impacts on the species that co-occur with aquatic resources in both ecoregions were forecast toward the beginning of the 10-year period evaluated in the SAMNA, with additional impacts near the end of the 10-year period, 2018/19 to 2019/28.

At this time, the Road Repair and Accountability Act of 2017 (also known as Senate Bill 1) priorities are the District's priorities, which generally fall in the middle and end of the 10-year assessment period. Figure 6-16 shows the location of the prioritized transportation projects, by year. In all, the District is forecasting mitigation needs that may come as a result of delivering transportation projects and benefit from advance mitigation planning.

Figure 6-16. Location of SHOPP Estimated Impacts, by Transportation Project Delivery Year



Sources: Esri, USGS, NOAA

Note: SHOPP transportation projects are listed in Appendix I.

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7. WILDLIFE RESOURCES CONSERVATION GOALS AND OBJECTIVES

Caltrans' primary objective for wildlife resources is to avoid and minimize all impacts on special-status species from Caltrans transportation projects in the GAI. However, when avoidance and minimization are insufficient or infeasible, compensatory mitigation may be used to offset impacts. Credits or values established through SHC § 800.6(a)-authorized advance mitigation projects offer the unique opportunity to consolidate needed compensatory mitigation. This consolidation helps to provide strategically placed and environmentally sound enhanced, restored, or created habitat and an improved environmental outcome that may not be available through the usual transportation project-by-project approach to compensatory mitigation.

Caltrans seeks to align its advance mitigation projects with natural resource regulatory agencies' goals and objectives, and thus contribute to an improved environmental outcome within the GAI. With this in mind, this chapter presents Caltrans' understanding of natural resource regulatory agencies' regional conservation goals and objectives that could be applied to advance mitigation projects undertaken in the GAI to offset forecast impacts on wildlife resources from SHOPP and STIP-eligible transportation projects.

The goals and objectives assembled for this chapter are intended to guide Caltrans' advance mitigation project scoping decisions toward those choices that provide the greatest environmental benefit available through the advance mitigation planning and delivery processes. Such projects undertaken by Caltrans should contribute to wildlife resource protection and enhancement and should yield compensatory mitigation usable by future transportation projects, as specified in SHC § 800.¹ Compensatory mitigation usable by future transportation projects should be expressed in standard units or terms recognized by the natural resource regulatory agencies.

Information presented in this chapter is for advance mitigation project scoping purposes only. Transportation projects must still go through environmental and permitting processes and must demonstrate avoidance and minimization efforts prior to compensation.

7.1 Approach

For the purposes of this RAMNA, conservation goals and objectives are a broad set of regional natural resource sustainability goals and objectives that are consistent with both regulatory requirements and conservation science. To determine the wildlife resource conservation goals and objectives applicable to the GAI, Caltrans:

¹ Pursuant to SHC § 800.9, to the maximum extent practicable, the information required for an RCIS is presented in this RAMNA. During CDFW's review of an RCIS, CDFW determines whether the goals and objectives presented in the RCIS are consistent with FGC § 1852, subdivision (c)(8).

- First, in Section 7.2, identifies the natural resource regulatory agencies with the authority to condition transportation projects with wildlife resource-related compensatory mitigation in the GAI.
- Then, in Section 7.3, summarizes the life history information for the five wildlife species of mitigation need chosen to focus the assessment, as identified in Section 1.5.
- Next, in Sections 7.4, 7.5, and 7.6, for the species of mitigation need, identifies:
 - Federal and state binding and non-binding regional conservation and land management plans
 - Current and projected pressures and stressors for which there is a potential transportation nexus
 - Opportunities to enhance the conservation benefits through advance mitigation projects
 - Opportunities to benefit other special-status and native wildlife species through advance mitigation
- Last, analyzes the aforementioned information in relation to the transportation-related activities that could potentially affect the species of mitigation need, and the potential range of compensatory mitigation that could satisfy a future transportation project condition associated with the activities.

The result of this analysis is a framework of conservation goals and objectives for use in advance mitigation project scoping (Section 7.7).

7.2 Natural Resource Regulatory Agencies with Wildlife Resources Oversight

Table 7-1 lists the natural resource regulatory agencies with the authority to condition transportation projects delivered in the GAI with wildlife resource-related compensatory mitigation. The aquatic resources used by wildlife, such as streams, wetlands, and non-wetland waters, are also regulated by other natural resource regulatory agencies. This RAMNA identifies goals and objectives for aquatic resources separately in Chapter 8.

Table 7-1. Natural Resource Regulatory Agencies with Wildlife Resources Oversight

Agency ^a	Summary
CCC	CCC protects the coast by planning for and regulating new development in the coastal zone pursuant to the policies of the Coastal Act. Through the issuance of coastal development permits, CCC implements the policies of the Coastal Act, including protecting sensitive resources, water quality, and public access to the coast, and protecting and requiring mitigation for impacts on wetlands, WOTUS, ESHAs, etc. CCC also coordinates with local governments in developing and certifying LCPs, which allow local governments to assume the authority to issue coastal development permits within their jurisdiction. The agency also provides comprehensive guidance to local governments and project applicants regarding planning for and adapting to climate change and sea-level rise. The CCC, agency, or authorized local government with a certified LCP also determines how ESHAs are defined, such as by specific species habitats or as specific geographic areas.
CDFW – Region 4 (Central), Region 5 (South Coast), and Region 6 (Inland Deserts)	CDFW oversees the conservation, protection, and management of fish, wildlife, native plants, and the habitats necessary for biologically sustainable populations of those species in California. CDFW's Environmental Review and Permitting, Conservation and Mitigation Banking, NCCP, and RCIS programs implement sections of the FGC, Title 14 of the California Code of Regulations, and Public Resources Code § 21000, et seq. These programs help fulfill CDFW's mission to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values. CDFW issues permits and agreements to project proponents under its authorities, including incidental take permits and consistency determinations under CESA, Lake and Streambed Alteration Agreements, approvals of conservation and mitigation banks, approvals of MCAs and RCISs, and NCCP permits. NCCP permits can authorize the take of fully protected species.
FWS	FWS regulates all federally protected wildlife species and critical habitats and requires consultation and coordination to be in compliance with the ESA. FWS authorities, including its role in mitigation, are codified under multiple statutes that address management and conservation of natural resources from many perspectives, including, but not limited to, the effects of land, water, and energy development on fish, wildlife, plants, and their habitats. FWS approves HCPs to address impacts on federally protected species, for projects lacking a federal nexus, under ESA § 10(a)(1)(B). For projects with a federal nexus and potential impacts on federally protected species, FWS issues biological opinions under Section 7 of the ESA.
NMFS	NMFS has jurisdiction over all federally protected fish and wildlife marine species and critical habitats and requires consultation and coordination to be in compliance with the ESA. Similar to FWS, NMFS manages wildlife and fisheries resources in the marine and estuarine environment. NMFS issues biological opinions under Section 7 of the ESA for projects that may affect federally listed species managed by the agency. In addition, NMFS manages marine mammals under the Marine Mammal Protection Act, with the exception of sea otters, which are managed by FWS. NMFS is also responsible for addressing impacts on EFH under the Magnuson-Stevens Fishery Conservation and Management Act.

^a In addition to the agencies listed above, the Water Boards may exert jurisdiction over species to the extent that WILD/RARE/WARM/COLD/SPWN beneficial uses exist and would be affected by a project.

7.3 Species of Mitigation Need

An overview of wildlife resources is provided in Chapter 2. As described in Section 1.5, species of mitigation need were selected to focus the planning effort and improve the probability that advance mitigation projects undertaken by Caltrans will yield credits (or similar) that will be usable during the planning period. To this end, the species of mitigation need identified for the GAI are coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, California red-legged frog, and mountain lion (Southern California/Central Coast ESU). Each species is briefly described below.

7.3.1. Coastal California Gnatcatcher

Coastal California gnatcatcher is a federally threatened bird species and a California species of special concern (Mock 2004). The species ranges from Baja California north through the coastal lowlands of San Diego and Orange Counties, and along the Peninsular Ranges into western Riverside and extreme southwestern San Bernardino Counties, as well as locally in the Palos Verde Peninsula portion of the Los Angeles coast, and in very small numbers as far north as Ventura County (FWS 2010b).

Coastal California gnatcatchers prefer coastal sage scrub habitat dominated by coastal sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*). They prefer more open sites over dense sage scrub and are more abundant in areas where the sage scrub interfaces with grassland habitat rather than transitioning to chaparral (Winchell and Doherty 2018). Coastal California gnatcatchers are non-migratory, with individual birds not typically dispersing farther than 10 miles from where they hatch (Mock 2004).

7.3.2. Least Bell's Vireo

Least Bell's vireo is a federally and state endangered bird species (FWS 2006). There are four recognized subspecies of Bell's vireo, two of which nest in California. The least subspecies is the only subspecies that nests in the GAI. It breeds in the Transverse and Peninsular Ranges, in the coastal foothills and valleys from Ventura County south through San Diego County, and as far east into the Mojave Desert as the Coachella Valley (Kus 2002). There are also isolated breeding populations in the southern Sierra Nevada mountains (Lower Kern River Valley), and rare occurrences of breeding in the central California Coast Range mountains as far north as Santa Clara County. The species was thought to be extirpated from the Central Valley by the late twentieth century, but a few pairs have been recorded in recent decades from Merced County to Yolo County (FWS 2021c).

Least Bell's vireos nest exclusively in riparian habitats, favoring those with native willows and cottonwoods and dense streamside vegetation in which they forage by gleaning insects from foliage. They typically construct their cup-shaped nests less than 5 feet from the ground in the forks of shrub or tree branches. They are a neotropical migrant species, wintering in Baja California, arriving in California to nest in March, and mostly departing the state by the end of September (Kus 2002).

Least Bell's vireos prefer much the same habitat types and structures as those preferred by southwestern willow flycatchers. These two species are typically analyzed, consulted, and mitigated for together because of their similar habitat preferences. The least Bell's vireo's range is more extensive in the GAI than that of southwestern willow flycatcher, consisting of several locations throughout the Caltrans District 7 GAI that show anticipated SHOPP projects occurring during the 10-year planning period. However, the SAMNA model does not show impacts on suitable habitat for the species from these projects.

7.3.3. Southwestern Willow Flycatcher

Southwestern willow flycatcher is a federally and state endangered bird species (Bombay et al. 2003; FWS 2014). There are five recognized subspecies of willow flycatcher, three of which nest in California. The southwestern subspecies, which nests at scattered locations from the Mexican border north to the Owens Valley and west to the Santa Ynez Valley in Santa Barbara County, is the only subspecies that nests in the GAI (Craig and Williams 1998).

Southwestern willow flycatchers nest exclusively in riparian habitats, favoring those with native willows and cottonwoods and dense streamside vegetation interspersed with small openings in which they aerially forage for flying insects. They prefer much the same habitat types and structures as those preferred by least Bell's vireos (FWS 2006). These two species are typically analyzed, consulted, and mitigated for together because of their similar habitat preferences. Southwestern willow flycatchers construct their cup-shaped nests in the forks of shrub or tree branches anywhere from 2 to 59 feet above the ground (Craig and Williams 1998). They are a neotropical migrant species, wintering from central Mexico to northern Ecuador and Peru, arriving in California to nest in May and early June, and mostly departing the state by the end of September (Bombay et al. 2003).

As discussed in Section 1.5, anticipated impacts on southwestern willow flycatcher habitat in the District 7 GAI are not included in the SAMNA results. This is due to a limitation in the model, which relies on accurate range maps for wildlife species to accurately assess the range and distribution of each species in the model. SAMNA then uses these geospatial data to determine anticipated impacts on suitable habitats within the range for each species. In the case of southwestern willow flycatcher (and least Bell's vireo), CWHR range data for the species do not accurately describe the actual species distribution in the GAI. Figure 7-1 illustrates the CWHR ranges for both southwestern willow flycatcher and least Bell's vireo within the GAI. Southwestern willow flycatcher is shown to occur in only three locations in the GAI: along the Santa Ynez River in Santa Barbara County, along the Santa Clara River in Ventura County, and along the Santa Margarita River in San Diego County. No SHOPP projects are anticipated to occur in any of these areas.

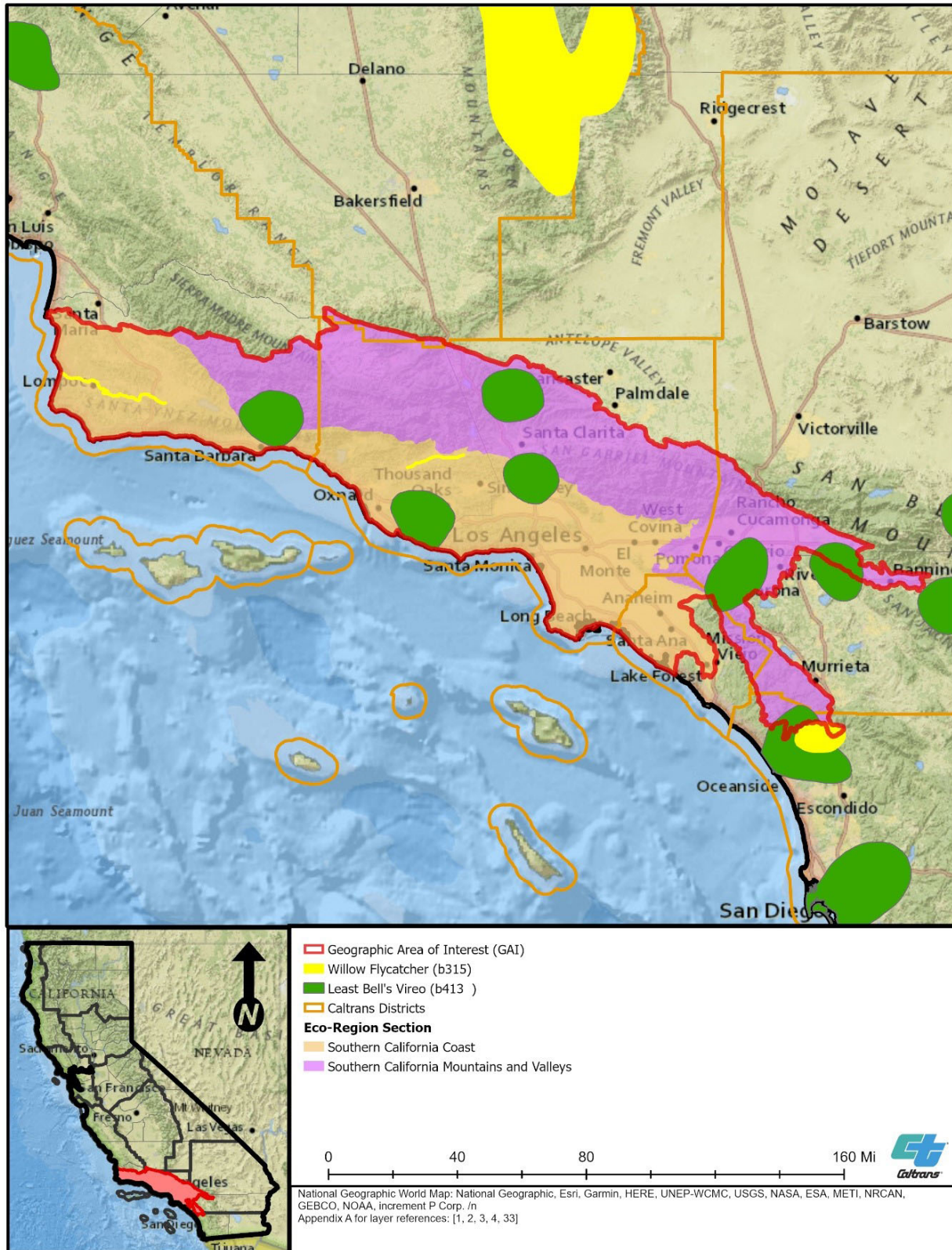
7.3.4. California Red-legged Frog

California red-legged frog is a federally threatened amphibian species and a California species of special concern that has been extirpated from 70 percent of its historical range.

Most California red-legged frog occurrences have been recorded below 3,500 feet; however, they can be found from sea level up to elevations of 5,200 feet (FWS 2002a). Eight Recovery Units were established by the *Recovery Plan for the California Red-legged Frog* (FWS 2002a). The GAI falls within the Northern Transverse Ranges and Tehachapi Mountains and Southern Transverse and Peninsular Ranges California red-legged frog Recovery Units.

Typical aquatic breeding habitat for California red-legged frog includes slow-moving streams and pools within streams and human-made ponds that can sustain all the aquatic life stages of the species. These areas must hold water for at least 20 weeks during the year, which is the minimum amount of time needed for breeding and tadpole development and metamorphosis (FWS 2010a; Hayes and Jennings 1988). Aquatic habitat need not be present every year because the frog can live 8 to 10 years in the wild (FWS 2010a). Non-breeding aquatic and riparian habitat includes springs, seeps, moist cracks within dried ponds, and vegetated areas growing within the floodplains of rivers and streams. These areas do not hold enough water for frog breeding but provide the space needed for foraging and cover to sustain individuals and are particularly important during drought periods and for dispersal to other breeding habitats (Alvarez 2004; FWS 2010a). Upland habitats are also important because they buffer aquatic habitats from degradation and provide space for foraging, sheltering, dispersal, and avoiding predation (FWS 2010a). Upland habitat consists of areas where California red-legged frog can seek shelter such as under boulders, rocks, animal burrows, fallen logs, and agricultural debris such as watering troughs and haystacks (FWS 2010a; Jennings and Hayes 1994).

Figure 7-1. CWHR Range Map for Southwestern Willow Flycatcher and Least Bell's Vireo



7.3.5. Mountain Lion (Southern California/Central Coast ESU)

Until 2021, mountain lion was a specially protected mammal under the California Wildlife Protection Act of 1990, whereupon its status changed. The Southern California/Central Coast ESU of mountain lion is a candidate for listing as threatened under the CESA. The Southern California/Central Coast ESU includes all populations of mountain lions from the San Francisco Bay Area south along the Coast Ranges west of Interstate 5, and in Southern California from Highway 58 and Interstate 15 south to the border with Mexico, and eastward to the Nevada and Arizona borders (CDFW 2020b). The GAI lies entirely within the boundary of this ESU.

Mountain lions are large cats that may occupy many different habitat types, including conifer forests, oak and riparian woodlands, scrub, chaparral, grasslands, and deserts. They typically require areas that are relatively undisturbed by human activity (CDFW 2020b). Individual mountain lion territories are extremely large, with one study in Southern California finding that, in a single year, females had home ranges averaging 93 square kilometers and males averaging 363 square kilometers (Dickson and Beier 2002). Large ungulates such as deer make up a substantial majority of their diet, although they may opportunistically prey on a wide variety of other species as well. The primary causes of mortality in mountain lions are competitive predation by other mountain lions and human causes such as vehicle strikes and depredation take (CDFW 2020b). As outlined in Chapter 2, CDFW's *Wildlife Barriers Report* identified five priority wildlife movement barriers within the GAI. Mountain lion is considered a target species for four of those five: Highway 101 through Liberty Canyon, Interstate 5 north of Sylmar, State Route 33 from Red Mountain to Sulphur Mountain, and State Route 91 near B Canyon.

7.4 Regional Conservation Efforts

Caltrans' understanding of natural resource regulatory agency conservation goals and objectives is that they are generally designed to protect existing populations and habitat, and include acquiring, protecting, restoring, and/or enhancing habitat and linkages. Several conservation and land management plans listed in Table 3-1, relevant to the species of mitigation need, identify key habitats or designate specific lands or areas to protect for conservation of the species of mitigation need in the GAI. For example, several LCPs listed in Appendix D include ESHAs with species attributes. These conservation and land management plans are presented in Table 7-2.

The conservation and land management plans include measures to address specific known, ongoing threats to individuals and populations, which are incorporated into and/or inform the advance mitigation conservation goals and objectives compiled below. Caltrans may also use this information during advance mitigation project scoping to help compensatory mitigation efforts in the GAI align with the goals and objectives of natural resource regulatory agencies that approve mitigation.

Table 7-2. Documents Identifying Areas for Species of Mitigation Need Conservation in the GAI

Document	Reference	Areas of Important Habitat
Special-status Taxa Documents	See below	See below
<i>Revised Designation of Critical Habitat for Coastal California Gnatcatcher</i>	FWS 2007	Identifies critical habitat for the coastal California gnatcatcher
<i>Coastal California Gnatcatcher (Poliophtila californica californica) 5-year Review: Summary and Evaluation</i>	FWS 2010b	Identifies 11 NCCP/HCP subregions anticipated to address coastal California gnatcatcher conservation, including 8 within the GAI, which include: <ul style="list-style-type: none"> ▪ Palos Verde Peninsula NCCP ▪ San Bernardino Valley-wide Multi-Species Habitat Conservation Plan ▪ Western Riverside County Multiple Species Habitat Conservation Plan ▪ Northern Orange County Subregion ▪ Coastal/Central Orange County NCCP ▪ Southern Orange County NCCP ▪ Camp Pendleton Resource Management Plan ▪ San Diego Northern Multiple Species Conservation Program Subarea
<i>Designation of Critical Habitat for the Least Bell's Vireo</i>	FWS 1994	Identifies 10 Critical Habitat Units for least Bell's vireo, including 4 within the GAI, which include: <ul style="list-style-type: none"> ▪ Santa Ynez River (Santa Barbara County) ▪ Santa Clara River (Los Angeles and Ventura Counties) ▪ Santa Ana River (Riverside and San Bernardino Counties) ▪ Santa Margarita River (San Diego County)
<i>Least Bell's Vireo (Vireo bellii pusillus) 5-Year Review Summary and Evaluation</i>	FWS 2006	Identifies 11 Recovery Units for least Bell's vireo, including 5 within the GAI, which include: <ul style="list-style-type: none"> ▪ Santa Ynez River ▪ Santa Clara River ▪ Orange and Los Angeles Counties (metapopulation) ▪ Santa Ana River ▪ Camp Pendleton Santa Margarita River (only the Santa Margarita River segment is in the GAI)
<i>Final Recovery Plan for the Southwestern Willow Flycatcher (Empidonax traillii extimus)</i>	FWS 2002b	Identifies Recovery Units for the southwestern willow flycatcher. The GAI lies entirely within the Coastal California Recovery Unit.

Document	Reference	Areas of Important Habitat
<i>Designation of Critical Habitat for Southwestern Willow Flycatcher</i>	FWS 2013a	Identifies critical habitat for the southwestern willow flycatcher.
<i>Recovery Plan for the California Red-legged Frog (Rana aurora draytonii)</i>	FWS 2002a	Identifies California red-legged frog Recovery Units and their respective Core Areas, including those within the GAI: <ul style="list-style-type: none"> ▪ Northern Transverse Ranges and Tehachapi Mountains Recovery Unit ▪ Southern Transverse and Peninsular Ranges Recovery Unit ▪ Santa Maria River – Santa Ynez River Core Area ▪ Sisquoc River Core Area ▪ Ventura River – Santa Clara River Core Area ▪ Santa Monica Bay – Ventura Coastal Streams Core Area ▪ San Gabriel Mountain Core Area ▪ Forks of the Mojave Core Area ▪ Santa Ana Mountain Core Area ▪ Santa Rosa Plateau Core Area
<i>Revised Designation of Critical Habitat for the California Red-legged Frog</i>	FWS 2010a	Identifies critical habitat for the California red-legged frog
Conservation and Land Management Documents	See below	See below
<i>Angeles National Forest Management Plan</i>	USFS 2005a	<ul style="list-style-type: none"> ▪ Identifies coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, California red-legged frog, and mountain lion as occurring. ▪ Identifies general management actions for sensitive wildlife species, including surveys and monitoring, habitat acquisition and protection, invasive species control, prevention of the spread of pathogens, and wildfire prevention.
<i>Antelope Valley Draft Regional Conservation Investment Strategy</i>	ICF 2019	<ul style="list-style-type: none"> ▪ Includes least Bell's vireo, willow flycatcher, and mountain lion as focal species and defines a conservation target of the preservation/protection of 2,352, 1,165, and 14,721 acres of potential habitat for the three species, respectively. ▪ Antelope Valley RCIS is currently in draft form, subject to change.
<i>Burton Mesa Ecological Reserve Land Management Plan</i>	Condor Environmental Planning Services 2007	<ul style="list-style-type: none"> ▪ Identifies California red-legged frog and mountain lion as occurring in the reserve. ▪ Prioritizes aquatic habitats in the Santa Lucia and Encina Management Units as conservation targets for California red-legged frog. ▪ Includes general management goals to survey deer and mountain lion populations and assess interactions of the two species.

Document	Reference	Areas of Important Habitat
<i>CEHC</i>	Spencer et al. 2010	<ul style="list-style-type: none"> Identifies Natural Landscape Blocks and Essential Connectivity Areas in the South Coast Ecoregion. Identifies 27 Essential Connectivity Areas within or partially within the South Coast Ecoregion, and notes the value to mountain lions of the proposed Interstate 15 Santa Ana-Palomar linkage.
<i>Chino Hills State Park General Plan</i>	California State Parks 1999	<ul style="list-style-type: none"> The park has populations of mountain lions, coastal California gnatcatchers, least Bell's vireos, and willow flycatchers. Includes goals for enhancement of wildlife movement corridors, restoration of riparian habitat in the Lemon Grove Area, and removal of giant reed from the portion of the Santa Ana River that flows through the park.
<i>Cleveland National Forest Land Management Plan</i>	USFS 2005b	<ul style="list-style-type: none"> Identifies coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and mountain lion as occurring. Identifies general management actions for sensitive wildlife species, including surveys and monitoring, habitat acquisition and protection, invasive species control, prevention of the spread of pathogens, and wildfire prevention.
<i>Coachella Valley Multiple Species HCP/NCCP</i>	Coachella Valley Association of Governments 2008	<ul style="list-style-type: none"> Includes least Bell's vireo and southwestern willow flycatcher as covered species. Identifies 3,675 acres of modeled habitat for least Bell's vireo within the Plan Area, and the Plan would ensure conservation of 2,911 of these acres. Approximately 1,629 acres of the modeled habitat are within existing conservation lands and would be managed as part of a reserve system. The Plan would conserve an additional 1,282 acres of the modeled breeding habitat. Identifies 2,730 acres of modeled habitat for the southwestern willow flycatcher within the Plan Area, and the Plan would ensure conservation of 2,563 of these acres. Approximately 1,526 acres of the modeled habitat are within existing conservation lands and would be managed as part of the reserve system. The Plan would conserve an additional 1,037 acres of the modeled breeding habitat.
<i>Conserving California's Coastal Habitats: A Legacy and a Future with Sea Level Rise</i>	Heady et al. 2018	<ul style="list-style-type: none"> Identifies coastal California gnatcatcher, least Bell's vireo, southwest willow flycatcher, and California red-legged frog as imperiled species within the study area. Identifies the vulnerability of different habitats to sea-level rise within the study area.
<i>Crystal Cove State Park General Plan</i>	California State Parks 2003	<ul style="list-style-type: none"> The park has populations of coastal California gnatcatchers. Includes dispersal routes and suitable habitat within the park.

Document	Reference	Areas of Important Habitat
<i>Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California</i>	U.S. Navy 2018	<ul style="list-style-type: none"> Coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher are known to occur on the base. Outlines conservation measures to protect coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher, such as avoidance of habitats during the nesting season and wildfire prevention measures during training exercises. Identifies base-wide management practices that benefit coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher, such as invasive, nonnative vegetation control; cowbird trapping; and coastal sage scrub habitat restoration.
<i>Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook</i>	U.S. Navy 2016	<ul style="list-style-type: none"> Coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher are known to occur on the base. Outlines extensive and ongoing species monitoring efforts and conservation measures, including seasonal work restrictions, nesting surveys, identification of Priority Management Areas, and management of grazing near known habitat.
<i>Habitat Restoration and Enhancement Plan Nature Reserve of Orange County Central Coastal Subregion</i>	LSA Associates 2003	<ul style="list-style-type: none"> Identifies coastal California gnatcatcher as occurring in the following reserve areas: Bommer Canyon, Shady Canyon, Crystal Cove State Park Back Country, Crystal Cove State Park Bluff, Laguna Canyon, Aliso/Wood Canyons Wilderness Park, UCI Ecological Reserve, Buck Gully, Sand Canyon/Quail Hill, El Toro Refuge, Lower Fremont/Gypsum Canyons, Hicks Canyon, Lomas Ridge, Orange Hills/Shirley Grindle Park, Peters Canyon Regional Park, Santiago Oaks Regional Park, Siphon Reservoir, Weir Canyon, and Whiting Ranch Wilderness Park. Identifies least Bell's vireo as occurring in the Crystal Cove State Park Back Country and Aliso/Wood Canyons Wilderness Park reserve areas. Includes general restoration goals for gnatcatcher habitat, focused largely on invasive plant species control.
<i>Los Angeles County Significant Ecological Area Program</i>	Los Angeles County 2020	<ul style="list-style-type: none"> A permitting program for SEAs in Los Angeles County, all of which (except the Santa Catalina Island and Terminal Island SEAs) intersect with the GAI. Identifies permit requirements and general design standards to facilitate wildlife movement through SEAs.
<i>Los Padres National Forest Management Plan</i>	USFS 2005c	<ul style="list-style-type: none"> Identifies California red-legged frog, least Bell's vireo, southwestern willow flycatcher, and mountain lion as occurring. Identifies general management actions for sensitive wildlife species including surveys and monitoring, habitat acquisition and protection, invasive species control, prevention of the spread of pathogens, and wildfire prevention.

Document	Reference	Areas of Important Habitat
<i>Malibu Creek State Park General Plan and Final Impact Report</i>	California State Parks 2005a	<ul style="list-style-type: none"> Includes general goals for wildlife habitat restoration and maintenance of wildlife movement corridors. Mountain lions are known to inhabit the park, and coastal California gnatcatchers are expected to occur as well. Least Bell's vireos are considered to have a moderate potential to occur in the park, while southwestern willow flycatchers are considered to have a low potential to occur in the park.
<i>Orange County Central and Coastal Subregions NCCP/HCP</i>	R.J. Meade Consulting 1996	<ul style="list-style-type: none"> Includes coastal California gnatcatcher as a covered species and southwestern willow flycatcher as a conditionally covered species. Proposes a 37,378-acre reserve system including 18,500 acres of coastal sage scrub habitat for coastal California gnatcatcher. Southwestern willow flycatcher was not present in the HCP/NCCP area at the time the NCCP/HCP was drafted, but suitable habitat was known to be present that could become occupied. Species was subsequently detected in the area in Cañada Gobernadora Creek after the HCP/NCCP was finalized (FWS 2013a).
<i>Orange County Transportation Authority NCCP/HCP</i>	ICF 2016	<ul style="list-style-type: none"> Includes coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and mountain lion as covered species. Six preserves containing a total of 261.9 acres of scrub habitat for coastal California gnatcatcher were already acquired for the HCP reserve system and another 126.3 acres of restoration projects were approved by the time the NCCP/HCP was finalized. Four preserves containing 18.3 acres of riparian habitat for least Bell's vireo and southwestern willow flycatcher were already acquired for the HCP reserve system, and nine more restoration projects totaling another 110.4 acres of riparian habitat were approved by the time the HCP/NCCP was finalized. Six preserves containing 1,013.3 acres of suitable habitat for mountain lion were already acquired by the time the NCCP/HCP was finalized. Several restoration projects related to habitat linkages and movement of mountain lions were approved.
<i>San Bernardino County Draft Regional Conservation Investment Strategy</i>	Dudek 2018	<ul style="list-style-type: none"> Preliminary RCIS for San Bernardino County, currently under revision and subject to change. Focal species include coastal California gnatcatcher, California red-legged frog, and mountain lion. Conservation targets are based on vegetation types rather than individual species. Identifies priority areas for conservation of vegetation types benefitting the focal species.

Document	Reference	Areas of Important Habitat
<i>San Bernardino National Forest Management Plan</i>	USFS 2005d	<ul style="list-style-type: none"> Identifies coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, California red-legged frog, and mountain lion as occurring. Identifies general management actions for sensitive wildlife species including surveys and monitoring, habitat acquisition and protection, invasive species control, prevention of the spread of pathogens, and wildfire prevention.
<i>Santa Clara River Enhancement and Management Plan</i>	AMEC 2005	<ul style="list-style-type: none"> Identifies California red-legged frog, least Bell's vireo, and southwestern willow flycatcher as present in the watershed. The plan includes river-wide goals such as removal of nonnative species, restoration of habitat, and reach-specific efforts.
<i>Santa Monica Mountains National Recreation Area General Management Plan Environmental Impact Statement</i>	National Park Service 2002	<ul style="list-style-type: none"> Identified mountain lion as present in the recreation area and identifies several potential off-site linkages that should be created/enhanced/maintained.
<i>Santa Susana Pass State Historic Park General Plan/ Environmental Impact Report</i>	California State Parks 2008	<ul style="list-style-type: none"> Includes general goals for wildlife habitat restoration and maintenance of wildlife movement corridors. Mountain lions are confirmed as occurring within the park, while California red-legged frogs and coastal California gnatcatchers are listed as having the potential to occur, and least Bell's vireos are listed as unlikely to occur within the park.
<i>South Coast Resource Management Plan Draft Resource Management Plan and Environmental Impact Statement</i>	BLM 2011	<ul style="list-style-type: none"> Identifies coastal California gnatcatcher and their designated critical habitat as present and includes the following species-specific goals: <ul style="list-style-type: none"> Maintain and enhance coastal sage scrub habitat required for this species. Ensure no adverse modification of critical habitat. Manage fire frequency and other disturbances to maintain a semi-open shrub structure in coastal scrub. Identifies least Bell's vireo and southwestern willow flycatcher as present and includes goals to manage riparian areas for a suite of habitat features that could support use by these species.

Document	Reference	Areas of Important Habitat
SWAP	CDFW 2015	<ul style="list-style-type: none"> Identifies California red-legged frog, least Bell's vireo, and southwestern willow flycatcher as Species of Greatest Conservation Need for the South Coast Province, which encompasses the GAI. Links California red-legged frogs to the following conservation units and targets: American southwest riparian forest and woodland, California grassland and flowerfields, freshwater marsh, and the South Coast native aquatic herp assemblage. Links least Bell's vireo and southwestern willow flycatcher to the following conservation units and targets: American Southwest Riparian Forest and Woodland. Defines a broad target of increasing the acreage of specific vegetation types and habitats available to focal species by 5 percent over their 2015 levels by 2025.
<i>Upper Santa Clara River Integrated Regional Water Management Plan</i>	Kennedy/Jenks Consultants 2014	<ul style="list-style-type: none"> Identifies 5 SEAs in the watershed, with California red-legged frog present in the Santa Clara River SEA and Santa Felicia SEA. Includes general guidelines related to water quality enhancement and maintenance of wildlife corridors.
<i>Western Riverside County Multiple Species Habitat Conservation Plan</i>	Dudek 2003	<ul style="list-style-type: none"> Identifies 153,000 acres needed for conservation of focal species, including coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, California red-legged frog, and mountain lion. Defines an extensive reserve system of existing and proposed core habitat areas and linkages between them that would benefit coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, California red-legged frog, and mountain lion. Several of the core habitats and linkages overlap with the GAI in the westernmost areas of Riverside County.
Various County or City General Plans	See below	See below
<i>City of Jurupa Valley</i>	City of Jurupa Valley 2017	<ul style="list-style-type: none"> Includes a policy to conserve large intact habitat areas consisting of coastal sage scrub, chaparral, and grasslands to support known populations of coastal California gnatcatcher. Includes a policy to conserve known populations of least Bell's vireo and southwestern willow flycatcher along the Santa Ana River.
<i>City of Walnut</i>	City of Walnut 2018	<ul style="list-style-type: none"> Includes a policy to protect and enhance natural habitat areas, specifically identifying coastal sage scrub for coastal California gnatcatcher as a priority.

7.5 Pressures and Stressors

Pressures and stressors refer to environmental trends or physical, chemical, or biological factors or conditions that affect the species of mitigation need or its habitat. According to the SWAP (CDFW 2015), a pressure is defined as “an anthropogenic (human-induced) or natural driver that could result in changing the ecological conditions of the target. Pressures can be positive or negative depending on intensity, timing, and duration. Negative or positive, the influence of a pressure to the target is likely to be significant.” Additionally, stress is defined in the SWAP as “[a] degraded ecological condition of a target that resulted directly or indirectly from negative impacts of pressures (e.g., habitat fragmentation)” (CDFW 2015). The *Recovery Plan for the California Red-legged Frog* (FWS 2002a), the *Coastal California Gnatcatcher 5-year Review: Summary and Evaluation* (FWS 2010b), the *Draft Recovery Plan for the Least Bell’s Vireo* (FWS 1998b), and the *Recovery Plan for Southwestern Willow Flycatcher* (FWS 2002b) refer to these pressures and stressors as threats.

The plans included in Table 7-2 identify multiple pressures and stressors contributing to the decline of the species of mitigation need within their ranges (FWS 1998b, 2002a, 2002b, 2010b). These pressures and stressors were evaluated in relation to the types of effects that could result from transportation projects funded through SHOPP and STIP and could benefit from in-kind compensatory mitigation purchased or established through an advance mitigation project.

7.5.1. Habitat Loss, Fragmentation, and Degradation

Urbanization and other anthropogenic factors such as roads, poor grazing practices, and habitat invasion by nonnative species have led to the loss and degradation of existing habitat for all species of mitigation need. Additionally, roads and urbanization have resulted in habitat fragmentation and a decrease in connectivity between habitats that support species of mitigation need populations, as well as increased mortality of the species from vehicle strikes.

Habitat loss and alteration have been the primary cause of California red-legged frog population declines. Current suitable habitats are often small remnants of what were historically much larger habitats covering entire watersheds. Roads in particular have been implicated in causing habitat fragmentation, often causing mass mortality of amphibians attempting to cross (FWS 2002a).

The loss and fragmentation of habitat in conjunction with urban and agricultural development are the primary threats to coastal California gnatcatcher (FWS 2007). Genetic analyses of the species in southern California have shown that while the overall effective population size is at an adequate level, there was evidence of reduced connectivity and loss of genetic diversity within the GAI in Ventura and Los Angeles Counties as a result of increased urbanization in those areas (FWS 2010b).

Loss and modification of riparian habitat is considered the primary driver of declines in least Bell's vireo and southwestern willow flycatcher populations. Urbanization, agricultural development, and human-caused modification of stream flow regimes have caused considerable loss and degradation of natural riparian habitats throughout the range of both species (FWS 1998b, 2002b).

Human-caused habitat fragmentation and lack of adequate linkages have been implicated in mountain lion population declines in the Southern California/Central Coast ESU. Genetic diversity is critically low in three of the subpopulations within the GAI (the Santa Monica Mountains, San Gabriel/San Bernardino Mountains, and Santa Ana Mountains subpopulations), suggesting that inbreeding depression may be a significant near-term problem (Benson et al. 2019). Vehicle strikes also contribute to a proportion of overall mortality in mountain lions in the Santa Ana Mountains population (CDFW 2020b).

7.5.2. Invasive Species

Transportation projects and associated ongoing maintenance activities have the potential to introduce and/or spread nonnative, invasive species. The entry of invasive, nonnative species into an ecosystem may reduce biodiversity, degrade habitats, alter native genetic diversity, shift habitat type, and further threaten already endangered or threatened natural resources.

California red-legged frogs are susceptible to predation at various life stages from several nonnative invasive species, including American bullfrog, African clawed frog, red swamp crayfish, signal crayfish (*Pacifastacus leniusculus*), western mosquitofish, and centrarchid fish (such as bass). It is often unclear whether these species are directly eliminating California red-legged frogs from the habitats that they invade, or whether conditions within those habitats have changed and now favor the invasive species. California red-legged frogs may persist despite the presence of some of these invasive species depending on site-specific factors, although reproductive success is often severely depressed (FWS 2002a).

A number of invasive plant species, such as tocalote artichoke thistle, red brome, Russian thistle, pampas grass, fennel, black mustard, fountaingrass, iceplant, and ripgut grass, may degrade habitat quality for coastal California gnatcatcher (CDFW 2015). Considerable research has been done on the effects of tamarisk, an invasive plant species common in riparian areas of the southwestern United States, on southwestern willow flycatchers. They have been documented breeding successfully in areas dominated by tamarisk, and ultimately tamarisk may have neutral or beneficial effects on southwestern willow flycatchers (FWS 2014). Giant reed, another common invasive plant species in riparian areas, may form dense, monotypic clusters that are unsuitable for nesting least Bell's vireos and southwestern willow flycatchers (FWS 2006, 2014). Brown-headed cowbirds are known to parasitize nests of coastal California gnatcatchers, least Bell's vireos, and southwestern willow flycatchers. Cowbirds thrive in human-altered habitats such as suburban and agricultural areas, and their populations and range have

expanded into California from their original native range in the Great Plains region with increased human presence on the landscape (CDFW 2015, FWS 1998b, 2014).

7.5.3. Disease and Predation

Diseases, such as various forms of ranavirus and a chytrid fungus that can lead to mortality in certain amphibians and has the potential to affect their populations, may affect California red-legged frogs. Though the effects of the chytrid fungus, often referred to as “Bd,” on California red-legged frogs is not well known, it is known to cause a deadly amphibian disease called chytridiomycosis (FWS 2002a). Disease is not considered to be a major threat to the coastal California gnatcatcher, the least Bell’s vireo, or the southwestern willow flycatcher (FWS 2010b, 2006, 2014). Although feline infectious peritonitis, feline leukemia virus, and rabies have been documented in mountain lions, their prevalence is extremely low and disease in general is not believed to be a significant driver of mountain lion population declines (CDFW 2020b).

As described above, predation is considered a major threat to many of the species of mitigation need in the GAI. Introduced fish, crayfish, and bullfrogs are known to predate all life stages of California red-legged frog (FWS 2002a). Coastal California gnatcatchers are subject to a high rate of nest predation, especially from snakes and corvids. However, they often re-nest after predation events, which bolsters their fecundity and likely counteracts the effects of this high rate of predation on their populations (FWS 2010b). Least Bell’s vireos and southwestern willow flycatchers are also subject to substantial rates of nest predation from a wide variety of bird, mammal, and reptile species. However, nest predation in these species does not appear to be higher than what is observed with other similar passerine bird species and, in general, predation is not considered to be major threat to either least Bell’s vireo or southwestern willow flycatcher populations (FWS 2006, 2014).

One of the leading causes of mortality in mountain lions is depredation by other mountain lions in what appear to be competitive interactions. Adult males are particularly aggressive in defending their very large territories from interlopers, and this behavior appears to be exacerbated in fragmented habitats with limited resources. Notably, the Santa Monica Mountains subpopulation within the GAI has had several documented cases of aggressive adult males killing their own siblings, offspring, and previous mates, thereby reducing recruitment into the next generation and eliminating potential future mating opportunities (Riley et al 2014). Cases of adult females abandoning their cubs have also been documented as a source of mortality for the Santa Monica Mountains subpopulation (CDFW 2020b).

7.5.4. Climate Change, Drought, Sea-level Rise, and Wildfire

Section 2.5 provided a brief overview of the GAI’s climate and available planning-level predictions for climate change and sea-level rise for the region. In the next 30 years, the climate is expected to change. Expected changes include extended periods of higher temperatures and more frequent heat waves in the summer; large fluctuations in precipitation, with dry years becoming drier and wet years becoming wetter; sea-level

rise; storm surges; cliff retreat attributable to coastal erosion; and an increased risk of wildfire and flooding (Caltrans 2019b).

Large populations of California red-legged frog can survive stochastic events such as fires, floods, or drought; however, many populations are small and isolated because of habitat loss and other stressors. These smaller and more vulnerable populations are in danger of extirpation because of climate change. Within the coastal regions of the GAI, drought can have negative impacts on the reproductive success of California red-legged frog. However, because of differing life history traits, invasive species such as bullfrogs may be more strongly affected by drought, thus providing a beneficial scenario for the survival of California red-legged frog that are better adapted to drought conditions (FWS 2002a).

Climate change is expected to bring with it an increased risk of wildfires (Caltrans 2019b), which could be extremely detrimental to coastal California gnatcatcher and mountain lion, which both occupy coastal scrub communities. Following fires, native coastal scrub vegetation is often outcompeted by nonnative annual grasses, which can dominate the system and permanently alter the habitat (FWS 2010b), rendering it less appropriate for the species of mitigation need. Drought can have mixed effects on southwestern willow flycatchers, decreasing nesting success in many cases while improving it in other cases depending on specific microhabitat conditions. However, the increased duration and severity of drought driven by climate change that is predicted for California is expected to have a severely negative long-term impact on southwestern willow flycatcher populations (FWS 2014).

Essential habitat connectivity in the GAI, including large remaining blocks of intact habitat or natural landscape, is shown in Figure 2-10. These areas are expected to provide opportunities for the species of mitigation need to respond to climate change stress by preserving large blocks of habitat and linkage areas that will allow migration toward more suitable habitat as the climate changes, and by providing protection for the ecological processes that support key habitat. The terrestrial climate change resilience rank from the ACE dataset (CDFW 2018a) is presented in Figure 2-6. There is a clear pattern of higher resilience in the westernmost and highest-elevation portions of the GAI. Resilience is lowest within the lower-elevation central and southern portions of the GAI. Most of this area is considered low or moderately resilient, with rankings ranging from 1 to 3, with the bulk of the area showing climate resiliency of 1 or 2. The highest elevation and westernmost portions of the GAI show higher resilience, ranging from 3 to 5, with the vast majority of this area showing climate resiliency rankings of 4 or 5.

7.5.5. Contaminants

Contaminants have been implicated as a threat to all species of mitigation need in the GAI. Pesticides, herbicides, mineral fertilizers, industrial chemicals, and airborne pollutants are known to have negative effects on wildlife. California red-legged frog is especially affected by aqueous pesticides because of their many life stages that take place within aquatic environments (FWS 2002a). Since their introduction in the 1990s,

neonicotinoids have become the most widely used insecticides in the world. More study is needed to determine the effects of neonicotinoid insecticides on coastal California gnatcatchers, least Bell's vireos, and southwestern willow flycatchers specifically. However, recent studies have shown that the reproductive toxicity of neonicotinoids to birds is high, and that, because of their systemic effect and persistence in the soil and groundwater, exposure to birds is a chronic risk long after introduction (American Bird Conservancy 2013).

Mountain lions have been found to suffer ill effects through ingestion of anticoagulant rodenticides, which cause internal hemorrhaging. Mountain lions ingest these chemicals either by consuming rodents that have been poisoned or by consuming other mesopredators that have, in turn, eaten poisoned rodents. Anticoagulant rodenticides accumulate in liver tissues and may persist in the body for several months (CDFW 2020b). CDFW's Wildlife Investigation Laboratory conducted necropsies of 111 mountain lions from 37 counties between January 2016 and February 2017 and found that 105 of them (94.5 percent) showed exposure to anticoagulant rodenticides, indicating that contamination is widespread within the population. Despite this, no decrease in body condition was found to be associated with exposure, and none of the individuals necropsied were found to have died of direct toxicity (Rudd et al. 2018). However, direct mortality from anticoagulant rodenticide toxicity has been documented previously within the GAI, as this was the cause of death for two radio-collared mountain lions found in the Simi Hills area of Ventura County during studies conducted between 1996 and 2006. Both individuals also had infestations of parasitic mites causing notoedric mange, a condition that is associated with anticoagulant rodenticide exposure in bobcats (Riley et al. 2007; Uzal et al. 2007).

7.6 Multi-species Benefits

While the species of mitigation need identified for this GAI are coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, California red-legged frog, and mountain lion, several other special-status species share habitat with these species and could potentially be affected by Caltrans transportation projects that will need compensatory mitigation to satisfy natural resource regulatory agency conditions on a transportation project. Advance mitigation planning provides Caltrans an opportunity to prioritize multispecies and multiresource benefits through acquisition, protection, restoration, and/or enhancement of habitat that provides the most multispecies benefits within the GAI. Figure 7-2 illustrates the regional terrestrial biodiversity in the GAI, according to CDFW's ACE GIS dataset. According to these data, high to moderate terrestrial biodiversity is present along much of the SHS with SHOPP projects, while other portions of the SHS within the GAI with SHOPP projects show low biodiversity, especially in the more urban portions of the Los Angeles metropolitan area. Habitats are mapped in Appendix C, and the other special-status species that may occur in these habitats are provided in Appendix E.

As described in Chapter 4, one HCP and one HCP/NCCP that cover multiple species occur within the GAI. While the primary purpose of these plans is to benefit the covered species addressed in each plan through acquisition, protection, and restoration of covered species habitat, these actions will benefit a variety of species that utilize these habitats. It is likely that any Caltrans mitigation requirements that are addressed through these plans will also provide benefits to other co-occurring species in addition to the covered species.

Other efforts, such as planting Caltrans easements with species beneficial to pollinators, are expected to contribute to biodiversity protection and enhancement in the GAI. In addition, planting native plants in Caltrans easements also enhances biodiversity by reducing invasive species cover. The installation of culvert ramps and fence jump-outs to facilitate safe movement across highways would also benefit numerous terrestrial wildlife species. Advance mitigation purchased or established to address anticipated impacts on species of mitigation need may also provide mitigation to compensate for impacts on these other species. Caltrans will consider the special-status species with the potential to co-occur in habitat in order to inform advance mitigation scoping and thereby improve the conservation benefits of mitigation in the GAI.

Figure 7-2. Terrestrial Biodiversity in the GAI



7.7 Advance Mitigation Conservation Goals and Objectives

The conservation goals and objectives compiled in Table 7-3 were intended to be relevant to anticipated future SHOPP and STIP transportation project mitigation needs, be consistent with the goals and objectives of natural resource regulatory agencies for the species of mitigation need, address pressures and stressors, and support species of mitigation need population recovery and success in the GAI.

Each conservation goal is supported by one or more conservation objectives and is meant to further guide Caltrans District 7 toward scoping advance mitigation projects to achieve the desired result specified by the goal. Project-specific objectives will be developed for advance mitigation projects in the future, during their project delivery phase in accordance with an instrument, mitigation credit agreement, or other project-specific agreement (Figure 1-2). Project-specific advance mitigation project objectives will be specific, measurable, achievable, relevant, and time-bound.

At the broad scale, these wildlife goals and objectives encompass large-scale ecological processes, environmental gradients, biological diversity, and regional wildlife linkages. These goals and objectives prioritize regional conservation that preserves intact habitat and provides habitat linkages and connectivity. Sub-objectives are included for each objective to guide Caltrans advance mitigation and project scoping toward those authorized actions that would create the greatest functional lift² or conservation benefit for the species of mitigation need in the GAI. Sub-objectives also capture specific measures from conservation and land management plans that address threats to the species of mitigation need.³ Several of the goals are interrelated, and many objectives could apply to more than one goal; objectives were grouped with the goal to which they most specifically aligned. Goals and objectives are generally presented in order from general to more specific. They are not presented in order of importance.

² For the purposes of this document, “functional lift” means the difference between an existing degraded condition and a restored or enhanced condition.

³ In accordance with both law and Caltrans policy, standard best management practices are followed on all Caltrans transportation projects. Hence, they are presumed and they are not itemized as goals and objectives for the AMP.

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Table 7-3. Advance Mitigation Conservation Goals and Objectives for the Species of Mitigation Need

Objective	Sub-Objective	Affected Species ^a	Alignment with Conservation and Management Plans ^b
Goal WILD-1: Conserve and expand habitat for species of mitigation need within the GAI to support ecosystem functions that are essential to recovery of the species	See below	See below	See below
Objective WILD-1.1: Acquire, protect, restore, and/or enhance habitat of sufficient quantity to offset estimated impacts on species of mitigation need within the GAI in advance of transportation project impacts.	<p>Sub-Objective WILD-1.1.1: Identify habitat for species of mitigation need in the GAI and acquire, protect, restore, and/or enhance this habitat such that the greatest functional lift to the species of mitigation need is provided, including consolidating compensatory mitigation.</p> <p>Sub-Objective WILD-1.1.2: Prioritize key areas, such as designated critical habitat, movement corridors, and buffer zones.</p> <p>Sub-Objective WILD-1.1.3: Prioritize acquisition and/or protection of large blocks of suitable, occupied habitat for the species of mitigation need; lands adjacent to occupied habitat; and/or land that expands or buffers existing occupied protected habitats.</p> <p>Sub-Objective WILD-1.1.4: Prioritize land acquisition and/or protection that supports key populations.</p> <p>Sub-Objective WILD-1.1.5: Prioritize acquisition, protection, and/or enhancement of SWAP (CDFW 2015) conservation targets: American southwest riparian forest and woodland; California grassland and flowerfields, and freshwater marsh, as shown in Figure 7-3, as well as California Coastal HUC 1807 South Coast native aquatic herp assemblage, that coincide with the species of mitigation need range, as well as other locally or regionally important habitat types.</p> <p>Sub-Objective WILD-1.1.6: Create, enhance, or restore breeding habitat in protected areas where it is limited.</p> <p>Sub-Objective WILD-1.1.7: Align with LCP ESHA requirements to prioritize restoration and/or enhancement in ESHAs containing species of mitigation need such that a functional lift to the ESHA is provided, when feasible.</p>	<ul style="list-style-type: none">coastal California gnatcatcherleast Bell's vireoCalifornia red-legged frogmountain lion (Southern California/Central Coast ESU)southwestern willow flycatcher	<ul style="list-style-type: none">SWAP (CDFW 2015) and companion plansCEHC (Spencer et al. 2010) <i>Coastal California Gnatcatcher</i> (<i>Poliophtila californica californica</i>) 5-year review (FWS 2010b)Revised Designation of Critical Habitat for Coastal California Gnatcatcher (FWS 2007)Designation of Critical Habitat for the Least Bell's Vireo (FWS 1994)Draft Recovery Plan for the Least Bell's Vireo (<i>Vireo bellii pusillus</i>) (FWS 1998b)Final Recovery Plan for the Southwestern Willow Flycatcher (<i>Empidonax traillii extimus</i>) (FWS 2002b)Designation of Critical Habitat for Southwestern Willow Flycatcher (FWS 2013a)Recovery Plan for the California Red-legged Frog (<i>Rana aurora draytonii</i>) (FWS 2002a)Revised Designation of Critical Habitat for the California Red-legged Frog (FWS 2010a)Angeles National Forest Management Plan (USFS 2005a)Antelope Valley Draft RCIS (ICF 2019)Chino Hills State Park General Plan (California State Parks 1999)Cleveland National Forest Land Management Plan (USFS 2005b)Crystal Cove State Park General Plan (California State Parks 2003)Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California (U.S. Navy 2018)Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook (U.S. Navy 2016)Habitat Restoration and Enhancement Plan Nature Reserve of Orange County Central Coastal Subregion (LSA Associates 2003)Los Angeles County Significant Ecological Area Program (Los Angeles County 2020)Los Padres National Forest Management Plan (USFS 2005c)Malibu Creek State Park General Plan and Final Impact Report (California State Parks 2005a)Orange County Central and Coastal Subregions NCCP/HCP (R.J. Meade Consulting 1996)Orange County Transportation Authority NCCP/HCP (ICF 2016)San Bernardino County Draft RCIS (Dudek 2018)San Bernardino National Forest Management Plan (USFS 2005d)Santa Clara River Enhancement and Management Plan (AMEC 2005)Santa Monica Mountains National Recreation Area General Management Plan Environmental Impact Statement (National Park Service 2002)Santa Susana Pass State Historic Park General Plan/Environmental Impact Report (California State Parks 2008)South Coast Resource Management Plan Draft Resource Management Plan and Environmental Impact Statement (BLM 2011)Upper Santa Clara River Integrated Regional Water Management Plan (Kennedy/Jenks Consultants 2014)Western Riverside County MSHCP (Dudek 2003)Multiple LCPs

Objective	Sub-Objective	Affected Species ^a	Alignment with Conservation and Management Plans ^b
Goal WILD-2: Preserve, enhance, and increase connectivity between blocks of habitat supporting species of mitigation need to allow for dispersal that will maintain resilience and variability of populations	See below	See below	See below
Objective WILD- 2.1: Acquire, protect, restore, and/or enhance movement corridors within the GAI in advance of transportation project impacts.	<p>Sub-Objective WILD-2.1.1: Identify movement corridors for the species of mitigation need in the GAI and acquire, protect, restore, and/or enhance corridors such that the greatest functional lift for the species of mitigation need is provided.</p> <p>Sub-Objective WILD-2.1.2: Prioritize habitat in key linkage areas, between habitat areas, and/or areas that provide a buffer to key or existing corridors.</p>	<ul style="list-style-type: none">▪ coastal California gnatcatcher▪ least Bell's vireo▪ southwestern willow flycatcher▪ California red-legged frog▪ mountain lion (Southern California/Central Coast ESU)	<ul style="list-style-type: none">▪ SWAP (CDFW 2015) and companion plans▪ CEHC (Spencer et al. 2010)▪ <i>Coastal California Gnatcatcher</i> (Polioptila californica californica) 5-year review (FWS 2010b)▪ <i>Revised Designation of Critical Habitat for Coastal California Gnatcatcher</i> (FWS 2007)▪ <i>Designation of Critical Habitat for the Least Bell's Vireo</i> (FWS 1994)▪ <i>Draft Recovery Plan for the Least Bell's Vireo</i> (Vireo bellii pusillus) (FWS 1998b)▪ <i>Final Recovery Plan for the Southwestern Willow Flycatcher</i> (Empidonax traillii extimus) (FWS 2002b)▪ <i>Designation of Critical Habitat for Southwestern Willow Flycatcher</i> (FWS 2013a)▪ <i>Recovery Plan for the California Red-legged Frog</i> (Rana aurora draytonii) (FWS 2002a)▪ <i>Revised Designation of Critical Habitat for the California Red-legged Frog</i> (FWS 2010a)▪ <i>Angeles National Forest Management Plan</i> (USFS 2005a)▪ <i>Antelope Valley Draft RCIS</i> (ICF 2019)▪ <i>Chino Hills State Park General Plan</i> (California State Parks 1999)▪ <i>Cleveland National Forest Land Management Plan</i> (USFS 2005b)▪ <i>Conserving California's Coastal Habitats: A Legacy and a Future with Sea Level Rise</i> (Heady et al. 2018)▪ <i>Crystal Cove State Park General Plan</i> (California State Parks 2003)▪ <i>Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California</i> (U.S. Navy 2018)▪ <i>Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook</i> (U.S. Navy 2016)▪ <i>Habitat Restoration and Enhancement Plan Nature Reserve of Orange County Central Coastal Subregion</i> (LSA Associates 2003)▪ <i>Los Angeles County Significant Ecological Area Program</i> (Los Angeles County 2020)▪ <i>Los Padres National Forest Management Plan</i> (USFS 2005c)▪ <i>Malibu Creek State Park General Plan and Final Impact Report</i> (California State Parks 2005a)▪ <i>Orange County Central and Coastal Subregions NCCP/HCP</i> (R.J. Meade Consulting 1996)▪ <i>Orange County Transportation Authority NCCP/HCP</i> (ICF 2016)▪ <i>San Bernardino County Draft RCIS</i> (Dudek 2018)▪ <i>San Bernardino National Forest Management Plan</i> (USFS 2005d)▪ <i>Santa Clara River Enhancement and Management Plan</i> (AMEC 2005)▪ <i>Santa Monica Mountains National Recreation Area General Management Plan Environmental Impact Statement</i> (National Park Service 2002)▪ <i>Santa Susana Pass State Historic Park General Plan/Environmental Impact Report</i> (California State Parks 2008)▪ <i>South Coast Resource Management Plan Draft Resource Management Plan and Environmental Impact Statement</i> (BLM 2011)▪ <i>Upper Santa Clara River Integrated Regional Water Management Plan</i> (Kennedy/Jenks Consultants 2014)▪ <i>Western Riverside County MSHCP</i> (Dudek 2003)▪ Multiple LCPs

Objective	Sub-Objective	Affected Species ^a	Alignment with Conservation and Management Plans ^b
Goal WILD-3: Support resiliency of the landscape to climate change and sea level rise	See below	See below	See below
Objective WILD-3.1: Acquire, protect, restore, and/or enhance habitat that supports resilience to climate change and sea-level rise within the GAI in advance of transportation project impacts.	<p>Sub-Objective WILD-3.1.1: Identify, acquire, protect, restore, and/or enhance habitat critical to climate resilience for the species of mitigation need in the GAI (Figure 2-6).</p> <p>Sub-Objective WILD-3.1.2: Prioritize management of invasive species in key areas, such as movement corridors and ESHAs, that may be exacerbated by climate change and sea-level rise and that would provide functional lift for the species of mitigation need and ESHAs.</p>	<ul style="list-style-type: none">coastal California gnatcatcherleast Bell’s vireosouthwestern willow flycatcherCalifornia red-legged frogmountain lion (Southern California/Central Coast ESU)	<ul style="list-style-type: none">SWAP (CDFW 2015) and companion plansCEHC (Spencer et al. 2010)Coastal California Gnatcatcher (Polioptila californica californica) 5-year review (FWS 2010b)Designation of Critical Habitat for the Least Bell’s Vireo (FWS 1994)Draft Recovery Plan for the Least Bell’s Vireo (Vireo bellii pusillus) (FWS 1998b)Designation of Critical Habitat for Southwestern Willow Flycatcher (FWS 2013a)Antelope Valley Draft RCIS (ICF 2019)Conserving California’s Coastal Habitats: A Legacy and a Future with Sea Level Rise (Heady et al. 2018)Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California (U.S. Navy 2018)Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook (U.S. Navy 2016)Los Angeles County Significant Ecological Area Program (Los Angeles County 2020)Orange County Transportation Authority NCCP/HCP (ICF 2016)San Bernardino County Draft RCIS (Dudek 2018)South Coast Resource Management Plan Draft Resource Management Plan and Environmental Impact Statement (BLM 2011)Upper Santa Clara River Integrated Regional Water Management Plan (Kennedy/Jenks Consultants 2014)Multiple LCPs

Objective	Sub-Objective	Affected Species ^a	Alignment with Conservation and Management Plans ^b
Goal WILD-4: Decrease mortality and competition, and protect population health for species of mitigation need	See below	See below	See below
Objective WILD-4.1: Reduce impacts of invasive species on populations of species of mitigation need within the GAI in advance of transportation project impacts.	<p>Sub-Objective WILD-4.1.1: Reduce invasive species in key habitat locations and/or in areas that provide a buffer to high-value habitat for the species of mitigation need. Prioritize areas where invasive species reduction would provide the greatest functional lift to species of mitigation need and their habitat.</p> <p>Sub-Objective WILD-4.1.2: Prioritize restoration of native plant species in key areas, such as critical habitat, movement corridors, and buffer zones.</p>	<ul style="list-style-type: none">coastal California gnatcatcherleast Bell’s vireosouthwestern willow flycatcherCalifornia red-legged frogmountain lion (Southern California/Central Coast ESU)	<ul style="list-style-type: none">SWAP (CDFW 2015) and companion plansCEHC (Spencer et al. 2010)Coastal California Gnatcatcher (Polioptila californica californica) 5-year review (FWS 2010b)Revised Designation of Critical Habitat for Coastal California Gnatcatcher (FWS 2007)Designation of Critical Habitat for the Least Bell’s Vireo (FWS 1994)Draft Recovery Plan for the Least Bell’s Vireo (Vireo bellii pusillus) (FWS 1998b)Final Recovery Plan for the Southwestern Willow Flycatcher (Empidonax traillii extimus) (FWS 2002b)Designation of Critical Habitat for Southwestern Willow Flycatcher (FWS 2013a)Recovery Plan for the California Red-legged Frog (Rana aurora draytonii) (FWS 2002a)Revised Designation of Critical Habitat for the California Red-legged Frog (FWS 2010a)Angeles National Forest Management Plan (USFS 2005a)Antelope Valley Draft RCIS (ICF 2019)Chino Hills State Park General Plan (California State Parks 1999)Cleveland National Forest Land Management Plan (USFS 2005b)Conserving California’s Coastal Habitats: A Legacy and a Future with Sea Level Rise (Heady et al. 2018)Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California (U.S. Navy 2018)Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook (U.S. Navy 2016)Habitat Restoration and Enhancement Plan Nature Reserve of Orange County Central Coastal Subregion (LSA Associates 2003)Los Angeles County Significant Ecological Area Program (Los Angeles County 2020)Los Padres National Forest Management Plan (USFS 2005c)Malibu Creek State Park General Plan and Final Impact Report (California State Parks 2005a)Orange County Central and Coastal Subregions NCCP/HCP (R.J. Meade Consulting 1996)Orange County Transportation Authority NCCP/HCP (ICF 2016)San Bernardino County Draft RCIS (Dudek 2018)San Bernardino National Forest Management Plan (USFS 2005d)Santa Clara River Enhancement and Management Plan (AMEC 2005)Santa Monica Mountains National Recreation Area General Management Plan Environmental Impact Statement (National Park Service 2002)Santa Susana Pass State Historic Park General Plan/Environmental Impact Report (California State Parks 2008)South Coast Resource Management Plan Draft Resource Management Plan and Environmental Impact Statement (BLM 2011)Upper Santa Clara River Integrated Regional Water Management Plan (Kennedy/Jenks Consultants 2014)Western Riverside County MSHCP (Dudek 2003)Multiple LCPs

Objective	Sub-Objective	Affected Species ^a	Alignment with Conservation and Management Plans ^b
Objective WILD-4.2: Reduce impacts from nonnative predators within the GAI in advance of transportation project impacts.	Sub-Objective WILD-4.2.1: Identify and implement measures to reduce predation, such as ponds that dry up on an annual basis, to discourage bullfrogs from establishing.	<ul style="list-style-type: none"> coastal California gnatcatcher least Bell's vireo southwestern willow flycatcher California red-legged frog 	<ul style="list-style-type: none"> SWAP (CDFW 2015) and companion plans CEHC (Spencer et al. 2010) Coastal California Gnatcatcher (<i>Poliophtila californica californica</i>) 5-year review (FWS 2010b) Revised Designation of Critical Habitat for Coastal California Gnatcatcher (FWS 2007) Designation of Critical Habitat for the Least Bell's Vireo (FWS 1994) Draft Recovery Plan for the Least Bell's Vireo (<i>Vireo bellii pusillus</i>) (FWS 1998b) Final Recovery Plan for the Southwestern Willow Flycatcher (<i>Empidonax traillii extimus</i>) (FWS 2002b) Designation of Critical Habitat for Southwestern Willow Flycatcher (FWS 2013a) Recovery Plan for the California Red-legged Frog (<i>Rana aurora draytonii</i>) (FWS 2002a) Revised Designation of Critical Habitat for the California Red-legged Frog (FWS 2010a) Antelope Valley Draft RCIS (ICF 2019) Chino Hills State Park General Plan (California State Parks 1999) Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California (U.S. Navy 2018) Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook (U.S. Navy 2016) Los Angeles County Significant Ecological Area Program (Los Angeles County 2020) Malibu Creek State Park General Plan and Final Impact Report (California State Parks 2005a) Orange County Central and Coastal Subregions NCCP/HCP (R.J. Meade Consulting 1996) Orange County Transportation Authority NCCP/HCP (ICF 2016) San Bernardino County Draft RCIS (Dudek 2018) Santa Clara River Enhancement and Management Plan (AMEC 2005) Santa Susana Pass State Historic Park General Plan/Environmental Impact Report (California State Parks 2008) Western Riverside County MSHCP (Dudek 2003) Multiple LCPs
Objective WILD-4.3: Reduce road-associated mortality within the GAI in advance of transportation project impacts.	Sub-Objective WILD-4.3.1: Identify locations to develop safe SHS wildlife crossing areas in the GAI and direct the species of mitigation need to them.	<ul style="list-style-type: none"> California red-legged frog mountain lion (Southern California/Central Coast ESU) 	<ul style="list-style-type: none"> SWAP (CDFW 2015) and companion plans CEHC (Spencer et al. 2010) Recovery Plan for the California Red-legged Frog (<i>Rana aurora draytonii</i>) (FWS 2002a) Revised Designation of Critical Habitat for the California Red-legged Frog (FWS 2010a) Antelope Valley Draft RCIS (ICF 2019) Chino Hills State Park General Plan (California State Parks 1999) Cleveland National Forest Land Management Plan (USFS 2005b) Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California (U.S. Navy 2018) Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook (U.S. Navy 2016) Los Angeles County Significant Ecological Area Program (Los Angeles County 2020) Los Padres National Forest Management Plan (USFS 2005c) Orange County Central and Coastal Subregions NCCP/HCP (R.J. Meade Consulting 1996) Orange County Transportation Authority NCCP/HCP (ICF 2016) San Bernardino County Draft RCIS (Dudek 2018) San Bernardino National Forest Management Plan (USFS 2005d) Western Riverside County MSHCP (Dudek 2003) Multiple LCPs

Objective	Sub-Objective	Affected Species ^a	Alignment with Conservation and Management Plans ^b
Goal WILD-5: Prioritize multi-species and multi-resource benefits	See below	See below	See below
Objective WILD-5.1: Acquire, protect, restore, and/or enhance habitat that provides multi-species benefits within the GAI in advance of transportation project impacts.	<p>Sub-Objective WILD-5.1.1: Prioritize mitigation to provide benefits to special-status species that may co-occur with the species of mitigation need in key areas and that will provide functional lift to other special-status species within the GAI.</p> <p>Sub-Objective WILD-5.1.2: Identify SHS right-of-way areas where enhancement efforts may benefit pollinators, as well as species of mitigation need.</p> <p>Sub-Objective WILD-5.1.3: Consider the needs of other co-occurring species when planning site-specific actions to restore or create aquatic breeding habitat for California red-legged frog.</p> <p>Sub-Objective WILD-5.1.4: Align with LCP ESHA requirements to prioritize restoration and/or enhancement actions that provide a functional lift to the ESHA and their resource values, when feasible.</p>	<ul style="list-style-type: none">coastal California gnatcatcherleast Bell's vireosouthwestern willow flycatcherCalifornia red-legged frogmountain lion (Southern California/Central Coast ESU)	<ul style="list-style-type: none">SWAP (CDFW 2015) and companion plansCEHC (Spencer et al. 2010)Coastal California Gnatcatcher (Polioptila californica californica) 5-year review (FWS 2010b)Revised Designation of Critical Habitat for Coastal California Gnatcatcher (FWS 2007)Designation of Critical Habitat for the Least Bell's Vireo (FWS 1994)Draft Recovery Plan for the Least Bell's Vireo (Vireo bellii pusillus) (FWS 1998b)Final Recovery Plan for the Southwestern Willow Flycatcher (Empidonax traillii extimus) (FWS 2002b)Designation of Critical Habitat for Southwestern Willow Flycatcher (FWS 2013a)Revised Designation of Critical Habitat for the California Red-legged Frog (FWS 2010a)Angeles National Forest Management Plan (USFS 2005a)Antelope Valley Draft RCIS (ICF 2019)Chino Hills State Park General Plan (California State Parks 1999)Cleveland National Forest Land Management Plan (USFS 2005b)Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California (U.S. Navy 2018)Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook (U.S. Navy 2016)Habitat Restoration and Enhancement Plan Nature Reserve of Orange County Central Coastal Subregion (LSA 2003)Los Angeles County Significant Ecological Area Program (Los Angeles County 2020)Los Padres National Forest Management Plan (USFS 2005c)Malibu Creek State Park General Plan and Final Impact Report (California State Parks 2005a)Orange County Central and Coastal Subregions NCCP/HCP (R.J. Meade Consulting 1996)Orange County Transportation Authority NCCP/HCP (ICF 2016)San Bernardino County Draft RCIS (Dudek 2018)San Bernardino National Forest Management Plan (USFS 2005d)Santa Clara River Enhancement and Management Plan (AMEC 2005)Santa Monica Mountains National Recreation Area General Management Plan Environmental Impact Statement (National Park Service 2002)Santa Susana Pass State Historic Park General Plan/Environmental Impact Report (California State Parks 2008)South Coast Resource Management Plan Draft Resource Management Plan and Environmental Impact Statement (BLM 2011)Upper Santa Clara River Integrated Regional Water Management Plan (Kennedy/Jenks Consultants 2014)Western Riverside County MSHCP (Dudek 2003)Multiple LCPs

^a This column includes species of mitigation need that could benefit from these objectives.
^b More information on these plans is provided in Chapters 3 and 4.

Figure 7-3. SWAP Terrestrial Conservation Target Habitats



7.8 Summary

Caltrans anticipates that future SHOPP transportation projects may be conditioned by CDFW and FWS to address the pressures and stressors that threaten species of mitigation need in the GAI. The pressures and stressors include:

- Habitat loss, fragmentation, and degradation;
- Invasive species;
- Disease and predation;
- Climate change, drought, sea-level rise, and wildfire
- Contaminants.

Hence, Caltrans will seek to align advance mitigation project scopes with conservation goals and objectives that address the identified pressures and stressors, thereby aligning advance mitigation efforts with regional conservation efforts.

Regional conservation goals and objectives provide a framework for scoping compensatory mitigation credit establishment that would successfully offset future transportation project impacts on wildlife resources by creating functional lift or conservation benefit and by mitigating the pressures and stressors on wildlife resources in the GAI. To summarize Table 7-3:

Goals WILD-1 and WILD-2 seek to conserve and expand habitat for species of mitigation need within the GAI and increase connectivity between blocks of habitat. The objectives to fulfill these goals are acquisition, protection, restoration, and/or enhancement of land. Caltrans intends to prioritize efforts that provide the greatest functional lift for the species of mitigation need, and that provide a conservation benefit in terms of size, connectivity, quality, and contribution to the climate resilience of habitat within the GAI. By increasing connectivity for species of mitigation need, Caltrans anticipates that co-occurring species will realize these same benefits. These goals and objectives were selected to address habitat loss, fragmentation, and degradation and to address impacts from climate change and drought. Further, Caltrans anticipates that actions completed through restoration, enhancement, and/or preservation may also provide opportunities to address invasive species, predation, and road-associated mortality.

Goal WILD-3 seeks to support landscape resiliency for species of mitigation need habitat in the GAI. The primary objectives are to reduce the effects of climate change and sea-level rise on these species by increasing the protection and functionality of land that is identified as crucial for climate resiliency, including corridors that provide the ability for these species to migrate from areas of low climate resilience into areas with higher resilience and addressing the climate change-related threat from invasive species. In addition to addressing climate change in general, these goals and objectives address habitat loss, fragmentation, and degradation, and invasive species.

Goal WILD-4 seeks to decrease mortality of species of mitigation need from known immediate and ongoing threats to individuals or populations by protecting native vegetation, reducing conditions that favor predators and competitors, and protecting

species of mitigation need from road-associated mortality. These objectives address issues related to habitat loss, fragmentation, and degradation, and threats from invasive species and predation.

Goal WILD-5 seeks to guide advance mitigation scoping to prioritize multi-species and multi-resource benefits to maximize ecological benefits to the GAI. Advance mitigation provides the opportunity to maximize Caltrans' benefit to conservation in the GAI, including to species other than the species of mitigation need and other land management objectives. Goal WILD-5 was developed to include conservation for multiple species and to provide compensatory mitigation for impacts on species of mitigation need.

Each of the goals and objectives have sub-objectives intended to guide advance mitigation scoping toward natural resource regulatory agencies' regional conservation goals. These sub-objectives will prompt Caltrans to incorporate priority habitat or corridors into advance mitigation scopes and address important threats in the area through an advance mitigation project. This concept is an important way Caltrans seeks to use advance mitigation scoping to set the stage, once funding approval is received, for specific advance mitigation projects that will provide a functional lift for the species of mitigation need and maximize conservation benefits from mitigation within the GAI.

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8. AQUATIC RESOURCES CONSERVATION GOALS AND OBJECTIVES

Caltrans' primary objective for aquatic resources is to avoid and minimize all impacts on fish, wetlands, non-wetland waters, and riparian habitat from Caltrans transportation projects in the GAI. However, when avoidance and minimization are insufficient or infeasible, compensatory mitigation may be used to offset impacts. Credits or values established through SHC § 800.6(a)-authorized advance mitigation projects offer the unique opportunity to consolidate needed compensatory mitigation. This consolidation helps to provide strategically placed and environmentally sound restoration and enhancement and to provide an improved environmental outcome that may not be available through the usual transportation project-by-project approach to compensatory mitigation.

Caltrans seeks to align its advance mitigation projects with natural resource regulatory agencies' conservation goals and objectives, and to contribute to an improved environmental outcome in the GAI. With this in mind, this chapter presents Caltrans' understanding of natural resource regulatory agencies' regional conservation goals and objectives that could be applied to advance mitigation projects undertaken in the GAI to offset forecast impacts from SHOPP transportation projects.

The goals and objectives developed in this chapter are intended to guide advance mitigation scoping decisions toward those choices that will provide for the greatest environmental benefit available through the advance mitigation planning and delivery processes. Such advance mitigation projects undertaken by Caltrans should contribute to aquatic resource and riparian habitat restoration and enhancement and should yield compensatory mitigation usable by future transportation projects, as specified in SHC § 800.¹ Compensatory mitigation usable by future transportation projects should be expressed in standard units or terms recognized by the natural resource regulatory agencies.

Information presented in this chapter is for advance mitigation project scoping purposes only. Transportation projects must still go through environmental and permitting processes and must demonstrate avoidance and minimization efforts prior to compensation.

8.1 Approach

For the purposes of this RAMNA, conservation goals and objectives are a broad set of regional natural resource sustainability goals and objectives that are consistent with both

¹ Pursuant to SHC § 800.9, to the maximum extent practicable, the information required for an RCIS is presented in this RAMNA. During CDFW's review of an RCIS, CDFW determines whether the goals and objectives presented in the RCIS are consistent with FGC § 1852, subdivision (c)(8).

regulatory requirements and conservation science. To determine the aquatic resource conservation goals and objectives applicable to the GAI, Caltrans:

- First, in Section 8.2, identified natural resource regulatory agencies with the authority to condition transportation projects with aquatic resource-related and riparian habitat compensatory mitigation in the GAI.
- Then, in Section 8.3, summarized information for the fish, wetland, and non-wetland waters addressed by the assessment.
- Next, in Sections 8.4, 8.5, and 8.6, for aquatic resources identified:
 - Federal and state policies, and binding and non-binding regional conservation and land management plans.
 - Current and projected pressures and stressors, including climate change and sea-level rise, for which there is a transportation nexus.
 - Opportunities to enhance the conservation benefits through advance mitigation projects.
 - Opportunities to provide co-benefits, where possible, to water quality, groundwater recharge, and species that require aquatic habitats.
- Last, Caltrans analyzed the aforementioned data in relation to the transportation-related activities that could potentially affect aquatic resources and riparian habitats, and the potential range of compensatory mitigation that could satisfy a transportation project condition associated with the activities.

The results of this analysis is a framework of conservation goals and objectives for use in advance mitigation project scoping (Section 8.7).

8.2 Natural Resource Regulatory Agencies with Aquatic Resources Oversight

Table 8-1 lists the natural resource regulatory agencies with the authority to condition transportation projects delivered in the GAI with aquatic resource-related compensatory mitigation. Terrestrial special-status wildlife species are known to use streams, wetlands, and other aquatic resources that are regulated by federal and state agencies specific to those habitat types. This RAMNA identifies goals and objectives for terrestrial species separately in Chapter 7.

Table 8-1. Natural Resource Regulatory Agencies that Regulate Aquatic Resources

Agency	Summary
CCC	CCC protects the coast by planning for and regulating new development in the Coastal Zone pursuant to the policies of the Coastal Act. Through the issuance of coastal development permits, CCC implements the policies of the Coastal Act, including protecting sensitive resources, water quality, and public access to the coast, and protecting and requiring mitigation for impacts on wetlands, WOTUS, ESHAs, etc. CCC also coordinates with local governments in developing and certifying LCPs, which allow local governments to assume the authority to issue coastal development permits in their jurisdiction. The agency also provides comprehensive guidance to local governments and project applicants regarding planning for and adapting to climate change and sea-level rise. The CCC, agency, or authorized local government with a certified LCP also determines how ESHAs are defined, such as a specific species habitat or as a specific geographic area.
CDFW – Region 4, Central Coast, Region 5, South Coast, and Region 6, Inland Deserts	CDFW oversees the conservation, protection, and management of fish, wildlife, native plants, and the habitats necessary for biologically sustainable populations of those species in California. California law (FGC § 1602) also requires an entity to notify CDFW prior to commencing any activity that may substantially divert or obstruct the natural flow of any river, stream, or lake; 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 materials containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. CDFW issues agreements to project proponents under its authorities, including Lake and Streambed Alteration Agreements, approvals of conservation and mitigation banks, approvals of MCAs and RCISs, and NCCP permits. Additionally, CDFW's Environmental Review and Permitting, Conservation and Mitigation Banking, NCCP, and RCIS programs implement sections of the FGC, Division 1 of Title 14 of the California Code of Regulations, et seq. These programs help fulfill CDFW's mission to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values.
Corps – South Pacific Division – Sacramento District and Los Angeles District	It is the mission of the Corps' Regulatory Program (33 CFR Part 230 and Parts 320–332) to protect the nation's aquatic resources and navigation capacity while allowing reasonable development through fair, flexible, and balanced permit decisions. The Corps is responsible for administering laws for the protection and preservation of aquatic resources pursuant to Section 10 of the Rivers and Harbors Act of 1899 and CWA Section 404. Pursuant to the Rivers and Harbors Act, all work or structures in, over, or under navigable WOTUS require Corps authorization. The Corps authorizes, under CWA Section 404, the discharge of dredged or fill material into WOTUS, including wetlands. When the Corps' civil works projects are proposed to be used or altered by another entity, CWA Section 408 permission (33 USC 408 or Section 14 of the Rivers and Harbors Act of 1899, as amended) must be obtained in addition to the CWA Section 404 authorization. In accordance with the 2008 mitigation rule, in general it is the preference of the Corps to use the following order of priority for mitigation: mitigation bank, in-lieu fee program, on-site permittee responsible mitigation, and off-site permittee responsible mitigation; but the preference may change based on what is environmentally preferable.
EPA, Region 9	EPA has authority under the CWA (33 USC § 11251–1357) to restore and maintain the chemical, physical, and biological integrity of the nation's waters. EPA and the Corps jointly implement the CWA Section 404 program, which regulates discharge of dredge or fill material into WOTUS. Federal authorizations also need to be reviewed for compliance with CWA Section 401.

Agency	Summary
FWS	FWS has jurisdiction over all federally protected wildlife, federally protected inland/non-anadromous fish species, and critical habitats, and requires consultation and coordination to comply with the ESA. FWS authorities, including its role in mitigation, are codified under multiple statutes that address management and conservation of natural resources from many perspectives, including, but not limited to, the effects of land, water, and energy development on fish, wildlife, plants, and their habitats. FWS approves HCPs to address impacts on federally protected species, for projects lacking a federal nexus, under ESA Section 10(a)(1)(B). For projects with a federal nexus and potential impacts on federally protected species, FWS issues biological opinions under ESA Section 7. FWS does not, however, have jurisdiction over anadromous fish.
State Water Board and several RWQCBs ^a	The Porter-Cologne Act governs water quality regulation in California and gives the Water Boards the authority to condition projects, through waste discharge requirements, to protect water quality and the beneficial uses of waters of the state, as identified in basin plans. Basin plans, adopted by the Water Boards, incorporate the beneficial use designation of surface waters of the state and must take into consideration the use and value of water for protection and propagation of fish, shellfish, and wildlife. The Water Boards have been delegated the responsibility of implementing CWA Section 401, which regulates the discharge of pollutants into WOTUS. Projects that occur in one region are regulated by that regional board, whereas projects that cross regions are regulated by the State Water Board.

^a The majority of the GAI is under the jurisdiction of the RWQCB, Region 4, Los Angeles. However, small portions of the GAI overlap the following RWQCBs: Region 3, Central Coast; Region 5, Central Valley; Region 6, Lahontan; Region 7, Colorado River; and Region 9, San Diego.

8.3 Aquatic Resources

An overview of aquatic resources was provided in Chapter 2 and is summarized below. The GAI overlaps, in part or in whole, with the HUC-8 boundaries listed in Tables 8-2 and 8-3. Additionally, the Antelope-Fremont Valleys, Mojave, San Antonio, San Jacinto, San Luis Rey-Escondido, Santa Maria, and Whitewater River HUC-8s also partially occur in the GAI.

The major stream systems in the Southern California Coast ecoregion section of the GAI include Calleguas Creek, Los Angeles River, San Gabriel River, Santa Ana River, Santa Clara River, Santa Ynez River, and the Ventura River (Central Coast RWQCB 2019; Los Angeles RWQCB 2020; San Diego RWQCB 2016; Santa Ana RWQCB 2019; Central Valley RWQCB 2018). The major stream systems in the Southern California Mountains and Valleys ecoregion section of the GAI include the Cuyama River, San Gabriel River, San Juan Creek, Santa Ana River, Santa Clara River, Santa Margarita River, Santa Ynez River, Sisquoc River, and Ventura River (Central Coast RWQCB 2019; Los Angeles RWQCB 2020; San Diego RWQCB 2016; Santa Ana RWQCB 2019; Central Valley RWQCB 2018). Of these stream systems, Calleguas Creek, Cuyama River, Los Angeles River, San Gabriel River, Santa Clara River, Santa Ynez River, and the Ventura River occur in Caltrans District 7.

Additionally, there are hundreds of named and unnamed tributaries, the majority of which flow into these rivers and/or the ocean. Flow into these systems originates primarily from rainfall, but occasionally flow originates from melting snowfall in the Southern Coast Ranges and Transverse Ranges (Figure 2-4) also occurs.

Aquatic habitat types with the potential to occur in the GAI are mapped in Appendix H. Based on the SAMNA's wetlands and waters layer, the GAI has a total of 228,188 acres of aquatic habitat, consisting of 32 wetland habitats that are listed in Table 2-8 and 8 non-wetland waters habitats that are listed in Table 2-9 (Caltrans 2021e, 2021f). A total of 16 beneficial uses that support the preservation and enhancement of wildlife habitat and aquatic resources in the GAI also align with the AMP's objective to protect natural resources through transportation project mitigation and are relevant to this RAMNA. They are detailed in Table 2-7.

Based on the SAMNA's fish habitat layer, threatened and endangered fish species known to occur or with the potential to occur in the GAIs include Southern California Coast DPS steelhead, Mohave tui chub, Santa Ana sucker, tidewater goby, and unarmored threespine stickleback (Section 2.17.4). The GAI includes FWS- and NMFS-designated final critical habitat for Santa Ana sucker, Southern California Coast DPS steelhead, and tidewater goby, and NMFS-designated EFH for Pacific groundfish (Sections 2.9 and 2.10).

Because no detailed riparian GIS layer is currently available, riparian habitat information was excerpted from the SAMNA's vegetation layer. The prominent riparian habitats identified in the GAI are montane riparian and valley foothill riparian (Table 2-3). A very small amount of desert riparian habitat is also identified.

8.4 Regional Conservation Efforts

Caltrans' understanding of natural resource regulatory agency conservation goals and objectives is that they are generally designed to protect aquatic resources. Several conservation and land management plans listed in Table 3-1, relevant to aquatic resources, identify key habitats, specific designated waters, or areas for aquatic resource enhancement and restoration. For example, some LCPs include ESHAs with aquatic resource attributes. Others identify key qualities, such as water quality, that are essential for aquatic resource enhancement and restoration. Still others name specific National Hydrologic Dataset features, presented in Tables 8-2 and 8-3, for aquatic resource enhancement and restoration. Additionally, the documents include strategies for aquatic resource protection and measures to address specific known, ongoing threats to aquatic resources. These conservation and land management plans are presented in Table 8-4.

8.5 Pressures and Stressors

Pressures and stressors refer to environmental trends or physical, chemical, or biological factors or conditions that affect aquatic resources. According to the SWAP (CDFW 2015), a pressure is defined as "an anthropogenic (human-induced) or natural driver that could result in changing the ecological conditions of the target. Pressures can be positive or

negative depending on intensity, timing, and duration. Negative or positive, the influence of a pressure to the target is likely to be significant.” Additionally, stress is defined in the SWAP as “[a] degraded ecological condition of a target that resulted directly² or indirectly from negative impacts of pressures (e.g., habitat fragmentation)” (CDFW 2015). The Corps defines human stressors as human-caused sources of disturbance in an ecosystem, such as roads, urban areas, and agricultural lands (Corps 2015).

The documents in Table 8-4 identify multiple pressures and stressors on aquatic resources in the GAI where hydrology, land use and management, and climate intersect. These pressures and stressors were evaluated in relation to the types of direct and indirect effects that could result from transportation projects funded through SHOPP and could benefit from in-kind mitigation purchased or established through an advance mitigation project. When designating an area as an ESHA, the CCC and LCPs also consider the pressures and stressors discussed below.

8.5.1. Habitat Loss, Fragmentation, and Degradation

Urbanization and other anthropogenic factors such as roads, poor grazing practices, and habitat invasion by nonnative species have led to the loss and degradation of aquatic resources. Additionally, the expansion of roads and urbanization have resulted in habitat fragmentation and a decrease in connectivity between habitats that support different life stages and have contributed to nonpoint source pollution from chemicals and toxins. Roads have also affected local hydrological conditions by changing sheet flow and altering water movement in drainages (CDFW 2015, 2016a).

Prior to Euro-American settlement in California, tidal marsh habitats gradually transitioned to low-lying moist grassland or willow thicket habitat, and then to upland areas. This buffer dissipated disturbances from upland areas such as predator intrusion, wildfire, and erosion and further provided additional habitat to aquatic species during high tides and flood events. Current human activities have reduced buffer zone widths by direct development and fragmentation. Reduced buffer zones increase edge effects on tidal marshes, which include increased risk of localized species extirpation, direct population reduction, breeding capacity reduction, and increased infiltration of predators and pollutants (FWS 2013b).

² Direct effects occur at the time of construction and indirect effects are reasonably certain to occur, but later in time.

Table 8-2. Named Aquatic Features in the Southern California Coast Ecoregion Section of the GAI with Documented Aquatic Resource Goals and Objectives, by HUC-8^a

Aliso-San Onofre HUC-8 18070301	Calleguas HUC-8 18070103	Los Angeles HUC-8 18070105	Newport Bay HUC-8 18070204	San Gabriel HUC-8 18070106	Santa Ana HUC-8 18070203	Santa Barbara Coastal HUC-8 18060013	Santa Clara HUC-8 18070102	Santa Monica Bay HUC-8 18070104	Santa Ynez HUC-8 18060010	Seal Beach HUC-8 18070201	Ventura HUC-8 18070101
<ul style="list-style-type: none"> Aliso Creek El Toro Drainage Laguna Channel^b 	<ul style="list-style-type: none"> Arroyo Conejo Arroyo Simi Bubbling Springs Creek^c Calleguas Creek Conejo Creek Edison Canal and Plant adjacent wetlands McGrath Lake Mugu Lagoon Ormond Beach wetland complex 	<ul style="list-style-type: none"> Los Angeles River Rio Hondo 	<ul style="list-style-type: none"> Agua Chinon Wash Veoh Reservoir 	<ul style="list-style-type: none"> Carbon Canyon Creek San Gabriel River San Jose Creek Diversion Channel 	<ul style="list-style-type: none"> Santa Ana River Talbert Flood Control Channel 	<ul style="list-style-type: none"> Carpinteria Marsh El Estero Drainage Goleta Slough Mission Creek Northern Drainage Channel Sycamore Creek Tecolotito Creek^d 	<ul style="list-style-type: none"> Piru Creek Santa Clara River Sespe Creek 	<ul style="list-style-type: none"> Arroyo Sequit Ballona, Oxford Detention Area, Wetland Parcel 9^e Big Sycamore Canyon Deer Creek Canyon La Jolla Canyon Las Virgenes Creek Little Sycamore Canyon Malibu Creek Serrano Canyon Topanga Creek^f 	<ul style="list-style-type: none"> Los Berros Creek^g Santa Ynez River 	<ul style="list-style-type: none"> 7th Street Pond Bolsa Chica wetland complex Case Road Pond Huntington Beach Wetland complex 	<ul style="list-style-type: none"> Allesandro Lagoon Rincon Creek Ventura River

^a Although the Antelope-Fremont Valleys, Mojave, San Antonio, San Jacinto, San Luis Rey-Escondido, Santa Maria, and Whitewater River HUC-8s also occur in the GAI, no specific goals relate to aquatic features occurring in those HUC-8s from the plans identified in Table 8-4.

^b Although there is no National Hydrology Dataset (“NHD”) feature called Laguna Channel, it can be inferred from the location of the city of Laguna Hills that this refers to a tributary that drains into Aliso Creek.

^c Although there is no NHD feature called Bubbling Springs Creek, it can be inferred from the location of the city of Port Hueneme that this refers to a tributary in the Calleguas HUC-8 that drains into the Pacific Ocean.

^d Although there is no NHD feature called Tecolotito Creek, according to the USGS Goleta Quadrangle Map, Tecolotito Creek drains into Goleta Slough.

^e These features all constitute parts of the Ballona Wetlands complex mentioned in the *Marina del Rey Land Use Plan* (Los Angeles County 2012).

^f Although there is no NHD named feature called Topanga Creek, it can be inferred from the location of Topanga State Park that this refers to the stream in Topanga Canyon that drains into the Pacific Ocean.

^g Although there is no NHD named feature called Los Berros Creek, it can be inferred from the location of La Purisima State Historic Park that this refers to the stream in Purisima Canyon that drains into the Santa Ynez River.

Table 8-3. Named Aquatic Features in the Southern California Mountains and Valleys Ecoregion Section of the GAI with Documented Aquatic Resource Goals and Objectives, by HUC-8

Aliso-San Onofre HUC-8 18070301	Cuyama HUC-8 18060007	Middle Kern-Upper Tehachapi-Grapevine HUC-8 18030003	San Gabriel HUC-8 18070106	Santa Ana HUC-8 18070203	Santa Clara HUC-8 18070102	Santa Margarita HUC-8 18070302	Santa Ynez HUC-8 18060010	Ventura HUC-8 18070101
<ul style="list-style-type: none"> San Mateo Creek 	<ul style="list-style-type: none"> Cuyama River 	<ul style="list-style-type: none"> Bitter Creek 	<ul style="list-style-type: none"> Carbon Canyon Creek San Gabriel River San José Creek Diversion Channel 	<ul style="list-style-type: none"> Cable Creek Cajon Creek/Wash Chino Creek City Creek Cucamonga Creek Mill Creek Morey Arroyo Oak Glen Creek Santa Ana River Santiago Creek Yucaipa Creek 	<ul style="list-style-type: none"> Piru Creek Salt Creek Santa Clara River Sespe Creek Sulphur Creek 	<ul style="list-style-type: none"> Murrieta Creek Santa Margarita River Temecula Creek 	<ul style="list-style-type: none"> Santa Ynez River 	<ul style="list-style-type: none"> Ventura River

Table 8-4. Documents Identifying Aquatic Resource Goals and Objectives in the GAI

Document	Reference	Information Identified
Policies, Procedures, Guidelines, and Water Quality Plans	See below	See below
<i>2008 Final Compensatory Mitigation Rule</i>	73 <i>Federal Register</i> 19593	Corps' ruling to establish standards and criteria for the use of all types of compensatory mitigation, including on- and off-site permittee-responsible mitigation, mitigation banks, and in-lieu fee mitigation to offset unavoidable impacts on WOTUS. Recognizes that consolidating mitigation may be environmentally preferable for linear projects (because advance or at least concurrent compensatory mitigation is environmentally preferable, but not always possible to achieve) (Preamble and 33 Section 332.3).
<i>303(d) List of Impaired Water Bodies</i>	State Water Board 2018	Section 303(d) of the CWA requires that every 2 years, each state submit to EPA a list of rivers, lakes, and reservoirs in the state for which pollution control or requirements have failed to provide for water quality. Based on a review of this list and its associated Total Maximum Daily Load Priority Schedule (Appendix G in this document), 244 waterbodies are listed as impaired in the GAI. Of the 244, 132 have an established total maximum daily load.
<i>California Wetlands Conservation Policy</i>	Executive Order W-59-93	The "No Net Loss Policy" for wetlands aims to "[e]nsure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship and respect for private property."
<i>Definition and Delineation of Wetlands in the Coastal Zone</i>	CCC 2011	Creates a CCC wetland definition and wetland delineation procedures; uses a one-parameter approach for identifying a wetland.
<i>National Wetlands Mitigation Action Plan</i>	EPA and Corps 2002	An EPA and Corps comprehensive, interagency document to further achievement of the goal of no net loss of wetlands. The goals and objectives of the <i>National Wetlands Mitigation Action Plan</i> were incorporated into the 2008 Final Compensatory Mitigation Rule, which was updated in 2015 and includes the no net loss policy.
<i>Regional Compensatory Mitigation and Monitoring Guidelines for South Pacific Division</i>	Corps 2015	Provides guidelines for compensatory mitigation site selection. A watershed approach should be used when selecting sites to establish compensatory mitigation.
<i>State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State</i>	State Water Board 2019b	Creates a State of California wetland definition, a framework for determining jurisdiction of state wetlands, wetland delineation procedures, and application procedures for discharges of dredge and fill material to waters of the state.
<i>Water Quality Control Plan for the Central Coast Basin</i>	Central Coast RWQCB 2019	Identifies water quality objectives and beneficial uses for the Central Coast Basin.
<i>Water Quality Control Plan for the Lahontan Region Basin</i>	Lahontan RWQCB 2020	Identifies water quality objectives and beneficial uses for the Lahontan Region Basin.
<i>Water Quality Control Plan for the Los Angeles Region Basin</i>	Los Angeles RWQCB 2020	Identifies water quality objectives and beneficial uses for the Los Angeles Region Basin.
<i>Water Quality Control Plan for the San Diego Basin Region</i>	San Diego RWQCB 2016	Identifies water quality objectives and beneficial uses for the San Diego Basin.
<i>Water Quality Control Plan for the Santa Ana River Basin</i>	Santa Ana RWQCB 2019	Identifies water quality objectives and beneficial uses for the Santa Ana River Basin.
<i>Water Quality Control Plan for the Tulare Lake Basin</i>	Central Valley RWQCB 2018	Identifies water quality objectives and beneficial uses for the Tulare Lake Basin.
Conservation and Land Management Documents	See below	See below
<i>Angeles National Forest Strategy</i>	USFS 2005a	Includes a goal to enhance stream systems in the forest by control of nonnative plants, in particular giant reed and tamarisk, along with nonnative bullfrogs and warm-water fish for the benefit of arroyo chub (<i>Gila orcuttii</i>), Santa Ana speckled dace (<i>Rhinichthys osculus</i> ssp. 3), Santa Ana sucker, partially armored threespine stickleback, and other native fish.

Document	Reference	Information Identified
<i>Chino Hills State Park General Plan</i>	California State Parks 1999	Goal to restore the riparian area along Carbon Canyon Creek in the Lemon Grove Area of the park.
<i>City of Huntington Beach General Plan Coastal Element</i>	City of Huntington Beach 2011	The LCP for Huntington Beach is included with the general plan. Includes a goal to conduct enhancement and/or restoration at the Bolsa Chica wetland complex and the Talbert Flood Control Channel as well as any other wetlands or riparian corridors in the LCP.
<i>City of Oxnard Coastal Land Use Plan</i>	City of Oxnard 2002	Includes a goal to restore the 131 acres of wetlands associated with Ormond Beach and to conduct wetland restoration in areas inhabited by Ventura Marsh milk-vetch.
<i>City of Santa Barbara Coastal Plan Airport and Goleta Slough</i>	City of Santa Barbara 2003	Includes goals to conduct enhancement and, where possible, restoration of Goleta Slough. This includes continuing to find ways to further reduce sedimentation into the slough. A target of 13.3 acres for restoration has been set, provided it can be determined that such restoration will not increase the potential for bird strikes at the nearby airport.
<i>City of Santa Barbara LCP Coastal Land Use Plan</i>	City of Santa Barbara 2019	Includes a general goal to enhance and/or restore all wetlands and streams in the city's coastal zone. Identifies the El Estero Drainage and Northern Drainage Channel as locations for designation of habitat restoration areas.
<i>Design Criteria for the Southern California National Forests</i>	USFS 2005e	<p>Includes the following goals for Angeles National Forest, all of which involve removal of invasive species that generally inhabit riparian systems:</p> <ul style="list-style-type: none"> Remove all occurrences of giant reed and tamarix. Remove occurrences of greater periwinkle, ivy, and Cape ivy (<i>Delairea odorata</i>) from Santa Anita, San Dimas, Bouquet, Arroyo Seco, and Millard Canyons. Remove occurrences of tree of heaven from San Francisquito, Bouquet, Soledad, Little Tujunga, Big Tujunga, San Gabriel, Big Dalton, and San Dimas Canyons. <p>Includes the following goals for Los Padres National Forest:</p> <ul style="list-style-type: none"> Remove occurrences of tamarix from Sespe Creek and Piru Creek. Remove 2 acres of Cape ivy from the Big Sur weed management area.
<i>Ecological Restoration Implementation Plan</i>	USFS 2013	<p>USFS restoration plan that includes general goals for all forests in California and Hawaii, as well as the following forest-specific goals pertinent to the GAI:</p> <ul style="list-style-type: none"> Angeles National Forest – Control the population of Quagga mussels and implement aquatic invasive species removal. San Bernardino National Forest – Identifies the Upper Santa Ana River HUC-10 (1807020305) as a priority for restoration.
<i>Final Integrated Natural Resources Management Plan Naval Weapons Station Seal Beach, California</i>	U.S. Navy 2014	Includes a general goal to restore the historic acreage and function of freshwater and saline wetland/riparian habitats along with upland transitional areas. This includes specific goals to eradicate hyssop loosestrife (<i>Lythrum hyssopifolium</i>), common brassbuttons (<i>Cotula coronopifolia</i>), curved sicklegrass (<i>Parapholis incurva</i>), and highway iceplant from the base. Another specific goal is included for coastal salt marsh restoration specifically for the benefit of salt marsh bird's beak (<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>), Belding's savannah sparrow (<i>Passerculus sandwichensis beldingi</i>), and light-footed clapper rail (<i>Rallus obsoletus levipes</i>).
<i>Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook</i>	U.S. Navy 2016	Includes a goal to control invasive aquatic animal species to benefit the Santa Margarita River ecosystem.
<i>Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California</i>	U.S. Navy 2018	<p>Includes the following aquatic resource goals for portions of the base and air station in the GAI:</p> <ul style="list-style-type: none"> Enhance vernal pools along existing roads from a 1998 baseline for the benefit of San Diego button celery (<i>Eryngium aristulatum</i> var. <i>parishii</i>), spreading navarretia, San Diego fairy shrimp, and Riverside fairy shrimp. Control nonnative aquatic wildlife species in the Santa Margarita River, San Onofre Creek-Frontal Gulf of Santa Catalina, and San Mateo Creek HUC-10s, which are in the Aliso-San Onofre and Santa Margarita HUC-8s. Eliminate giant reed, tamarisk, and perennial pepperweed from the Santa Margarita River and San Mateo Creek and reduce base-wide coverage of these species to less than 1 percent.
<i>Final Integrated Natural Resources Management Plan for Naval Base Ventura County Point Mugu and Special Areas</i>	U.S. Navy 2013	Includes a goal to enhance and restore coastal wetlands occupied by salt marsh bird's beak, and identifies the following invasive species that occur in aquatic habitats as priorities for removal when found: giant reed, perennial pepperweed, tamarix, Caulerpa (<i>Caulerpa taxifolia</i>) western mosquito fish, and yellowfin goby (<i>Acanthogobius flavimanus</i>).
<i>Final Land Management Plan Burton Mesa Ecological Reserve</i>	California Department of Fish and Game 2007	Includes goals to expand vernal pool habitats where possible south of State Route 1, work with Caltrans to install and maintain sediment traps in the Vandenburg Management Unit, and prioritize removal of pampas grass and veldt grass (<i>Ehrharta</i> sp.).

Document	Reference	Information Identified
<i>Habitat Restoration and Enhancement Plan Nature Reserve of Orange County Central Coastal Subregion</i>	Nature Reserve of Orange County 2003	Includes prioritization of restoration in the Orange County Central Coastal Subregion NCCP/HCP area. Priorities include the removal of the following species from the following areas: <ul style="list-style-type: none"> ▪ Cape ivy in the entire area ▪ Artichoke thistle in the vicinity of riparian corridors ▪ Poison hemlock in the riparian areas of Crystal Cove State Park ▪ Harding grass (<i>Phalaris aquatica</i>) and Italian thistle (<i>Carduus pycnocephalus</i>) in the El Toro drainage, with replacement by oak riparian woodland and wet meadow habitat ▪ Giant reed from Aliso Creek ▪ Tamarix from the Agua Chinon Wash ▪ Giant reed, fennel, and Spanish broom in Santiago Creek
<i>Hopper Mountain, Bitter Creek, and Blue Ridge National Wildlife Refuges Final Comprehensive Conservation Plan and Environmental Assessment</i>	FWS 2013c	Includes the following goals for the Bitter Creek National Wildlife Refuge: <ul style="list-style-type: none"> ▪ Eliminate all occurrences of tree of heaven and tamarix in the refuge. ▪ Restore natural spring flow in three sub-watersheds in the six watersheds of the refuge. Note, six HUC-12 boundaries intersect with the refuge, of which the Ballinger Canyon Wash (180600070201), Bitter Creek (180300031402), and The Wash (180600070204) occur in the GAI. Includes the following goals for the Hopper Mountain National Wildlife Refuge: <ul style="list-style-type: none"> ▪ Manage the reserves 420 acres of grassland habitat to provide a mosaic of grassland habitat types, which could include freshwater, saltwater, and tule marshes. ▪ Manage the wetland near the refuge main office such that half of the wetland has depth of greater than 3 feet and the other half of the wetland is dominated by native emergent plant species. Of particular benefit is to manage this area for the spread of hemp dogbane (<i>Apocynum cannabinum</i>) for use by the Chumash Tribe. ▪ Reduce reed canary grass (<i>Phalaris arundinacea</i>), black locust (<i>Robinia psuedoacacia</i>), rabbit's foot grass (<i>Polypogon monspiliensis</i>), and greater periwinkle by at least 80 percent in all aquatic habitats.
<i>La Purisima State Historic Park General Plan</i>	California State Parks 1991	Includes a goal to conduct restoration of Los Berros Creek so that it has a minimum 100-foot-wide corridor of native riparian vegetation.
<i>Leo Carrillo State Park General Plan</i>	California State Parks 1996	Includes a goal to restore Arroyo Sequit in a manner that also enhances the population of southern California DPS steelhead.
<i>Los Padres National Forest Strategy</i>	USFS 2005c	Includes a goal to enhance stream systems in the forest by control of non-native plants, in particular giant reed and tamarix, along with non-native bullfrogs and warmwater fish for the benefit of Pacific lamprey (<i>Entosphenus tridentatus</i>), southern California DPS steelhead, and other native fish.
<i>Malibu Creek State Park General Plan and Final Impact Report</i>	California State Parks 2005a	Includes a goal to enhance and restore Las Virgenes Creek and Malibu Creek.
<i>Marina del Rey Land Use Plan</i>	Los Angeles County 2012	A component of the Los Angeles County LCP. Includes priorities to conduct habitat restoration at the following locations: Oxford Detention Basin, Wetland Park at Parcel 9, and the margin of the Ballona wetlands.
<i>Playa Vista Area B Specific Plan</i>	City of Los Angeles 1990	A component of the Los Angeles LCP that identifies 10 acres of the Ballona Wetlands complex as intended for habitat restoration.
<i>Recovery Plan for Vernal Pool Ecosystems of Southern California</i>	FWS 1998a	The Goleta, Los Angeles Basin-Orange, Riverside, and Transverse Management Areas occur in the GAI; however, none of the vernal pools identified in the Riverside Management Area occur in the GAI. The general recovery objective of this plan is to downlist from endangered to threatened a number of species that require vernal pools, and to conserve and enhance vernal pool ecosystems that occur in Southern California such that the long-term survival of the species is ensured. Species to be downlisted that occur in the GAI include San Diego fairy shrimp, Riverside fairy shrimp, and California Orcutt grass (<i>Orcuttia californica</i>). An additional goal exists to ensure the long-term conservation of spreading navarretia, which was listed as threatened after publication of this plan. Specific goals for downlisting of these species that are relevant to the GAI in this plan include: <ul style="list-style-type: none"> ▪ Habitat enhancement and/or restoration in the Carlsberg, Cruzan Mesa, Fairview Park, and Woodland Hills vernal pool complexes. ▪ Ensure population trends of any of the above-mentioned species present in the vernal pool complexes are stable or increasing for 10 consecutive years.

Document	Reference	Information Identified
<i>Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon</i>	FWS 2005	The Western Riverside County region, the San Diego region, and the Ventura County and Lake Cachuma core areas of the Santa Barbara region occur in the GAI. Listed species for recovery that use aquatic habitat in the core areas include vernal pool fairy shrimp and conservancy fairy shrimp. Additional species expected to benefit from recovery actions in these areas include little mousetail (<i>Myosurus minimus</i> var. <i>apus</i>) and western spadefoot toad (<i>Spea hammondi</i>). This plan overlaps with the <i>Recovery Plan for Vernal Pool Ecosystems of Southern California</i> (FWS 1998a), which is generally used by preference for Southern California vernal pool systems.
<i>Rio de Los Angeles State Park General Plan and Final Impact Report</i>	California State Parks 2005b	Includes a goal to conduct restoration along the portion of the Los Angeles River occurring in the park.
<i>San Buenaventura State Beach General Plan</i>	California State Parks 1979	Includes a goal to enhance Allesandro Lagoon.
<i>Santa Barbara County Comprehensive Plan Coastal Land Use Plan</i>	Santa Barbara County 2019	Includes a goal for restoration of Carpinteria Marsh.
<i>Santa Clara River Enhancement and Management Plan</i>	Ventura County Watershed Protection District and Los Angeles County Department of Public Works 2005	Identifies numerous goals in two categories. River-wide goals include the removal of giant reed, tamarix, African clawed frogs, and bullfrogs, as well as the restoration of riparian habitat generally. Reach-specific goals are as follows: <ul style="list-style-type: none"> ▪ Address bank habitat loss upstream of the Harbor Boulevard Bridge. ▪ Restore habitat on the south side of the river between the levee and active river channel. ▪ Enhance the Salt Creek drainage for use as a wildlife linkage between the Salt Creek watershed and the Santa Clara River.
<i>Seal Beach National Wildlife Refuge Final Comprehensive Conservation Plan</i>	FWS 2012b	Identifies a general goal to enhance aquatic habitats in the refuge, and the following specific goals: <ul style="list-style-type: none"> ▪ Restore approximately 14 acres of disturbed upland habitat into native wetland and wetland/upland transitional habitat in the vicinity of the 7th Street Pond. ▪ Restore approximately 22 acres of disturbed upland habitat into native wetland and wetland/upland transitional habitat in the vicinity of the Case Road Pond.
<i>South Coast Resource Management Plan Draft Resource Management Plan and Environmental Impact Statement</i>	BLM 2011	Identifies a goal to remove tamarix from riparian habitats of the management area, which is distributed in numerous relatively small parcels in the GAI.
<i>Strategic Plan to Protect California's Coast and Ocean 2020–2025</i>	OPC 2019	Identified a number of targets for specific actions, including: <ul style="list-style-type: none"> ▪ Protect, restore, or create an additional 10,000 acres of coastal wetlands by 2025. ▪ Have a net increase in coastal wetlands of 20 percent by 2030 and 50 percent by 2040. ▪ Ensure the California coast is resilient to at least 3.5 feet of sea-level rise by 2050.
<i>SWAP</i>	CDFW 2015	Identified American southwest riparian forest and woodland and freshwater marsh as conservation targets.
<i>Topanga State Park Final General Plan</i>	California State Parks 2012	Includes a specific goal to enhance Topanga Creek and associated lagoons, as well as a general goal to restore all wetlands in the park.
<i>Upper Santa Ana River Integrated Regional Water Management Plan</i>	Upper Santa Ana River Watershed Integrated Regional Water Management Region 2015	Includes goals to improve water quality, specifically related to dissolved solids and nitrogen compounds, and enhance 1,200 acres of riparian habitat in the plan area, which approximately corresponds to the northeastern half of the Santa Ana HUC-8.
<i>Upper Santa Clara River Integrated Regional Water Management Plan</i>	Regional Water Management Group 2014	Includes a goal to remove giant reed and tamarix from the Upper Santa Clara River corridor.
<i>Ventura County General Plan Coastal Area Plan</i>	Ventura County Planning Division 2017	The plan breaks the Ventura Count shoreline into three segments: <ul style="list-style-type: none"> ▪ North Coast – Identifies Rincon Creek as an ESHA. ▪ Central Coast – Includes goals to enhance and/or restore the wetlands and other aquatic features of the central portion of the county, including the mouth of the Santa Clara River, McGrath Lake, the wetlands associated with Ormond Beach, and a wetland segment south of the Edison Plant (in the city of Oxnard). ▪ South Coast – Identifies Calleguas Creek as well as the creeks associated with La Jolla Canyon, Big Sycamore Canyon, Serrano Canyon, Deer Creek Canyon, and Little Sycamore Canyon as ESHAs.

Document	Reference	Information Identified
<i>Ventura River Watershed Management Plan</i>	Ventura River Watershed Council 2015	The plan area covers the Ventura River HUC-10 (1807010101). The plan includes general goals to enhance all aquatic habitat in the plan area and reduce sedimentation of the watershed, and a specific priority to remove giant reed from the watershed, particularly from San Antonio Creek and the Ventura River.
<i>Watersheds Coalition of Ventura County Integrated Regional Water Management Plan</i>	Watersheds Coalition of Ventura County 2019	The plan includes prioritization of water quality improvement through total maximum daily load implementation, enhancement of Conejo Creek and associated Wildwood Park, as well as restoration and invasive species at Calleguas Creek, Santa Clara River, and the Ventura River.
<i>Wetlands on the Edge. The Future of Southern California's Wetlands. Regional Strategy 2018.</i>	California Coastal Conservancy 2018	<p>This document is the product of a collective effort of the California Coastal Conservancy, EPA, NOAA, and FWS, with additional input from CDFW, CNRA, CCC, SWRCB, Los Angeles RWQCB, San Diego RWQCB, Santa Ana RWQCB, and the Corps. These natural resource regulatory agencies are identified as members of the Director's Group and/or Wetland Managers Group, which decide and implement the strategy. Includes the following goals, some of which are for the Southern California region as a whole, and some are specific to subregions, all of which are either wholly or partially in the GAI:</p> <ul style="list-style-type: none">▪ For specific subregions, a goal is to restore specific acreages of tidal wetlands with the assumption that there will be 2 feet of sea-level rise, focusing on areas where future tidal wetlands will develop from the new shoreline:<ul style="list-style-type: none">○ San Diego – 1,526 acres○ San Pedro – 2,036 acres○ Santa Barbara – 423 acres○ Santa Monica – 234 acres○ Ventura – 3,535 acres▪ Increase the area of tidal wetland-upland transition so that at least 40 percent of a tidal wetland has a transition zone and increase the transition up to 500 meters in size.▪ Restore 49,421 acres of non-tidal wetlands across all subregions.▪ Restore or maintain 189,036 acres of streams and associated non-tidal wetlands across all subregions.▪ Restore or maintain 21,004 acres of non-tidal and non-riverine wetlands across all subregions.
City General Plan Summary	See below	See below
Twenty of the city general plans identified in Chapter 3 have goals pertaining to the enhancement and/or restoration of specific aquatic features. A list of the features identified in these plans is provided in the <i>Information Identified</i> column.	City of Chino 2010; City of Huntington Beach 2017; City of Laguna Hills 2009; City of Laguna Niguel 1992; City of Murrieta 2011; City of Orange 2010; City of Oxnard 2016; City of Pico Rivera 2014; City of Port Hueneme 2001; City of Rancho Santa Margarita 2020; City of Redlands 2017; City of San Bernardino 2005; City of San Gabriel 2004; City of Santa Barbara 2011; City of Santa Paula 2020; City of Simi Valley 2012; City of Solvang 2016; City of Temecula 2013; City of Thousand Oaks 2017; City of Ventura 2005; City of Walnut 2018; City of Yucaipa 2016	Alessandro Lagoon, Aliso Creek, Arroyo Conejo, Arroyo Simi, Bubbling Springs Creek, Cable Creek, Cajon Creek/Wash, Calleguas Creek, Chino Creek, City Creek, Cucamonga Creek, Edison Canal, Goleta Slough, Huntington Beach wetland complex, Laguna Channel, Malibu Creek, McGrath Lake, Mill Creek, Mission Creek, Morey Arroyo, Mugu Lagoon, Murrieta Creek, Oak Glen Creek, Ormond Beach wetland complex, Rio Hondo, Salt Creek, San Gabriel River, San José Creek, Santa Ana River, Santa Clara River, Santa Margarita River, Santa Ynez River, Santiago Creek, Sulphur Creek, Sycamore Creek, Temecula Creek, Upper Oso Reservoir, Veeh Reservoir, and Yucaipa Creek.

8.5.2. Invasive Species

Transportation projects and associated ongoing maintenance activities have the potential to introduce and/or spread nonnative, invasive species. When invasive, nonnative species enter an ecosystem, they can disrupt the natural balance, resulting in a reduction of biodiversity, degradation of habitats, alteration of native genetic diversity, shifting of wetland type, disruption of aquatic and terrestrial connectivity, and further threats to already endangered or threatened natural resources. Invasive plant species that affect riparian systems in the GAI include tree-of-heaven, Mexican fan palm, giant reed, tamarisk, red gum (*Eucalyptus camaldulensis*), and Canary Island date palm (Cal-IPC 2021). Invasive vertebrate wildlife species that affect riparian systems in the GAI include American bullfrog, African clawed frog, nonnative crayfish, yellowfin goby, and western mosquitofish (CDFW 2015; U.S. Navy 2013; Ventura County Watershed Protection District and Los Angeles County Department of Public Works 2005). These species damage aquatic ecosystems by direct predation on native species or by outcompeting native species for food (CDFW 2015).

Additionally, Quagga mussels have been found in many locations of the GAI, including Lake Piru, Lower Piru Creek, Angeles Tunnel, Elderberry Forebay, Pyramid Lake, Santa Clara River, Upper San Gabriel River below Morris Dam, Black and Gold Golf Course pond, Walnut Canyon Reservoir, Kraemer Basin, Lake Forest, and Lake Forest Keys (CDFW 2017). Quagga mussels damage aquatic ecosystems by direct predation on native species, outcompeting native species for food, or by damaging trees in riparian areas (CDFW 2015). Quagga mussels are known to cause significant ecosystem and economic damage by consuming and reducing phytoplankton, an important component of aquatic food webs, and by overcrowding the bottom of lakes and reservoirs and clogging water pipes, screens, and filters (California Science Advisory Panel 2007).

8.5.3. Altered Hydrology, Geomorphology, and Water Quality

Water quality and hydrology can be directly altered by physical barriers, such as dams, roads, and canals, which can have effects both upstream and downstream by truncating connectivity, altering sediment transport processes, and altering flow. Stable geomorphology and sediment transport are critical to maintaining healthy streams so that degradation and aggradation do not destroy habitats in the stream and riparian and wetland habitats downstream. The loss of wetlands can result in increased flooding and decreased water quality in downstream tributaries. Water diversions, in-channel construction, riparian vegetation reduction, agriculture, alteration of streambed and banks, components of timber management, and point and nonpoint source pollution have affected the aquatic ecosystem by altering historical flooding regimes, erosion, and deposition of sediments that maintain floodplains (CDFW 2015). Although connectivity appears to be improving in the main rivers of the GAI, fragmentation may still be happening on lower-order tributary streams as a result of urban development (FWS 2006).

8.5.4. Climate Change, Drought, and Sea-level Rise

Section 2.5 provided a brief overview of the GAI's climate and available planning-level predictions for climate change and sea-level rise for the region. In the next 30 years, the climate is expected to change. Expected changes include extended periods of higher temperatures; large fluctuations in precipitation, with dry years becoming drier and wet years becoming wetter; sea-level rise; storm surges; cliff retreat attributable to coastal erosion; and an increased risk of wildfire and flooding (Caltrans 2019b).

Climate change is expected to affect freshwater wetland habitats by reducing those away from the coast that are surrounded by upland habitat, with sea-level rise expected to flood those near the coast (CDFW 2015). As drought continues to stress the urban environments' water supply, additional catchment and storage structures are expected to reduce the volume of urban streamflow into many of the aquatic systems that now receive a higher percentage of the total water from this source. Additionally, sea-level rise is expected to completely flood and eliminate the coastal marshes that are currently present in the highly urbanized areas of the GAI by 2100 because of the lack of upstream open space available for coastal marsh migration (Hall et al. 2018).

8.5.5. Wildfire Risk

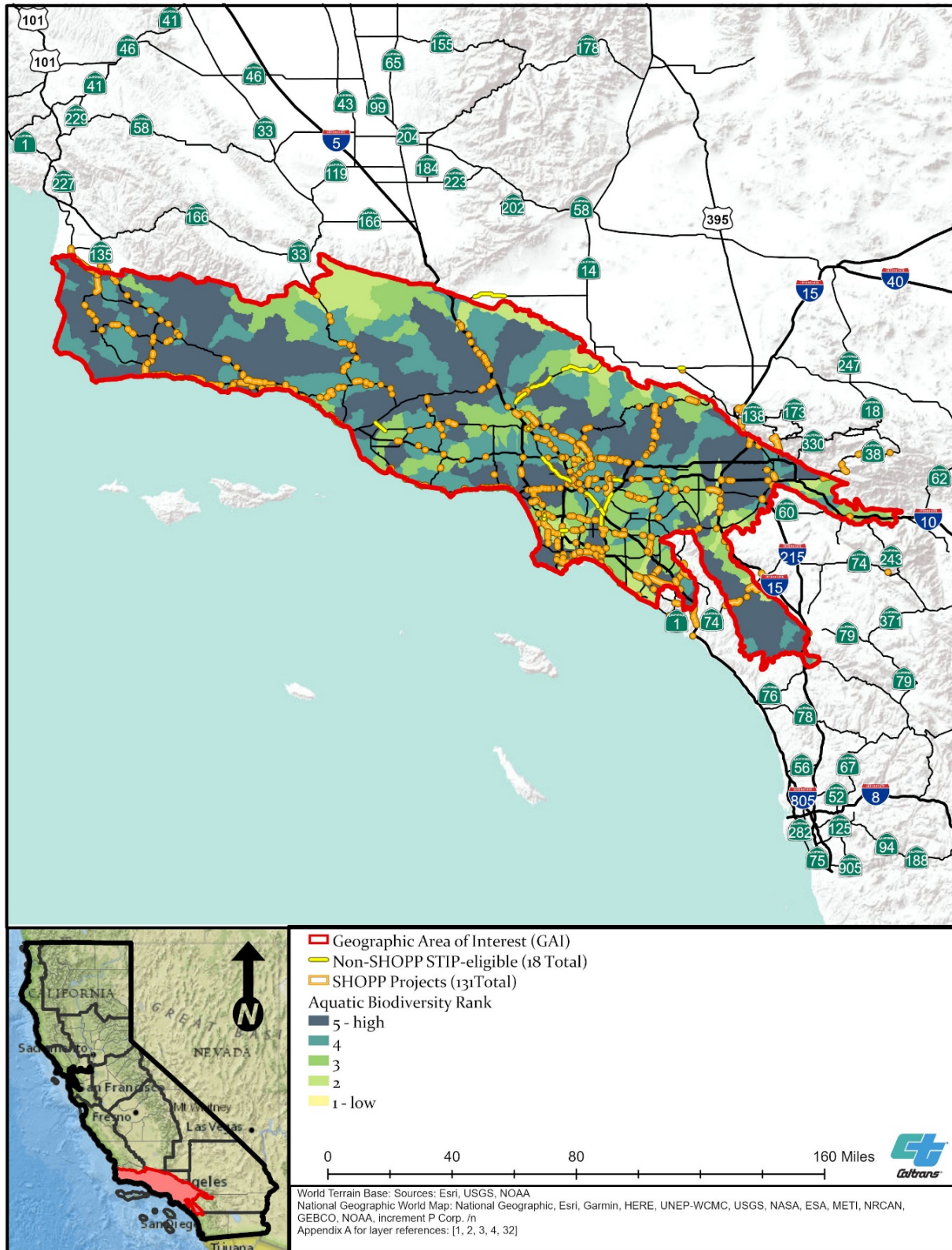
Vegetation can be altered by large-scale wildfire effects by altering microclimatic regimes, increasing runoff and river discharge, and enhancing erosion and sediment inputs, transport, and deposition. Fires can also affect the physical characteristics of riparian and wetland ecosystems by transitioning vegetation from aquatic and riparian areas to uplands (Bixby et al. 2015). Fire in riparian zones can reduce canopy cover, resulting in increased water temperatures (CDFW 2015).

8.6 Multi-resource Benefits

Advance mitigation planning provides Caltrans an opportunity to integrate the enhancement and/or restoration of multiple aquatic resource-related values into its advance mitigation scoping to benefit California native aquatic biodiversity, aquatic and terrestrial connectivity, special-status species, wetlands, and non-wetland aquatic resources.

- Figure 8-1 illustrates the regional aquatic biodiversity in the GAI, as provided by CDFW's ACE GIS dataset. According to these data, high aquatic biodiversity dominates the GAI; however, some areas of medium to low aquatic biodiversity are located along the SHS with planned SHOPP projects, especially in the southeastern portion of the GAI.

Figure 8-1. Aquatic Biodiversity of the GAI



- Enhancing and/or restoring the aquatic resources of the GAI is expected to contribute to biologically sustainable populations of special-status aquatic, wetland, and riparian plant and wildlife species. For example, increasing the amount, complexity, and connectivity of riparian habitat will provide additional shaded riverine aquatic habitat in the GAI that can benefit fish species such as arroyo chub, unarmored threespine stickleback, and Santa Ana sucker, as well as other species that use aquatic habitat, such as least Bell's vireo.
- Enhancing and/or restoring the aquatic resources of the GAI is expected to support or contribute to beneficial uses of wetland and non-wetland waters of the GAI. For example, enhancement and/or restoration of wetlands adjacent to wildlife habitat would likely improve wildlife habitat water quality. Further, enhancement and/or restoration of wetlands adjacent to GAI waterways could sequester contaminants on waterways identified as 303(d) impaired and/or with an established total maximum daily load.

Caltrans will consider aquatic resources' biodiversity values, special-status species with the potential to co-occur in aquatic habitats, ESHAs, the beneficial uses of waterways, and impaired waterways during advance mitigation project scoping—thereby improving the conservation benefits of mitigation in the GAI.

8.7 Advance Mitigation Conservation Goals and Objectives

The conservation goals and objectives compiled in Table 8-5 are intended to be relevant to anticipated future SHOPP transportation project compensatory mitigation needs, be consistent with the goals and objectives of natural resource regulatory agencies for aquatic resources, address pressures and stressors on aquatic resources, and support mitigation success in the GAI. Each conservation goal is supported by one or more conservation objective; objectives are more specific, measurable, achievable, relevant, and time-bound measures that align to a desired result specified by a goal. At the broad scale, these aquatic resources goals and objectives encompass ecological processes, address functions and values of aquatic systems, and prioritize regional conservation that preserves intact aquatic resources, restores aquatic function, and supports climate change planning. Sub-objectives are included for each objective to guide Caltrans' advance mitigation scoping toward those actions that would create the greatest functional lift or conservation benefit, support long-term preservation, restore surface water flows, protect and restore hydrologic processes such as channel stability, and reduce climate change effects on aquatic resources in the GAI. Sub-objectives also capture specific measures from conservation and land management plans that address threats to aquatic resources. Several of the goals are interrelated, and many objectives could apply to more than one goal; objectives were grouped with the goal to which they most specifically aligned. Goals and objectives are generally presented in order from general to more specific.

Table 8-5. Advance Mitigation Conservation Goals and Objectives for Aquatic Resources

Objective	Sub-Objective	Alignment with Documents Identified in Table 8-4
Goal AR-1: No net loss of area, functions, values, and condition of wetland and non-wetland water resources	See below	See below
Objective AR-1.1: Improve quality and function of wetland and non-wetland water resources.	<p>Sub-Objective AR-1.1.1: Enhance and/or rehabilitate wetland and non-wetland water resources such that the greatest functional lift to the aquatic resource is provided, including by consolidating compensatory mitigation consistent with Executive Order W59-93.</p> <p>Sub-Objective AR-1.1.2: Enhance and/or rehabilitate key wetland and non-wetland water habitats that are identified in the SWAP, FWS recovery plans, LCPs, and other land management plans identified in Table 8-4.</p> <p>Sub-Objective AR-1.1.3: Enhance and/or rehabilitate riparian vegetation in the HUC-8s of the GAI, particularly the Santa Ynez River, Santa Clara River, Piru Creek, Ventura River, Santa Ana River, Sespe Creek, and the San Gabriel River, as well as other named and unnamed tributaries, many of which are listed in Tables 8-2 and 8-3.</p> <p>Sub-Objective AR-1.1.4: Enhance and/or rehabilitate wetland and non-wetland water resource functions, such as connectivity, abundance of native plants, stream geomorphology, and water quality, that define habitat value for aquatic organisms.</p>	<ul style="list-style-type: none">▪ <i>2008 Final Compensatory Mitigation Rule</i> (73 Federal Register 19670)▪ <i>Angeles National Forest Strategy</i> (USFS 2005a)▪ <i>California Wetlands Conservation Policy</i> (Executive Order W-59-93)▪ <i>Chino Hills State Park General Plan</i> (California State Parks 1999)▪ <i>City of Huntington Beach General Plan Coastal Element</i> (City of Huntington Beach 2011)▪ <i>City of Oxnard Coastal Land Use Plan</i> (City of Oxnard 2002)▪ <i>City of Santa Barbara Coastal Plan Airport and Goleta Slough</i> (City of Santa Barbara 2003)▪ <i>City of Santa Barbara LCP Coastal Land Use Plan</i> (City of Santa Barbara 2019)▪ <i>Definition and Delineation of Wetlands in the Coastal Zone</i> (CCC 2011)▪ <i>Design Criteria for Southern California National Forests</i> (USFS 2005e)▪ <i>Ecological Restoration Implementation Plan</i> (USFS 2013)▪ <i>Final Integrated Natural Resources Management Plan Naval Weapons Station Seal Beach, California</i> (U.S. Navy 2014)▪ <i>Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook</i> (U.S. Navy 2016)▪ <i>Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California</i> (U.S. Navy 2018)▪ <i>Final Integrated Natural Resources Management Plan for Naval Base Ventura County Point Mugu and Special Areas</i> (U.S. Navy 2013)▪ <i>Habitat Restoration and Enhancement Plan Nature Reserve of Orange County Central Coastal Subregion</i> (Nature Preserve of Orange County 2003)▪ <i>Hopper Mountain, Bitter Creek, and Blue Ridge National Wildlife Refuges Final Comprehensive Conservation Plan and Environmental Assessment</i> (FWS 2013c)▪ <i>La Purisima State Historic Park General Plan</i> (California State Parks 1991)▪ <i>Los Padres National Forest Strategy</i> (USFS 2005)▪ <i>Malibu Creek State Park General Plan and Final Impact Report</i> (California State Parks 2005a)▪ <i>National Wetlands Mitigation Action Plan</i> (EPA and Corps 2002)▪ <i>Recovery Plan for Vernal Pool Ecosystems of Southern California</i> (FWS 1998a)▪ <i>Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon</i> (FWS 2005)▪ <i>Regional Compensatory Mitigation and Monitoring Guidelines for South Pacific Division</i> (Corps 2015)▪ <i>Rio de Los Angeles State Park General Plan and Final Impact Report</i> (California State Parks 2005b)▪ <i>San Buenaventura State Beach General Plan</i> (California State Parks 1979)▪ <i>Santa Barbara County Comprehensive Plan Coastal Land Use Plan</i> (Santa Barbara County 2019)▪ <i>Santa Clara River Enhancement and Management Plan</i> (Ventura County Watershed Protection District and Los Angeles County Department of Public Works 2005)▪ <i>Seal Beach National Wildlife Refuge Final Comprehensive Conservation Plan</i> (FWS 2012b)▪ <i>South Coast Resource Management Plan Draft Resource Management Plan and Environmental Impact Statement</i> (BLM 2011)▪ <i>State Wetland Definition and Procedures for Discharges of Dredged or Fill Material in Waters of the State</i> (State Water Board 2019b)▪ <i>Strategic Plan to Protect California's Coast and Ocean 2020–2025</i> (OPC 2019)▪ <i>SWAP</i> (CDFW 2015)▪ <i>Topanga State Park Final General Plan</i> (California State Parks 2012)▪ <i>Upper Santa Clara River Integrated Regional Water Management Plan</i> (Regional Water Management Group 2014)▪ <i>Ventura County General Plan Coastal Area Plan</i> (Ventura County Planning Division 2017)▪ <i>Ventura River Watershed Management Plan</i> (Ventura River Watershed Council 2015)▪ <i>Watersheds Coalition of Ventura County Integrated Regional Water Management Plan</i> (Watersheds Coalition of Ventura County 2019)

Objective	Sub-Objective	Alignment with Documents Identified in Table 8-4
Goal AR-1.2: Avoid a net loss of aquatic resource acreage by establishing aquatic resources.	<p>Sub-Objective AR-1.2.1: Establish and/or reestablish wetland and non-wetland water aquatic resources.</p> <p>Sub-Objective AR-1.2.2: Establish and/or reestablish key wetland and non-wetland water habitats that are identified in the SWAP, FWS recovery plans, CDFW recovery plans, LCPs, and other land management plans identified in Table 8-4.</p> <p>Sub-Objective AR-1.2.3: Establish and/or reestablish riparian vegetation in the HUC-8s included in Tables 8-2 and 8-3, particularly the Calleguas Creek, Cuyama River, Los Angeles River, San Gabriel River, San Juan Creek, Santa Ana River, Santa Clara River, Santa Margarita River, Santa Ynez River, Sisquoc River, and the Ventura River as well as other named and unnamed tributaries into the Pacific Ocean, many of which are listed in Tables 8-2 and 8-3.</p>	<ul style="list-style-type: none">▪ <i>2008 Final Compensatory Mitigation Rule</i> (73 Federal Register 19670)▪ <i>Angeles National Forest Strategy</i> (USFS 2005a)▪ <i>California Wetlands Conservation Policy</i> (Executive Order W-59-93)▪ <i>Chino Hills State Park General Plan</i> (California State Parks 1999)▪ <i>City of Huntington Beach General Plan Coastal Element</i> (City of Huntington Beach 2011)▪ <i>City of Oxnard Coastal Land Use Plan</i> (City of Oxnard 2002)▪ <i>City of Santa Barbara Coastal Plan Airport and Goleta Slough</i> (City of Santa Barbara 2003)▪ <i>City of Santa Barbara LCP Coastal Land Use Plan</i> (City of Santa Barbara 2019)▪ <i>Definition and Delineation of Wetlands in the Coastal Zone</i> (CCC 2011)▪ <i>Design Criteria for Southern California National Forests</i> (USFS 2005e)▪ <i>Ecological Restoration Implementation Plan</i> (USFS 2013)▪ <i>Final Integrated Natural Resources Management Plan Naval Weapons Station Seal Beach, California</i> (U.S. Navy 2014)▪ <i>Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook</i> (U.S. Navy 2016)▪ <i>Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California</i> (U.S. Navy 2018)▪ <i>Final Integrated Natural Resources Management Plan for Naval Base Ventura County Point Mugu and Special Areas</i> (U.S. Navy 2013)▪ <i>Habitat Restoration and Enhancement Plan Nature Reserve of Orange County Central Coastal Subregion</i> (Nature Preserve of Orange County 2003)▪ <i>Hopper Mountain, Bitter Creek, and Blue Ridge National Wildlife Refuges Final Comprehensive Conservation Plan and Environmental Assessment</i> (FWS 2013c)▪ <i>La Purisima State Historic Park General Plan</i> (California State Parks 1991)▪ <i>Los Padres National Forest Strategy</i> (USFS 2005)▪ <i>Malibu Creek State Park General Plan and Final Impact Report</i> (California State Parks 2005a)▪ <i>National Wetlands Mitigation Action Plan</i> (EPA and Corps 2002)▪ <i>Recovery Plan for Vernal Pool Ecosystems of Southern California</i> (FWS 1998a)▪ <i>Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon</i> (FWS 2005)▪ <i>Regional Compensatory Mitigation and Monitoring Guidelines for South Pacific Division</i> (Corps 2015)▪ <i>Rio de Los Angeles State Park General Plan and Final Impact Report</i> (California State Parks 2005b)▪ <i>San Buenaventura State Beach General Plan</i> (California State Parks 1979)▪ <i>Santa Barbara County Comprehensive Plan Coastal Land Use Plan</i> (Santa Barbara County 2019)▪ <i>Santa Clara River Enhancement and Management Plan</i> (Ventura County Watershed Protection District and Los Angeles County Department of Public Works 2005)▪ <i>Seal Beach National Wildlife Refuge Final Comprehensive Conservation Plan</i> (FWS 2012b)▪ <i>South Coast Resource Management Plan Draft Resource Management Plan and Environmental Impact Statement</i> (BLM 2011)▪ <i>State Wetland Definition and Procedures for Discharges of Dredged or Fill Material in Waters of the State</i> (State Water Board 2019b)▪ <i>Strategic Plan to Protect California's Coast and Ocean 2020–2025</i> (OPC 2019)▪ <i>SWAP</i> (CDFW 2015)▪ <i>Topanga State Park Final General Plan</i> (California State Parks 2012)▪ <i>Upper Santa Clara River Integrated Regional Water Management Plan</i> (Regional Water Management Group 2014)▪ <i>Ventura County General Plan Coastal Area Plan</i> (Ventura County Planning Division 2017)▪ <i>Ventura River Watershed Management Plan</i> (Ventura River Watershed Council 2015)▪ <i>Watersheds Coalition of Ventura County Integrated Regional Water Management Plan</i> (Watersheds Coalition of Ventura County 2019)

Objective	Sub-Objective	Alignment with Documents Identified in Table 8-4
Goal AR-2: Restore and/or enhance the chemical, physical, and biological integrity of non-wetland waters	See below	See below
Objective AR-2.1: Restore and/or enhance water quality.	<p>Sub-Objective AR-2.1.1: Restore and/or enhance non-wetland waters with RWQCB biology-based beneficial use designations, such as cold freshwater habitat; estuarine habitat; groundwater recharge (where there is a surface water connection); rare, threatened, or endangered species; spawning, reproduction, and/or early development; wetland habitat; and wildlife habitat.</p> <p>Sub-Objective AR-2.1.2: Address aggradation, erosion, nutrients, contaminants, sedimentation, and temperatures in the HUC-8s identified in Tables 8-2 and 8-3.</p> <p>Sub-Objective AR-2.1.3: Implement habitat restoration and enhancement actions that address water quality for aquatic resources, for example, Santa Clara River, Santa Ana River, the San José Creek Diversion Channel, and freshwater and coastal marshes.</p> <p>Sub-Objective AR-2.1.4: Restore and/or enhance areas upstream of places with high water quality protection and remediation values, such as ASBSs, ESHAs, and CCA-designated areas.</p> <p>Sub-Objective AR-2.1.5: Restore or create adjacent wetlands to enhance water quality in tributaries.</p> <p>Sub-Objective AR-2.1.6: Identify small streams and sections of larger streams to remove nonnative plant species that degrade stream water quality, such as Cape ivy (<i>Delairea odorata</i>), giant reed, tamarix, greater periwinkle (<i>Vinca minor</i>).</p> <p>Sub-Objective AR-2.1.7: Improve stream temperatures by increasing shaded riverine aquatic habitat in the Santa Ynez River, Santa Clara River, Piru Creek, Santa Ana River, Sespe Creek, and the San Gabriel River for fish and other aquatic life.</p>	<ul style="list-style-type: none">▪ <i>303(d) List of Impaired Water Bodies</i> (State Water Board 2018)▪ <i>City of Santa Barbara Coastal Plan Airport and Goleta Slough</i> (City of Santa Barbara 2003)▪ <i>City of Walnut General Plan</i> (City of Walnut 2018)▪ <i>Final Integrated Natural Resources Management Plan Naval Weapons Station Seal Beach, California</i> (U.S. Navy 2014)▪ <i>Final Land Management Plan Burton Mesa Ecological Reserve</i> (California Department of Fish and Game 2007)▪ <i>Hopper Mountain, Bitter Creek, and Blue Ridge National Wildlife Refuges Final Comprehensive Conservation Plan and Environmental Assessment</i> (FWS 2013c)▪ <i>Santa Clara River Enhancement and Management Plan</i> (Ventura County Watershed Protection District and Los Angeles County Department of Public Works 2005)▪ <i>SWAP</i> (CDFW 2015)▪ <i>Upper Santa Ana River Integrated Regional Water Management Plan</i> (Upper Santa Ana River Watershed Integrated Regional Water Management Region 2015)▪ <i>Upper Santa Clara River Integrated Regional Water Management Plan</i> (Regional Water Management Group 2014)▪ <i>Ventura River Watershed Management Plan</i> (Ventura River Watershed Council 2015)▪ <i>Water Quality Control Plan for the Central Coast Basin</i> (Central Coast RWQCB 2019)▪ <i>Water Quality Control Plan for the Lahontan Region Basin</i> (Lahontan RWQCB 2020)▪ <i>Water Quality Control Plan for the Los Angeles Region Basin</i> (Los Angeles RWQCB 2020)▪ <i>Water Quality Control Plan for the San Diego Basin Region</i> (San Diego RWQCB 2016)▪ <i>Water Quality Control Plan for the Santa Ana River Basin</i> (Santa Ana RWQCB 2019)▪ <i>Water Quality Control Plan for the Tulare Lake Basin</i> (Central Valley RWQCB 2018)▪ <i>Watersheds Coalition of Ventura County Integrated Regional Water Management Plan</i> (Watersheds Coalition of Ventura County 2019)

Objective	Sub-Objective	Alignment with Documents Identified in Table 8-4
Objective AR-2.2: Improve surface water hydrology.	<p>Sub-Objective AR-2.2.1: Restore and/or enhance natural hydrologic regimes, natural sediment transport, and geomorphic processes.</p> <p>Sub-Objective AR-2.2.2: Reconnect severed aquatic systems and improve connectivity in aquatic and riparian systems, with particular focus on reconnecting higher watershed areas with lower watershed areas.</p> <p>Sub-Objective AR-2.2.3: Reestablish hydrologic regimes or drainage patterns for better function of depressional seasonal wetlands, estuarine and marine wetlands, freshwater ponds, lakes, and riverine systems.</p>	<ul style="list-style-type: none">▪ <i>303(d) List of Impaired Water Bodies</i> (State Water Board 2018)▪ <i>City of Santa Barbara Coastal Plan Airport and Goleta Slough</i> (City of Santa Barbara 2003)▪ <i>City of Walnut General Plan</i> (City of Walnut 2018)▪ <i>Final Integrated Natural Resources Management Plan Naval Weapons Station Seal Beach, California</i> (U.S. Navy 2014)▪ <i>Final Land Management Plan Burton Mesa Ecological Reserve</i> (California Department of Fish and Game 2007)▪ <i>Hopper Mountain, Bitter Creek, and Blue Ridge National Wildlife Refuges Final Comprehensive Conservation Plan and Environmental Assessment</i> (FWS 2013c)▪ <i>Santa Clara River Enhancement and Management Plan</i> (Ventura County Watershed Protection District and Los Angeles County Department of Public Works 2005)▪ <i>SWAP</i> (CDFW 2015)▪ <i>Upper Santa Ana River Integrated Regional Water Management Plan</i> (Upper Santa Ana River Watershed Integrated Regional Water Management Region 2015)▪ <i>Upper Santa Clara River Integrated Regional Water Management Plan</i> (Regional Water Management Group 2014)▪ <i>Ventura River Watershed Management Plan</i> (Ventura River Watershed Council 2015)▪ <i>Water Quality Control Plan for the Central Coast Basin</i> (Central Coast RWQCB 2019)▪ <i>Water Quality Control Plan for the Lahontan Region Basin</i> (Lahontan RWQCB 2020)▪ <i>Water Quality Control Plan for the Los Angeles Region Basin</i> (Los Angeles RWQCB 2020)▪ <i>Water Quality Control Plan for the San Diego Basin Region</i> (San Diego RWQCB 2016)▪ <i>Water Quality Control Plan for the Santa Ana River Basin</i> (Santa Ana RWQCB 2019)▪ <i>Water Quality Control Plan for the Tulare Lake Basin</i> (Central Valley RWQCB 2018)▪ <i>Watersheds Coalition of Ventura County Integrated Regional Water Management Plan</i> (Watersheds Coalition of Ventura County 2019)

Objective	Sub-Objective	Alignment with Documents Identified in Table 8-4
Objective AR-2.3: Improve water storage and groundwater recharge	<p>Sub-Objective AR-2.3.1: Promote restoration of stream and riparian areas' natural functions to provide water storage and release.</p> <p>Sub-Objective AR-2.3.2: Reduce excessive and invasive vegetation along stream/riparian corridors to lower vegetative transpiration rates to sustainable levels and increase water storage in soils and streams.</p> <p>Sub-Objective AR-2.3.3: Create or restore adjacent wetlands to enhance groundwater-surface water dynamics in tributaries.</p>	<ul style="list-style-type: none">▪ <i>303(d) List of Impaired Water Bodies</i> (State Water Board 2018)▪ <i>City of Santa Barbara Coastal Plan Airport and Goleta Slough</i> (City of Santa Barbara 2003)▪ <i>City of Walnut General Plan</i> (City of Walnut 2018)▪ <i>Final Integrated Natural Resources Management Plan Naval Weapons Station Seal Beach, California</i> (U.S. Navy 2014)▪ <i>Final Land Management Plan Burton Mesa Ecological Reserve</i> (California Department of Fish and Game 2007)▪ <i>Hopper Mountain, Bitter Creek, and Blue Ridge National Wildlife Refuges Final Comprehensive Conservation Plan and Environmental Assessment</i> (FWS 2013c)▪ <i>Santa Clara River Enhancement and Management Plan</i> (Ventura County Watershed Protection District and Los Angeles County Department of Public Works 2005)▪ <i>SWAP</i> (CDFW 2015)▪ <i>Upper Santa Ana River Integrated Regional Water Management Plan</i> (Upper Santa Ana River Watershed Integrated Regional Water Management Region 2015)▪ <i>Upper Santa Clara River Integrated Regional Water Management Plan</i> (Regional Water Management Group 2014)▪ <i>Ventura River Watershed Management Plan</i> (Ventura River Watershed Council 2015)▪ <i>Water Quality Control Plan for the Central Coast Basin</i> (Central Coast RWQCB 2019)▪ <i>Water Quality Control Plan for the Lahontan Region Basin</i> (Lahontan RWQCB 2020)▪ <i>Water Quality Control Plan for the Los Angeles Region Basin</i> (Los Angeles RWQCB 2020)▪ <i>Water Quality Control Plan for the San Diego Basin Region</i> (San Diego RWQCB 2016)▪ <i>Water Quality Control Plan for the Santa Ana River Basin</i> (Santa Ana RWQCB 2019)▪ <i>Water Quality Control Plan for the Tulare Lake Basin</i> (Central Valley RWQCB 2018)▪ <i>Watersheds Coalition of Ventura County Integrated Regional Water Management Plan</i> (Watersheds Coalition of Ventura County 2019)

Objective	Sub-Objective	Alignment with Documents Identified in Table 8-4
Goal AR-3: Support resiliency of aquatic resources to climate change and sea-level rise	See below	See below
Objective AR-3.1: Reduce impacts from climate change and sea-level rise.	<p>Sub-Objective AR-3.1.1: Enhance rehabilitate, establish, and/or reestablish aquatic resource function and value in areas of lower climate resilience, such as the southeast portion of the GAI, Bolsa Chica wetland complex, Ormond Beach wetland complex, Ballona wetlands complex, Goleta Slough, and Allesandro Lagoon to reduce climate change and sea-level rise effects on aquatic resources.</p> <p>Sub-Objective AR-3.1.2: Prioritize enhancement and/or restoration that will increase resilience to climate change and sea-level rise such as at the Bolsa Chica wetland complex, Ormond Beach wetland complex, Ballona wetlands complex, Goleta Slough, and Allesandro Lagoon.</p> <p>Sub-Objective AR-3.1.3: Prioritize riparian areas of the HUC-8s identified in Tables 8-2 and 8-3 for enhancement and/or restoration to improve freshwater quantity and quality, floodplain connectivity, and in-stream cover continuity.</p> <p>Sub-Objective AR-3.1.4: Enhance, rehabilitate, establish, and/or reestablish aquatic habitats by using native species such as Fremont’s cottonwood (<i>Populus fremontii</i>), western sycamore (<i>Platanus racemosa</i>), willows (<i>Salix</i> sp.), cattails (<i>Typha</i> spp.), rushes (<i>Juncus</i> sp.), and bulrushes (<i>Schoenoplectus</i> sp.) to reduce the effects of climate change.</p> <p>Sub-Objective AR-3.1.5: Reduce adverse instream flooding effects by restoring affected headwater and tributary hydrological functions for the Santa Ana River, Santa Clara River, Santa Ynez River, Tecolotito Creek, and Ventura River.</p> <p>Sub-Objective AR-3.1.6: Prioritize habitat establishment and reestablishment in areas that can also reduce risk in flood-prone systems, in particular areas along the Santa Ana River, Santa Clara River, Santa Ynez River, and Tecolotito Creek.</p>	<ul style="list-style-type: none">▪ <i>Angeles National Forest Strategy</i> (USFS 2005a)▪ <i>City of Huntington Beach General Plan Coastal Element</i> (City of Huntington Beach 2011)▪ <i>City of Oxnard Coastal Land Use Plan</i> (City of Oxnard 2002)▪ <i>City of Santa Barbara Coastal Plan Airport and Goleta Slough</i> (City of Santa Barbara 2003)▪ <i>City of Santa Barbara LCP Coastal Land Use Plan</i> (City of Santa Barbara 2019)▪ <i>Design Criteria for Southern California National Forests</i> (USFS 2005e)▪ <i>Ecological Restoration Implementation Plan</i> (USFS 2013)▪ <i>Final Integrated Natural Resources Management Plan Naval Weapons Station Seal Beach, California</i> (U.S. Navy 2014)▪ <i>Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook</i> (U.S. Navy 2016)▪ <i>Final Integrated Natural Resources Management Plan for Naval Base Ventura County Point Mugu and Special Areas</i> (U.S. Navy 2013)▪ <i>Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California</i> (U.S. Navy 2018)▪ <i>Final Land Management Plan Burton Mesa Ecological Reserve</i> (California Department of Fish and Game 2007)▪ <i>Habitat Restoration and Enhancement Plan Nature Reserve of Orange County Central Coastal Subregion</i> (Nature Preserve of Orange County 2003)▪ <i>Hopper Mountain, Bitter Creek, and Blue Ridge National Wildlife Refuges Final Comprehensive Conservation Plan and Environmental Assessment</i> (FWS 2013c)▪ <i>Leo Carrillo State Park General Plan</i> (California State Parks 1996)▪ <i>Los Padres National Forest Strategy</i> (USFS 2005c)▪ <i>Malibu Creek State Park General Plan and Final Impact Report</i> (California State Parks 2005a)▪ <i>Marina del Rey Land Use Plan</i> (Los Angeles County 2012)▪ <i>Playa Vista Area B Specific Plan</i> (City of Los Angeles 1990)▪ <i>San Buenaventura State Beach General Plan</i> (California State Parks 1979)▪ <i>Santa Barbara County Comprehensive Plan Coastal Land Use Plan</i> (Santa Barbara County 2019)▪ <i>Santa Clara River Enhancement and Management Plan</i> (Ventura County Watershed Protection District and Los Angeles County Department of Public Works 2005)▪ <i>Seal Beach National Wildlife Refuge Final Comprehensive Conservation Plan</i> (FWS 2012b)▪ <i>South Coast Resource Management Plan Draft Resource Management Plan and Environmental Impact Statement</i> (BLM 2011)▪ <i>Strategic Plan to Protect California’s Coast and Ocean 2020–2025</i> (OPC 2019)▪ <i>SWAP</i> (CDFW 2015)▪ <i>Upper Santa Clara River Integrated Regional Water Management Plan</i> (Regional Water Management Group 2014)▪ <i>Ventura County General Plan Coastal Area Plan</i> (Ventura County Planning Division 2017)▪ <i>Ventura River Watershed Management Plan</i> (Ventura River Watershed Council 2015)▪ <i>Wetlands on the Edge. The Future of Southern California’s Wetlands. Regional Strategy 2018</i> (California Coastal Conservancy 2018)

Objective	Sub-Objective	Alignment with Documents Identified in Table 8-4
Objective AR-3.2: Improve aquatic habitat resiliency.	<p>Sub-Objective AR-3.2.1: Promote native plant species that can stabilize banks, improve filtering of nutrient loads from water, and maintain the flood conveyance properties of streams and estuaries, such as rushes, bulrushes, cattail, and willows.</p> <p>Sub-Objective AR-3.2.2: Prioritize management of invasive species that occur in large contiguous areas in aquatic habitats, such as giant reed, tamarisk, red gum, pampas grass, tree of heaven, Cape ivy, African clawed frog, and bullfrog that may be exacerbated by climate change and sea-level rise such that the greatest functional lift is provided.</p> <p>Sub-Objective AR-3.2.3: Enhance, rehabilitate, establish, and/or reestablish small (that is, low order) tributaries/streams that discharge into larger rivers such as the Santa Clara, Ventura, Santa Margarita, Santa Ana, and San Gabriel Rivers.</p>	<ul style="list-style-type: none"> ▪ <i>Angeles National Forest Strategy</i> (USFS 2005a) ▪ <i>City of Huntington Beach General Plan Coastal Element</i> (City of Huntington Beach 2011) ▪ <i>City of Oxnard Coastal Land Use Plan</i> (City of Oxnard 2002) ▪ <i>City of Santa Barbara Coastal Plan Airport and Goleta Slough</i> (City of Santa Barbara 2003) ▪ <i>City of Santa Barbara LCP Coastal Land Use Plan</i> (City of Santa Barbara 2019) ▪ <i>Design Criteria for Southern California National Forests</i> (USFS 2005e) ▪ <i>Ecological Restoration Implementation Plan</i> (USFS 2013) ▪ <i>Final Integrated Natural Resources Management Plan Naval Weapons Station Seal Beach, California</i> (U.S. Navy 2014) ▪ <i>Final Integrated Natural Resources Management Plan for Naval Weapons Station Seal Beach Detachment Fallbrook</i> (U.S. Navy 2016) ▪ <i>Final Integrated Natural Resources Management Plan for Naval Base Ventura County Point Mugu and Special Areas</i> (U.S. Navy 2013) ▪ <i>Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California</i> (U.S. Navy 2018) ▪ <i>Final Land Management Plan Burton Mesa Ecological Reserve</i> (California Department of Fish and Game 2007) ▪ <i>Habitat Restoration and Enhancement Plan Nature Reserve of Orange County Central Coastal Subregion</i> (Nature Preserve of Orange County 2003) ▪ <i>Hopper Mountain, Bitter Creek, and Blue Ridge National Wildlife Refuges Final Comprehensive Conservation Plan and Environmental Assessment</i> (FWS 2013c) ▪ <i>Leo Carrillo State Park General Plan</i> (California State Parks 1996) ▪ <i>Los Padres National Forest Strategy</i> (USFS 2005c) ▪ <i>Malibu Creek State Park General Plan and Final Impact Report</i> (California State Parks 2005a) ▪ <i>Marina del Rey Land Use Plan</i> (Los Angeles County 2012) ▪ <i>Playa Vista Area B Specific Plan</i> (City of Los Angeles 1990) ▪ <i>San Buenaventura State Beach General Plan</i> (California State Parks 1979) ▪ <i>Santa Barbara County Comprehensive Plan Coastal Land Use Plan</i> (Santa Barbara County 2019) ▪ <i>Santa Clara River Enhancement and Management Plan</i> (Ventura County Watershed Protection District and Los Angeles County Department of Public Works 2005) ▪ <i>Seal Beach National Wildlife Refuge Final Comprehensive Conservation Plan</i> (FWS 2012b) ▪ <i>South Coast Resource Management Plan Draft Resource Management Plan and Environmental Impact Statement</i> (BLM 2011) ▪ <i>Strategic Plan to Protect California's Coast and Ocean 2020–2025</i> (OPC 2019) ▪ <i>SWAP</i> (CDFW 2015) ▪ <i>Upper Santa Clara River Integrated Regional Water Management Plan</i> (Regional Water Management Group 2014) ▪ <i>Ventura County General Plan Coastal Area Plan</i> (Ventura County Planning Division 2017) ▪ <i>Ventura River Watershed Management Plan</i> (Ventura River Watershed Council 2015) ▪ <i>Wetlands on the Edge. The Future of Southern California's Wetlands. Regional Strategy 2018</i> (California Coastal Conservancy 2018)

Objective	Sub-Objective	Alignment with Documents Identified in Table 8-4
Goal AR-4: Prioritize multi-resource benefits	See below	See below
Objective AR-4.1: Coordinate mitigation to provide benefits to other resources.	<p>Sub-Objective AR-4.1.1: Enhance, rehabilitate, establish, and/or reestablish aquatic resource areas currently occupied by, or that provide habitat for, one or more special-status species, or areas that contribute to the protection of ecologically, geographically, and/or genetically distinct populations or sub-populations of obligate aquatic special-status species.</p> <p>Sub-Objective AR-4.1.2: Enhance, rehabilitate, establish, and/or reestablish habitats for other aquatic species such as vernal pool crustaceans and plants, fish species included in Section 2.17.4, as well as species included in Appendix E that could benefit from aquatic habitat enhancement and/or restoration.</p> <p>Sub-Objective AR-4.1.3: Address additional RWQCB beneficial use designations, such as recreation (for example, bird watching) through enhancement, rehabilitation, establishment, and/or reestablishment actions.</p> <p>Sub-Objective AR-4.1.4: Align with LCP ESHA requirements to prioritize enhancement, rehabilitation, establishment, and/or reestablishment actions that provide a functional lift to the ESHA, when feasible.</p>	<ul style="list-style-type: none">▪ <i>Angeles National Forest Strategy</i> (USFS 2005a)▪ <i>City of Oxnard Coastal Land Use Plan</i> (City of Oxnard 2002)▪ <i>Final Integrated Natural Resources Management Plan Naval Weapons Station Seal Beach, California</i> (U.S. Navy 2014)▪ <i>Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, California</i> (U.S. Navy 2018)▪ <i>Hopper Mountain, Bitter Creek, and Blue Ridge National Wildlife Refuges Final Comprehensive Conservation Plan and Environmental Assessment</i> (FWS 2013c)▪ <i>Leo Carrillo State Park General Plan</i> (California State Parks 1996)▪ <i>Los Padres National Forest Strategy</i> (USFS 2005c)▪ <i>Recovery Plan for Vernal Pool Ecosystems of Southern California</i> (FWS 1998a)▪ <i>Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon</i> (FWS 2005)▪ <i>Upper Santa Clara River Integrated Regional Water Management Plan</i> (Regional Water Management Group 2014)▪ <i>Ventura River Watershed Management Plan</i> (Ventura River Watershed Council 2015)

The goals and objectives presented here are intended to support the watershed approach, as practiced by natural resource regulatory agencies. The watershed approach is an analytical process through which the Corps, EPA, State Water Boards, CCC, and RWQCBs make decisions that support the sustainability or improvement of aquatic resources, with the goal of maintaining and improving the quality and quantity of aquatic resource through strategic selection of compensatory mitigation sites. The Corps subscribes to a watershed approach for compensatory mitigation that uses the HUC-based classification system, a topographic watershed-based system, or littoral cell boundary, in the case of coastal and marine resources, depending on the size and location of a transportation or other project (Corps 2015). The State Water Board and RWQCBs generally subscribe to an approach for compensatory mitigation decisions that follows the Corps' watershed approach; however, the HU classification system may be used on a case-by-case basis (State Water Board 2019b). The goals, objectives, and sub-objectives presented in Table 8-5 reflect Caltrans' intention to develop advance mitigation project scopes for in-kind mitigation.

8.8 Summary

Caltrans anticipates that future SHOPP transportation projects may be conditioned by the Corps, State Water Board, RWQCB, CCC, and/or CDFW to address the pressures and stressors that threaten aquatic resources in the GAI. The pressures and stressors include:

- Habitat loss, fragmentation, and degradation;
- Invasive species;
- Altered hydrology, geomorphology, and water quality;
- Climate change, drought, and sea-level rise; and
- Wildfire risk.

Hence, Caltrans will seek to align advance mitigation scopes with conservation goals and objectives that address the identified pressures and stressors, thereby aligning advance mitigation efforts with regional conservation efforts. As noted in 33 CFR § 332.3, consolidating compensatory mitigation is generally ecologically preferable.

Regional conservation goals and objectives provide a framework for scoping mitigation credit establishment that would likely successfully offset future transportation project impacts on aquatic resources by creating functional lift or conservation benefit, and by mitigating the pressures and stressors on aquatic resources in the GAI. To summarize Table 8-5:

Goal AR-1 seeks to achieve no net loss of area, functions, values, and the condition of wetland and non-wetland water resources in the GAI. The primary objectives associated with this goal are to improve existing wetland and non-wetland water resources and create new ones. The sub-objectives were selected to address the following pressures and stressors: altered hydrology, geomorphology, and water quality; habitat loss, fragmentation, and degradation; invasive species; and wildfire risk.

Goal AR-2 seeks to restore and maintain the chemical, physical, and biological integrity of waters. The primary objectives associated with this goal are to protect and enhance water quality and restore and enhance surface water hydrology. The sub-objectives were selected to address the following pressures and stressors: altered hydrology, geomorphology, and water quality.

Goal AR-3 seeks to support climate resiliency for aquatic resources in the GAI. The primary objectives are to reduce impacts on aquatic resources from climate change and sea-level rise and to improve aquatic habitat climate resiliency. The sub-objectives were selected to address the following pressures and stressors: climate change, drought, and sea-level rise; invasive species; and wildfire risk.

Goal AR-4 seeks to guide advance mitigation project scoping to prioritize multi-resource benefits, with the only objective being to coordinate mitigation efforts for multi-resource benefits. The sub-objectives of Goal AR-4 describe what additional benefits exist for other resources in the GAI, including benefits to upland terrestrial habitat. Goal AR-4 was developed to include conservation for multiple resources while seeking to address in-kind transportation projects' effects on aquatic resources.

9. ASSESSMENT OF AUTHORIZED ACTIVITIES

Informed by this RAMNA and its reviewers' comments and feedback, Caltrans Districts will nominate advance mitigation projects to the Caltrans Director and request funding approval (see Step 4 in Figure 1-1; Figure 6-1; Caltrans 2019a). Each advance mitigation project nominated to the Director will consist of a scope, schedule, and cost for an SHC § 800.6(a)-authorized activity. With respect to scope, in this chapter, Caltrans analyzes the information presented previously to identify advance mitigation project scope options that have a high probability of successfully meeting the AMP's transportation project and environmental objectives. Understanding the regulatory framework, environmental setting, available opportunities to purchase credits, impact forecasts, transportation project schedule needs, and natural resource regulatory agency goals and objectives will assist Caltrans Districts with scoping of SHC § 800.6(a)-authorized activities to be considered further for potential funding by the AMA (see Step 4 of Figure 1-1 and Section 9.4).

Note that the analysis presented in this chapter is for advance mitigation project scoping purposes only. Transportation projects must still go through environmental and permitting processes and must demonstrate avoidance and minimization efforts prior to compensation.

9.1 Overview of Advance Mitigation Project Scope Development

Advance mitigation project scopes will provide enough information, at the appropriate level of detail, for the Caltrans Director to concur with funding. Appropriately, advance mitigation project scopes will address transportation project delivery acceleration and environmental objectives:

- To meet the AMP's objective of accelerating transportation project delivery, advance mitigation project scopes will be consistent with the AMP's founding legislation and the state's competitive bid requirements and will address transportation project schedule milestones and constraints.
- To meet the environmental objectives through transportation project mitigation, an advance mitigation project scope will be consistent with natural resource regulatory agency goals and objectives expressed in an approved regulatory instrument or interagency agreement and/or aligned with conservation goals and objectives identified in Chapter 7 or Chapter 8.

Summaries of transportation-related advance mitigation project scope requirements and conservation-related advance mitigation project scope goals and objectives are provided in Tables 9-1 and 9-2, respectively.

Table 9-1. Summary of Transportation-related Advance Mitigation Project Scope Requirements

Advance mitigation project scopes must:

Be an authorized activity in accordance with SHC § 800.6(a)

Benefit multiple transportation projects' delivery schedules

Deliver mitigation anticipated to be needed to fulfill the mitigation requirements of transportation improvements^a

Be consistent with natural resource regulatory agency goals and objectives

Yield mitigation in units and terms approved by natural resource regulatory agencies with the authority to condition transportation project permits with compensatory mitigation

Employ, as appropriate, existing applicable state and federal standards and instruments, mitigation-related agreements, advance mitigation project-specific agreements,^{b,c} and contracts with qualified third parties^d

Address overlapping mitigation requirements

Implement the state's competitive proposal and bidding processes^d

Strategically exercise the AMA

Manage the financial, technical, and strategic risks associated with Caltrans' investments

^a California Constitution, Article XIX, § 2, subdivision (a)

^b An advance mitigation project-specific interagency agreement is a general term to describe an agreement between natural resource regulatory agencies that attaches or binds advance mitigation requirements to a sponsor, qualified third party, or permittee; natural resource regulatory agencies agree that the action provides mitigation. Examples of advance mitigation project-specific interagency agreements include cooperative agreements, MCAs, or other interagency agreements. Advance mitigation project-specific interagency agreements are developed after a Caltrans advance mitigation project is funded.

^c The authority for Caltrans to enter into interagency agreements with public entities such as CDFW is under SHC § 114 and SHC § 130.

^d Procedures for Caltrans to enter in contracts with third parties are available at:
<http://ppmoe.dot.ca.gov/des/oe/contractor-info.html>.

Table 9-2. Summary of Conservation-related Advance Mitigation Project Scope Goals and Objectives

Advance mitigation project scopes will strive to:

Benefit multiple wildlife species and aquatic resources

Be consistent with existing regional conservation planning expressed in a natural resource regulatory agency strategic plan, conservation plan, HCP, NCCP, watershed plan, restoration plan, investment strategy, RCIS, BEI, in-lieu fee program instrument, land management plan, or other documented conservation effort

Benefit regional biodiversity

Contribute to landscape climate change resiliency

Contribute to landscape connectivity

Contribute to federal and/or California special-status species population recovery

Mitigate effects of stressors on wildlife species and aquatic resources

Restore and rehabilitate wildlife habitat and aquatic resources

9.2 Benefiting Transportation Project Needs Summary

The proximity of planned SHOPP and non-SHOPP STIP-eligible transportation projects to natural resources is shown in figures throughout this document. Estimated transportation project mitigation needs within the GAI for fiscal years 2019/20 to 2028/29 are presented in Chapter 5, and the timing of the needs is analyzed in Chapter 6. For the time interval under consideration, 2019/20 to 2028/29, Caltrans District 7 intends to prioritize purchasing or developing mitigation credits or values that address Road Repair and Accountability Act of 2017 (also known as Senate Bill 1) priorities that are planned for the middle and end of the planning period. Hence, given the expected timing of mitigation need, at this time (December of fiscal year 2021/22) mitigation that can be purchased or established by 2023/24 (within the next 2 years) could potentially address approximately:

- Southern California Coast Ecoregion within the GAI:
 - 1.6 acres of wetland, 4.3 acres of non-wetland waters, 2.4 acres of threatened and endangered fish habitat impacts, and 1.2 acres of riparian habitat, potentially contributing to the acceleration of 13, 35, 13, and 5 transportation projects, respectively
 - 8.2 acre of coastal California gnatcatcher habitat impacts, potentially contributing to the acceleration of 16 transportation projects
 - 82.0 acres of California red-legged frog habitat impacts, potentially contributing to the acceleration of 35 transportation projects
 - 1.2 acres of least Bells' vireo habitat impacts, potentially contributing to the acceleration of 6 transportation projects

- 99.9 acres of mountain lion habitat, potentially contributing to the acceleration of 23 transportation projects
- 1.3 acres of southwestern willow flycatcher habitat impacts, potentially contributing to the acceleration of 9 transportation projects
- Southern California Mountains and Valleys Ecoregion within the GAI:
 - 0.4 acres of wetland, 1.6 acres of non-wetland waters, 0.8 acre of threatened and endangered fish habitat, and 0.9 acres of riparian habitat impacts, potentially contributing to the acceleration of 7, 10, 6, and 4 transportation projects, respectively
 - 24.6 acre of coastal California gnatcatcher habitat impacts, potentially contributing to the acceleration of 16 transportation projects
 - 26.6 acres of California red-legged frog habitat impacts, potentially contributing to the acceleration of 17 transportation projects
 - 0.9 acres of least Bells' vireo habitat impacts, potentially contributing to the acceleration of 7 transportation projects
 - 27.8 acres of mountain lion habitat, potentially contributing to the acceleration of 18 transportation projects
 - 1.0 acres of southwestern willow flycatcher habitat impacts, potentially contributing to the acceleration of 6 transportation projects

All or some of these needs could form the basis for Caltrans District 7 to develop an advance mitigation project scope.

9.3 Authorized Activity Summary

Advance mitigation project scope options that have a high probability of successfully meeting the AMP's objectives are feasible. Below, a brief description of each of the 11 SHC § 800.6(a)-authorized advance mitigation project types is provided, followed by a discussion of its feasibility. Listed in Table 9-3, some advance mitigation project types are not currently feasible because they are not available in the GAI. Others are not currently feasible because a regulatory and administrative pathway is not available. Still others have potential but may be not be feasible to implement on a schedule to contribute to accelerated transportation project delivery. Further, the activity authorized by SHC § 800.6(a)(4) is only feasible if § 800.6(a)(1)–(3) options are not feasible. Results of the feasibility analysis are summarized in the subsections below and in Table 9-4 (wildlife resources) and Table 9-5 (aquatic resources) later in this chapter.

Table 9-3. Advance Mitigation Project Types^a

Advance Mitigation Project Type	Authorization	Section
Caltrans pays mitigation fees or other costs or payments associated with coverage of transportation projects under an approved NCCP ^b and/or an approved HCP.	SHC § 800.6(a)(2)	9.3.1
Caltrans purchases credits from an existing conservation bank.	SHC § 800.6(a)(1)	9.3.2
Caltrans purchases credits from an existing mitigation bank.	SHC § 800.6(a)(1)	9.3.3
Caltrans purchases credits from an existing in-lieu fee program.	SHC § 800.6(a)(1)	9.3.4
Caltrans purchases credits developed through an MCA, established under a CDFW-approved RCIS. ^c	SHC § 800.6(a)(3)(A)	9.3.5
Caltrans funds the establishment of a Caltrans or third-party sponsored and operated conservation bank, in accordance with applicable state and federal standards.	SHC § 800.6(a)(1)	9.3.6
Caltrans funds the establishment of a Caltrans or third-party sponsored and operated mitigation bank in accordance with applicable state and federal standards.	SHC § 800.6(a)(1)	9.3.7
Caltrans funds the establishment of a Caltrans or third-party sponsored and operated in-lieu fee program in accordance with applicable state and federal standards.	SHC § 800.6(a)(1)	9.3.8
Caltrans funds the implementation of conservation actions and habitat enhancement actions ^{c,d} to generate mitigation credits pursuant to an MCA ^b established under a CDFW-approved RCIS. ^c The scope may include Caltrans first entering into or funding the preparation of an MCA. ^c The scope may also include Caltrans first entering into or funding the preparation of an RCIS. ^c	SHC § 800.6(a)(3) SHC § 800.6(a)(3)(A)	9.3.9
Caltrans acquires, restores, manages, monitors, enhances, and preserves lands, waterways, aquatic resources, or fisheries, or funds the acquisition, restoration, management, monitoring, enhancement, and preservation ^e of lands, waterways, aquatic resources, or fisheries, that would measurably advance a conservation objective specified in an RCIS if the department concludes that the action or actions could conserve or create environmental values that are appropriate to mitigate the anticipated potential impacts of planned transportation improvements.	SHC § 800.6(a)(3)(B)	9.3.10
When the other mitigation options (above) are not practicable, Caltrans may perform mitigation in accordance with a programmatic mitigation plan ^f pursuant to SHC § 800.9. The programmatic mitigation plan shall include, to the maximum extent practicable, the information required for an RCIS. ^c	SHC § 800.6(a)(4) SHC § 800.9	9.3.11

^a Caltrans intends to contract or subcontract implementation tasks when appropriate and as required.

^b When Caltrans is a permittee under the NCCP, or if Caltrans qualifies as a Participating Special Entity and the project is a covered activity in the NCCP

^c See: <https://www.wildlife.ca.gov/Conservation/Planning/Regional-Conservation>

^d Under specific conditions, fish passage and wildlife crossing structures may qualify as enhancement actions under an RCIS in accordance with FGC § 1850–1861.

^e The State Water Boards do not typically approve establishment of or accept preservation credits.

^f Programmatic mitigation plans are defined in 23 USC § 169(a) (SHC § 800.9). No more than 25 percent of the funds in the AMA may be allocated for this purpose over a 4-year period [SHC § 800.6(a)(4)].

9.3.1. HCP and/or NCCP Fees

HCPs and NCCPs are discussed in Section 4.2. HCPs and NCCPs are species-focused and are aligned with and plan for natural resource protection. HCPs, including multiple species HCPs, and NCCPs provide for incidental take under CESA and ESA, respectively. FWS is the signatory agency to HCPs. CDFW is the signatory agency to NCCPs.

Caltrans identified two NCCP/HCPs and two multiple species HCPs with plan areas that overlap the GAI and that include transportation-related projects (Table 4-2, Figure 4-1). Caltrans is a permittee to two of these documents (Table 4-2).

Feasibility. HCPs are not authorized to accept bulk financial contributions; however, this authorized activity may be feasible for NCCPs and NCCP/HCPs. After the Caltrans Director's approval for funding, delivering an advance mitigation project to purchase credits or fees is expected to take 1 to 3 years,¹ at which point the credits or values would be available to transportation projects.

9.3.2. Conservation Bank Credit Purchase

Conservation banks are discussed in Section 4.3. Conservation banks are species-focused, and each bank's alignment with natural resource protection is documented through its BEI. In the GAI, CDFW is a signatory to six active and one pending conservation banks, an active one of which (with FWS) offers coastal California gnatcatcher credits (Table 4-3). FWS is a signatory to six active and one pending mitigation banks, three active ones of which offer coastal California gnatcatcher credits (Table 4-3). CDFW and FWS are cosignatories for four active and one pending conservation banks. The one pending conservation bank, of which both CDFW and FWS are signatories, offers Southern California ESU of mountain lion credits. No banks with service areas that overlap the GAI offer credits for California red-legged frog.

Conservation bank service areas are shown in Figures 4-4 through 4-8, and the anticipated transportation project impact forecast on species of mitigation need is presented by year in Figures 6-2 and 6-11. When placed side-by-side, it is possible to see that multiple transportation projects may need species of mitigation need credits and which bank's service areas might have them available by 2023/24, when the credits might contribute to transportation project acceleration.

Feasibility. This authorized activity may be feasible. Caltrans may be able to address some of its coastal California gnatcatcher mitigation need through pre-permit credits purchased from conservation banks in the GAI. After the Caltrans Director's approval for funding, delivering an advance mitigation project to purchase credits or fees is expected to take 1 to 3 years, at which point the credits or values would be available to transportation projects. The Caltrans District will need to approach each bank to confirm the availability of credits and bulk credit purchase terms. Bulk credits purchased through

¹ Caltrans contracting processes and agency interactions are incorporated into this time estimate.

an advance mitigation project might, with CDFW approval, be applied to meet future CDFW permit conditions on transportation projects. Since the coastal California gnatcatcher is a dually listed species, it is probable that compensatory mitigation will be incorporated into future ESA biological assessments/opinions in coordination with FWS. Pre-permit purchases must be authorized in the BEI for this authorized activity to be feasible. For existing banks, a BEI amendment would be required to formalize a process for bulk pre-permit credit purchases, which must be completed before undertaking this authorized activity. The decision to amend a BEI is at the discretion of the bank sponsor and additional Caltrans-specific terms would also need to be negotiated with bank sponsors.

9.3.3. Mitigation Bank Credit Purchase

Mitigation banks are discussed in Section 4.3. Mitigation banks are wetlands- and waters-focused, and each bank's alignment with natural resource protection is documented through its BEI. Twelve mitigation banks in the GAI provide wetland and/or non-wetland water credits, including four pending mitigation banks and one dual-purpose conservation/mitigation bank. The Corps is a signatory, or is anticipated to be a signatory, on all mitigation banks in the GAI (Table 4-3).

Feasibility. This authorized activity may be feasible. After the Caltrans Director's approval for funding, delivering an advance mitigation project to purchase credits or fees is expected to take 1 to 3 years, at which point the credits or values would be available to transportation projects. Pre-permit purchases must be authorized in the BEI for this authorized activity to be feasible. For existing banks, a BEI amendment would be required to formalize a process for bulk pre-permit credit purchases, which must be completed before undertaking this authorized activity. The decision to amend a BEI is at the discretion of the bank sponsor and additional Caltrans-specific terms would also need to be negotiated with bank sponsors.

9.3.4. In-lieu Fee Credit Purchase

In-lieu fee programs were discussed in Section 4.4.² In-lieu fee mitigation occurs when a permittee provides funds to an in-lieu fee sponsor instead of either completing project-specific mitigation or purchasing credits from a conservation or mitigation bank and offers permittees an in-lieu fee option to satisfy their compensatory mitigation obligations as determined by the applicable regulatory agencies for impacts on aquatic resources authorized under the CWA, the Rivers and Harbors Act, the ESA, the Porter-Cologne Water Quality Control Act, and other applicable laws. Once enough money is received by an in-lieu fee program, it implements wetland, stream, or threatened or endangered species habitat restoration, creation, enhancement, or preservation activities in a watershed or other defined area.³ The in-lieu fee program's alignment with natural

² Up-to-date information on approved in-lieu fee programs, including available credits, can be found at:

<https://ribits.ops.usace.army.mil/ords/f?p=107:47:13453394859366::NO>

³ https://www.fhwa.dot.gov/innovation/everydaycounts/edc-1/pdf/banking_faq.pdf

resource protection is documented through its enabling instrument and will be incorporated into future biological opinions on transportation projects.

There are four active and one pending in-lieu fee programs with service areas that overlap the GAI.

Feasibility. This authorized activity may be feasible. After the Caltrans Director's approval for funding, delivering an advance mitigation project to purchase credits or fees is expected to take 1 to 3 years, at which point the credits or values would be available to transportation projects. Pre-permit purchases must be authorized in the enabling instrument for this authorized activity to be feasible. Bulk credits purchased from an in-lieu fee program through an advance mitigation project might, with natural resource agency approval, be incorporated into future conditions on transportation projects on transportation projects.

9.3.5. MCA Credit Purchase

As discussed in Section 4.5, MCAs are an advance mitigation tool that can be developed when and where an RCIS is approved by CDFW. At this time (December of fiscal year 2021/22), instructions and guidance for establishing MCAs are currently under development by CDFW.⁴ In addition, although two are in progress, the required foundational RCISs underway in the GAI are not yet CDFW-approved.

Feasibility. At this time (December of fiscal year 2021/22), this authorized activity is not feasible because no MCA credits are available for purchase in the GAI.

9.3.6. Conservation Bank Establishment

Instructions and guidance for establishing conservation banks are available from CDFW⁵ and FWS.⁶ Conservation banks are species-focused, and each bank's alignment with natural resource protection will be documented through its BEI. CDFW, FWS, and NMFS are potential signatories, and there also may be circumstances where the Corps and/or State Water Board would participate.

To support future transportation project conditions, a conservation bank funded through the AMA would establish CESA and ESA credits. At a minimum, conservation bank establishment project scopes will refer to and rely on GAI information provided in:

- Chapter 2, *Environmental Setting*
- Chapter 3, *Relevant Plans, Policies, and Regulations*
- Chapter 7, *Wildlife Resources Conservation Goals and Objectives*
- Chapter 8, *Aquatic Resources Conservation Goals and Objectives*
- Appendix C, *Land Cover Types*
- Appendix E, *Complete SAMNA Species Results*

⁴ <https://wildlife.ca.gov/Conservation/Planning/Regional-Conservation>

⁵ <https://wildlife.ca.gov/Conservation/Planning/Banking/Templates>

⁶ https://www.fws.gov/endangered/esa-library/pdf/Conservation_Banking_Guidance.pdf

An understanding of CDFW and FWS goals and objectives for wildlife resources in the GAI will improve the chances that credits established through an advance mitigation project will meet the compensatory mitigation needs of Caltrans' future transportation projects. In Chapter 7, Caltrans analyzed and synthesized the relevant and applicable information listed in Chapter 3 to develop its understanding of natural resource regulatory agency goals and objectives for the GAI. In brief, it is Caltrans' understanding that a conservation bank that addresses the following goals would be consistent with CDFW and FWS goals:

- Conserve and expand existing habitat for species of mitigation need within the GAI (WILD-1).
- Preserve, enhance, and increase connectivity between blocks of species of mitigation need habitat (WILD-2).
- Support climate resiliency (WILD-3).
- Decrease mortality and protect population health for species of mitigation need (WILD-4).
- Prioritize multi-species and multi-resource benefits (WILD-5).

Further, for each objective, Table 7-3 presented sub-objectives, which are intended to help guide Caltrans advance mitigation project scoping toward protecting natural resources through transportation project mitigation.

Feasibility. This authorized activity may be feasible. As pointed out above, instructions and guidance for establishing conservation banks are available from CDFW and FWS. After the Caltrans Director's approval for funding, delivering an advance mitigation project to establish a conservation bank is expected to take 2 to 6 years before the initial credit release; the credits or values would be available to transportation projects according to the credit release schedule in the Interagency Review Team-approved BEI (CNRA et al. 2011). Caltrans may contract or subcontract bank establishment and/or implementation tasks, including site selection.

9.3.7. Mitigation Bank Establishment

Instructions and guidance for establishing mitigation banks are available from the Corps⁷ and CDFW.⁸ At a minimum, mitigation bank establishment project scopes will refer to and rely on GAI information provided in:

- Chapter 2, *Environmental Setting*
- Chapter 3, *Relevant Plans, Policies, and Regulations*
- Chapter 7, *Wildlife Resources Conservation Goals and Objectives*
- Chapter 8, *Aquatic Resources Conservation Goals and Objectives*
- Appendix F, *Hydrologic Units*
- Appendix H, *Aquatic Resource Locations*

⁷ https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/mitig_info/

⁸ <https://wildlife.ca.gov/Conservation/Planning/Banking/Templates>

To support future transportation project permits, Caltrans would seek wetland, non-wetland water, and other important aquatic feature credit establishment under the Corps' jurisdiction (wetlands and WOTUS) and RWQCB jurisdiction (waters of the state), as well as riparian credit establishment under CDFW's Lake and Streambed Alteration jurisdiction. Within the coastal zone, Caltrans would seek coastal wetland credit establishment in accordance CCC authorities.

Mitigation banks are wetland- and waters-focused, and each bank's alignment with natural resource protection is documented through its BEI. The CCC, Corps, RWQCB, FWS, CDFW, and NMFS are potential signatories. In some circumstances, CDFW's participation in a bank could be documented through an MCA.

An understanding of CCC, Corps, RWQCB, FWS, CDFW, and NMFS goals and objectives for aquatic resources in the GAI will improve the chances that credits established through an advance mitigation project will meet the compensatory mitigation needs of Caltrans' future transportation projects. In Chapter 8, Caltrans analyzed and synthesized the relevant and applicable information listed in Chapter 3 to develop its understanding of natural resource regulatory goals and objectives for the GAI. In brief, it is Caltrans' understanding that a mitigation bank that addresses the following goals would be consistent with natural resource regulatory agency goals:

- Ensure no net loss to area, functions, values, and condition of WOTUS⁸ and waters of the state to ensure no overall net loss and long-term net gain in the quantity, quality, and permanence of wetland acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property, as described in Executive Order W-59-93⁹ (AR-1).
- Restore and/or enhance the chemical, physical, and biological integrity of non-wetland waters (AR-2).
- Support resiliency of aquatic resources to climate change and sea-level rise (AR-3).
- Provide multi-resource benefits (AR-4).

Further, for each objective, Table 8-5 presented sub-objectives, which are intended to help guide Caltrans advance mitigation project scoping toward protecting natural resources through transportation project mitigation.

Feasibility. This authorized activity may be feasible. As discussed above, instructions and guidance for establishing mitigation banks are available from the Corps and CDFW and, hence, establishing credits is feasible. After the Caltrans Director's approval for funding, delivering an advance mitigation project to establish a mitigation bank is expected to take at least 2 to 6 years before the initial credit release, at which point the credits or values would be available to transportation projects. Caltrans may contract or subcontract bank establishment and/or implementation tasks, including site selection.

⁹ The State Water Boards do not typically approve establishment of or accept preservation credits.

9.3.8. In-lieu Fee Program Establishment

Each in-lieu fee program's alignment with natural resource protection is documented in its enabling instrument. Instructions and guidance for establishing in-lieu fee programs are available from the federal agencies.¹⁰ With respect to wildlife, like the Corps, FWS also follows federal guidance for establishing an in-lieu fee program; however, a supportive regulatory and administrative pathway for CDFW to develop an in-lieu fee program has not been developed.

To support future transportation project conditions, in-lieu fee program establishment projects would rely on the same information as mitigation bank establishment (Section 9.3.7). At a minimum, in-lieu fee establishment project scopes will refer to and rely on GAI information provided in:

- Chapter 2, *Environmental Setting*
- Chapter 3, *Relevant Plans, Policies, and Regulations*
- Chapter 7, *Wildlife Resources Conservation Goals and Objectives*
- Chapter 8, *Aquatic Resources Conservation Goals and Objectives*
- Appendix F, *Hydrologic Units*
- Appendix H, *Aquatic Resource Locations*

To support future transportation project permits, Caltrans would seek CWA credit establishment under the Corps' jurisdiction (WOTUS) and RWQCB jurisdiction (waters of the state). The Corps, EPA, CCC, State Water Board and/or RWQCB are potential signatories to the in-lieu fee program enabling instrument. Caltrans may also seek to establish credits that could be applied as compensatory mitigation to offset impacts as part of future ESA biological assessments/opinions in coordination with FWS and NMFS.

Feasibility. This authorized activity may be feasible. As pointed out above, instructions and guidance for establishing an in-lieu fee program for CWA credits are available from the federal agencies. After the Caltrans Director's approval for funding, delivering an advance mitigation project to establish an in-lieu fee program is expected to take 2 to 6 years. Credits or values would be available to transportation projects according to the Interagency Review Team-approved in-lieu fee enabling instrument. Caltrans may contract or subcontract implementation tasks.

9.3.9. MCA Credit or Value Establishment

As pointed out in Section 4.5, MCAs are an advance mitigation tool that can be developed when and where an RCIS is approved by CDFW. In accordance with the *Regional Conservation Investment Strategies Program Guidelines*, MCAs focus on species and species habitat, and can include credits for riparian habitat to meet mitigation needs under a Lake and Streambed Alteration Agreement. An MCAs' alignment with natural resource protection will be documented through the foundational RCIS and the MCA itself

¹⁰ <https://www.spl.usace.army.mil/Missions/Regulatory/Mitigation/>

(CDFW 2019c). RCIS development is also an SHC § 800.6(a)-authorized advance mitigation project deliverable.

Caltrans envisions that credits or values created through an MCA and funded through the AMA could be established under three scenarios:

- Caltrans enters into or funds the preparation of an MCA, where Caltrans is the MCA sponsor. Caltrans, CDFW, and a third-party landowner would likely be signatories to the MCA. This scenario assumes an existing RCIS anticipates the requirements and needs for MCA credits. In other words, the focal species, non-focal species, or other conservation elements of the associated conservation or habitat enhancement actions proposed in the MCA included in the RCIS would directly apply to and address Caltrans needs.
- Caltrans funds performance of conservation actions and habitat enhancement actions as needed to generate mitigation credits pursuant to an MCA, where a third party is the MCA sponsor. The MCA sponsor, CDFW, and the landowner would be signatories to the MCA. This scenario assumes an existing RCIS anticipates the requirements and needs for MCA credits to apply to transportation projects.
- Caltrans prepares or funds the preparation of an RCIS that anticipates transportation project requirements and needs for MCA credits before entering into or funding the preparation of an MCA itself.

To support future transportation project permits, an MCA or, if needed, an RCIS in concert with an MCA, funded through the AMA, would establish CESA and/or Lake and Streambed Alteration Program credits¹¹ and CDFW would be the signatory. Caltrans may also request other natural resource regulatory agencies to be signatories to the MCA, such as the CCC, or seek project-specific interagency agreements with other natural resource regulatory agencies whose jurisdiction overlaps with CDFW's. However, participation in an MCA may be more feasible for state agencies than federal agencies. Under federal definitions, MCAs may be treated as permittee-responsible mitigation. Federal agencies prioritize credits purchased or established through banking and in-lieu fee programs over permittee-responsible mitigation.

Feasibility. At this time (December of fiscal year 2021/22), instructions and guidance for establishing MCAs are under development by CDFW,¹² and the RCIS Program is conducting pilot efforts to inform the development of MCA Guidelines and associated agreements. Consequently, at this time, timelines and specifics related to the MCAs are uncertain and scoping and delivering an advance mitigation project within the AMP's timeline needs is unlikely. Caltrans will stay involved to understand how CDFW's pilots are going, but given the nature of the AMP's revolving account, Caltrans has determined that it cannot commit AMA funds to a pilot effort.

¹¹ Caltrans is the Lead Agency under CEQA; CDFW's permitting authority does not include conditioning transportation projects under CEQA (Section 7).

¹² <https://wildlife.ca.gov/Conservation/Planning/Regional-Conservation>

Nevertheless, in the future, Caltrans anticipates that when a CDFW-approved RCIS is in place¹³ and after the Caltrans Director's approval for funding, delivering an advance mitigation project to establish an MCA and its credits or values would take 4 to 9 years: 2 to 3 years to set up the MCA, followed by 2 to 6 years to perform a conservation action or habitat enhancement action¹⁴ to establish the credits or values. Credits would become available to Caltrans' SHOPP and STIP transportation projects according to the credit release schedule in the CDFW-approved MCA. Caltrans would include seeking signatures from natural resource regulatory agencies with overlapping jurisdictions and/or conducting parallel evaluations¹⁵ with the other agencies into the scope and schedule.

Wildlife Crossing and Aquatic Corridor Enhancements

As described in Section 4.5 and pointed out above, the RCIS and MCA framework provides CDFW with a compensatory mitigation mechanism to approve credits for wildlife crossing and aquatic corridor enhancements. In other words, through an MCA developed under an RCIS, CDFW would be authorized to recognize credits established through wildlife crossing and aquatic corridor enhancement made separate from and distinct from specific transportation projects. An MCA for connectivity would be consistent with Caltrans' understanding of natural resource regulatory agency goals and objectives to preserve, enhance, and increase connectivity between blocks of species of mitigation need habitat (WILD-2), support resiliency of the landscape and aquatic resources to climate change (WILD-3 and AR-3), and provide multi-resource benefits (WILD-5 and AR-4).

To support future transportation project permits, it would be necessary for a wildlife crossing or aquatic corridor improvement MCA funded through the AMA to establish CESA and/or Lake and Streambed Alteration Program credits. In addition to the uncertainty listed above related to MCA implementation and associated agreements, connectivity enhancements have additional uncertainty related to mitigation crediting framework and outputs (temporary versus permanent), cost feasibility, engineering, and delivery timelines. Caltrans will reassess wildlife crossing and aquatic corridor enhancements related to feasibility with respect to the AMA expenditures and mitigation needs covered in this RAMNA once the RCIS Program's MCA Guidelines for wildlife crossing and aquatic corridor enhancements are finalized.

9.3.10. Mitigation That Meets An RCIS Conservation Objective

SHC § 800.6(a)(3)(B) authorizes the following expenditure from the AMA:

Caltrans acquires, restores, manages, monitors, enhances, and preserves lands, waterways, aquatic resources, or fisheries, or funds the acquisition, restoration,

¹³ In accordance with SHC § 800.6(a)(3)(A), advance mitigation project scopes funded through the AMA may also include Caltrans first entering into or funding the preparation of an RCIS, which could add 2 to 3 years to the schedule.

¹⁴ <https://wildlife.ca.gov/Conservation/Planning/Regional-Conservation>

¹⁵ Parallel evaluations are undertaken when, for the same environmental enhancement/action, two or more agencies must employ different mechanisms to approve the credits.

management, monitoring, enhancement, and preservation¹⁶ of lands, waterways, aquatic resources, or fisheries that would measurably advance a conservation objective specified in an RCIS if the department concludes that the action or actions could conserve or create environmental values that are appropriate to mitigate the anticipated potential impacts of planned transportation improvements.

Feasibility. At this time (December of fiscal year 2021/22), this authorized activity is not feasible. A supportive regulatory and administrative pathway for a natural resource regulatory agency to recognize credits or values outside of existing advance mitigation mechanisms, such as the procedures to establish banks, does not exist. Without an existing regulatory pathway, the time to establish credits or values for this advance mitigation project type is uncertain. Consequently, at this time, scoping and delivering an advance mitigation project within the AMP's timeline needs through this authorized activity is unlikely. Given the nature of the AMP's revolving account, the AMP has determined that Caltrans cannot commit AMA funds to a pilot effort.

9.3.11. Mitigation in Accordance with a Programmatic Mitigation Plan

This project type may be undertaken by Caltrans if all of the other advance mitigation project types discussed above are not feasible [SHC § 800.6(a)(4)]. In brief, SHC § 800.6(a)(4) and SHC § 800.9 authorize the following expenditure from the AMA:

Caltrans performs mitigation in accordance with a programmatic mitigation plan pursuant to SHC §800.9. The programmatic mitigation plan shall include, to the maximum extent practicable, the information required for a RCIS.

This authorized activity would likely require an advance mitigation project-specific agreement, such as a cooperative agreement, and the time needed to establish credits or values for this advance mitigation project type is uncertain. In general, unless otherwise prescribed in regulation, in this case, an advance mitigation project-specific interagency agreement should include the agency's jurisdiction, resource type, resource value, protection level, service area, time frame, performance and compliance requirements, mitigation accounting procedures, funding, monitoring, and the advance mitigation project's closeout terms and conditions.

Feasibility. At this time (December of fiscal year 2021/22), a number of the authorized activities listed in Table 9-3 appear to be feasible (Tables 9-4 and 9-5). This suggests that addressing a Caltrans SAMNA-estimated need will not require another approach in accordance with SHC § 800.6(a)(4). At this time, management of the AMA does not need to consider limiting any advance mitigation project type to 25 percent of the fund.

9.3.12. Discussion

Caltrans modeled its compensatory mitigation needs in the GAI for fiscal years 2019/20 through 2028/29 (Chapter 5) and evaluated its needs in light of when transportation projects might need the mitigation (Chapter 6 and Section 9.2, above). Summarized in

¹⁶ The State Water Boards do not typically approve establishment of or accept preservation credits.

Tables 9-4 and 9-5, Caltrans identified a number of options for how to meet its mitigation needs. The authorized activities consist of options to purchase existing mitigation credits (Sections 9.3.1 to 9.3.5) or establish additional mitigation (Section 9.3.6 through 9.3.11).

Based on its evaluation, Caltrans found that, at this time (December of fiscal year 2021/22), a number of authorized activities appear to be feasible and, under several scenarios, advance mitigation project scopes could cover multiple resources and address overlapping natural resource regulatory agency jurisdictions. For example, coastal California gnatcatcher and WOTUS could be addressed within the same credit purchase or through establishing a single credit establishment project.

Further, credits purchased by the end of 2023/24 (within the next 2 years) have the potential to address the following within the GAI:

- **Aliso-San Onofre sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.0 acre of wetland impact and 0.4 acres of non-wetland waters impact have the potential to accelerate 1 transportation project.
- **Calleguas sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.9 acre of wetland impact and 0.8 acre of non-wetland waters impact have the potential to accelerate 4 transportation projects.
- **Cuyama sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of non-wetland waters impact have the potential to accelerate 1 transportation project.
- **Los Angeles sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.5 acres of non-wetland waters impact have the potential to accelerate 9 transportation projects.
- **Newport Bay sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.2 acre of non-wetland waters impact have the potential to accelerate 3 transportation projects.
- **San Antonio sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of non-wetland waters impact have the potential to accelerate 1 transportation project.
- **San Gabriel sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.4 acre of wetland impact and 0.5 acre of non-wetland waters impact have the potential to accelerate 4 transportation projects.
- **San Jacinto sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated <0.1 acre of wetland and 0.3 acre of non-wetland waters impact have the potential to accelerate 1 transportation project.
- **Santa Ana sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated <0.1 acre of wetland

and 0.2 acre of non-wetland waters impact have the potential to accelerate 6 transportation projects.

- **Santa Barbara Coastal sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of wetland and 0.7 acre of non-wetland waters impact have the potential to accelerate 5 transportation projects.
- **Santa Clara sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of wetland impact and 0.2 acre of non-wetland waters impact have the potential to accelerate 3 transportation projects.
- **Santa Maria sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of wetland impact and 0.6 acre of non-wetland waters impact have the potential to accelerate 3 transportation projects.
- **Santa Monica Bay sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.4 acre of wetland impact and 0.3 acre of non-wetland waters impact have the potential to accelerate 5 transportation projects.
- **Santa Ynez sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of wetland impact and 0.7 acre of non-wetland waters impact have the potential to accelerate 3 transportation projects.
- **Ventura sub-basin forecast wetland and non-wetland waters impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of wetland impact and 0.2 acre of non-wetland waters impact have the potential to accelerate 2 transportation projects
- **Calleguas sub-basin forecast threatened and endangered fish impacts.** Specifically, mitigation credits purchased for an anticipated 0.7 acre of threatened and endangered fish impacts have the potential to accelerate 1 transportation project.
- **Newport Bay sub-basin forecast threatened and endangered fish impacts.** Specifically, mitigation credits purchased for an anticipated <0.1 acre of threatened and endangered fish impacts have the potential to accelerate 1 transportation project.
- **San Antonio sub-basin forecast threatened and endangered fish impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of threatened and endangered fish impacts have the potential to accelerate 1 transportation project.
- **San Gabriel sub-basin forecast threatened and endangered fish impacts.** Specifically, mitigation credits purchased for an anticipated 0.6 acre of threatened and endangered fish impacts have the potential to accelerate 3 transportation projects.

- **Santa Ana sub-basin forecast threatened and endangered fish impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of threatened and endangered fish impacts have the potential to accelerate 2 transportation projects.
- **Santa Barbara Coastal sub-basin forecast threatened and endangered fish impacts.** Specifically, mitigation credits purchased for an anticipated 1.0 acre of threatened and endangered fish impacts have the potential to accelerate 5 transportation projects.
- **Santa Clara sub-basin forecast threatened and endangered fish impacts.** Specifically, mitigation credits purchased for an anticipated 0.4 acre of threatened and endangered fish impacts have the potential to accelerate 3 transportation projects.
- **Santa Monica Bay sub-basin forecast threatened and endangered fish impacts.** Specifically, mitigation credits purchased for an anticipated 0.2 acres of threatened and endangered fish impacts have the potential to accelerate 2 transportation projects.
- **Santa Ynez sub-basin forecast threatened and endangered fish impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of threatened and endangered fish impacts have the potential to accelerate 1 transportation project.
- **Ventura sub-basin forecast threatened and endangered fish impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of threatened and endangered fish impacts have the potential to accelerate 2 transportation projects.
- **San Jacinto sub-basin forecast riparian habitat impacts.** Specifically, mitigation credits purchased for an anticipated 0.3 acre of riparian habitat impacts have the potential to accelerate 1 transportation project.
- **Santa Ana sub-basin forecast riparian habitat impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of riparian habitat impacts have the potential to accelerate 2 transportation projects.
- **Santa Barbara Coastal sub-basin forecast riparian habitat impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of riparian habitat impacts have the potential to accelerate 1 transportation project.
- **Santa Clara sub-basin forecast riparian habitat impacts.** Specifically, mitigation credits purchased for an anticipated 0.5 acre of riparian habitat impacts have the potential to accelerate 2 transportation project.
- **Santa Monica Bay sub-basin forecast riparian habitat impacts.** Specifically, mitigation credits purchased for an anticipated <0.1 acre of riparian habitat impacts have the potential to accelerate 1 transportation project.
- **Santa Ynez sub-basin forecast riparian habitat impacts.** Specifically, mitigation credits purchased for an anticipated 1.0 acre of riparian habitat impacts have the potential to accelerate 2 transportation projects.

- **Ventura sub-basin forecast riparian habitat impacts.** Specifically, mitigation credits purchased for an anticipated 0.1 acre of riparian habitat impacts have the potential to accelerate 1 transportation project.
- **Southern California Coast and Southern California Mountains and Valleys ecoregion mitigation credits purchased for forecast coastal California gnatcatcher habitat impacts.** Specifically, mitigation credits purchased for an anticipated 32.8 acres of coastal California gnatcatcher impacts have the potential to accelerate 29 transportation projects.
- **Southern California Coast and Southern California Mountains and Valleys ecoregion mitigation credits purchased for forecast California red-legged frog habitat impacts.** Specifically, mitigation credits purchased for an anticipated 108.5 acres of California red-legged frog habitat impacts have the potential to accelerate 49 transportation projects.
- **Southern California Coast and Southern California Mountains and Valleys ecoregions mitigation credits purchased for forecast least Bell's vireo habitat impacts.** Specifically, mitigation credits purchased for an anticipated 2.1 acres of least Bells' vireo habitat impacts have the potential to accelerate 12 transportation projects.
- **Southern California Coast and Southern California Mountains and Valleys ecoregions mitigation credits purchased for forecast mountain lion habitat impacts.** Specifically, mitigation credits purchased for an anticipated 127.7 acres of mountain lion habitat impacts have the potential to accelerate 39 transportation projects.
- **Southern California Coast and Southern California Mountains and Valleys ecoregions mitigation credits purchased for forecast Southwestern willow flycatcher impacts.** Specifically, mitigation credits purchased for an anticipated 2.3 acres of southwestern willow flycatcher habitat impacts have the potential to accelerate 14 transportation projects.

Under some conditions, establishing new mitigation credits through existing mechanisms may also be possible.

Table 9-4. Wildlife Resources Credit Options and Feasibility, December 2021

Authorized Activity	Regulatory and Administrative Pathway Available	Available/Opportunity Exists in the GAI	Potential to Address Overlapping Jurisdictions	Time to Complete^a
Pay NCCP and/or HCP fees	Yes	Yes, two HCP/NCCPs and two multiple species HCP/NCCPs	Yes, CDFW and FWS	1 to 3 years
Purchase conservation bank credits	Yes, requires instrument amendment	Yes, three FWS or CDFW and FWS-approved banks in GAI with coastal California gnatcatcher credits and one pending bank in the GAI proposed to have Southern California ESU of mountain lion credits	Yes, CDFW and FWS for dually listed species	1 to 3 years
Purchase in-lieu fee credits	Yes	No	Yes, with FWS and NMFS	1 to 3 years
Purchase MCA credits	No	Not applicable	Not applicable	Not applicable
Establish conservation bank	Yes	Yes, with CDFW, FWS, and NMFS	Yes, with CDFW, FWS, NMFS, and CCC	2 to 6 years
Establish in-lieu fee program	Yes	Yes, with FWS and NMFS	Yes, with FWS and NMFS Potential to align with Corps in-lieu fee program.	2 to 6 years
Establish MCA credits or values ^b	Yes, in part; two RCISs in progress; MCA guidelines in progress	Maybe—MCA guidelines in progress	Maybe, CDFW, CCC, State Water Boards, FWS, NMFS Potential for parallel evaluations	Unknown (pilot underway)
Establish RCIS and MCA ^b	Yes, in part; RCIS guidelines available; MCA guidelines in progress	Maybe—RCIS guidelines available; MCA guidelines in progress	Maybe, CDFW, CCC, State Water Boards FWS, NMFS Potential for parallel evaluations	Unknown (pilot underway)

Authorized Activity	Regulatory and Administrative Pathway Available	Available/Opportunity Exists in the GAI	Potential to Address Overlapping Jurisdictions	Time to Complete ^a
Establish mitigation that meets an RCIS objective	No	Not available	Not available	Not available
Establish mitigation in accordance with a programmatic mitigation plan	No	Not available	Not available	Not available

^a Caltrans contracting processes and agency interactions are incorporated into this time estimate.

^b Either Caltrans or a third party would be the signatory with CDFW.

Table 9-5. Aquatic Resources Credit Options and Feasibility, December 2021

Authorized Activity	Regulatory and Administrative Pathway Available	Available/Opportunity Exists in the GAI	Potential to Address Overlapping Jurisdictions	Time to Complete ^a
Purchase mitigation bank credits	Yes, requires instrument amendment	Yes, eight established and four pending Corps banks	Yes, CCC, RWQCB, Corps, EPA, CDFW, FWS, and NMFS	1 to 3 years
Purchase in-lieu fee credits	Yes, requires instrument amendment	Yes, four active and one pending, in-lieu fee programs	Yes, Corps, RWQCB, and EPA	1 to 3 years
Purchase MCA credits	No	Not available	Not available	Not available
Establish mitigation bank	Yes	Yes, Corps, EPA, CDFW, FWS, NMFS, and CCC	Yes, CCC, RWQCB, Corps, EPA, CDFW, FWS, and NMFS	2 to 6 years
Establish in-lieu fee program	Yes	Yes, for Corps, EPA, FWS, NMFS, and CCC	Maybe, CCC, Corps, FWS, NMFS, EPA, and RWQCB	2 to 6 years
Establish MCA credits or values ^b	Yes, in part; two RCISs in progress; MCA guidelines in progress	Maybe—MCA guidelines in progress	Maybe CCC, RWQCB, and NMFS. Potential for parallel evaluation(s)	Unknown (pilot underway)
Establish RCIS and MCA ^b	Yes, in part; RCIS guidelines available; MCA guidelines in progress	Maybe—RCIS guidelines available; MCA guidelines in progress	Maybe CCC, RWQCB, and NMFS Potential for parallel evaluation(s)	Unknown (pilot underway)
Establish mitigation that meets an RCIS objective	No	Not available	Not available	Not available
Establish mitigation in accordance with a programmatic mitigation plan	No	Not available	Not available	Not available

^a Caltrans contracting processes and agency interactions are incorporated into this time estimate.

^b Either Caltrans or a third party would be the signatory with CDFW.

9.4 Next Steps

Caltrans is required to avoid and minimize any impacts on the environment where practicable, but some impacts are unavoidable. When this is the case, as determined by a natural resource regulatory agency, Caltrans may use compensatory mitigation to offset these unavoidable impacts on the environment. Compensatory mitigation involves the restoration, establishment, enhancement, and/or preservation of the environment, including wetlands, non-wetland waters, and threatened or endangered species and/or their habitats, including riparian habitat.

Caltrans Districts will consider all feasible options when developing advance mitigation project scopes. The feasibility of each authorized activity to meet the mitigation need depends on the availability of a regulatory and administrative pathway and other conditions summarized in Tables 9-4 and 9-5. Not included in the tables is an explicit comparison of other desired qualities, outcomes, or other factors of performing any particular authorized activity, which Caltrans Districts will also consider based on its localized knowledge of delivering mitigation in its region. As just one example, Caltrans may prioritize advance mitigation projects that reduce risk in implementation and long-term management by eliciting others to be bank or in-lieu fee sponsors.

As described in the introduction to this chapter, as well as Section 9.1, to inform the advance mitigation project scope, Caltrans Districts will use information within the RAMNA. Each scope will consider mitigation needs; the timing of mitigation needs; conservation data and plans; input from natural resource regulatory agencies, interested parties, and tribes; feasibility; timing; and other financial, strategic, and technical risks associated with transportation project delivery and conservation actions. Advance mitigation project scopes will also employ, as appropriate, existing applicable state and federal standards and instruments, mitigation-related agreements, advance mitigation project-specific agreements, and contracts with qualified third parties.

Caltrans Districts will submit a nominated advance mitigation project's scope, schedule, and budget to the Caltrans Director for approval. When the Director concurs and funding is approved, Caltrans Districts will commit to delivering the advance mitigation project within the scope, schedule, and budget communicated with nomination materials. At that point, Caltrans Districts will initiate project delivery (see Steps 6 through 10 in Figure 1-2; Caltrans 2021b). Advance mitigation project delivery includes stakeholder engagement, project alternative analysis, coordination with natural resource regulatory agencies with the authority to approve compensatory mitigation, contracting with third parties and/or credit sponsors, and developing an agency-approved instrument and/or one or more advance mitigation project-specific interagency agreement. In addition:

- Stakeholder engagement will be conducted in accordance with each advance mitigation project's communication plan and be consistent with the applicable and appropriate requirements of existing applicable state and federal standards and instruments.

- When required by the advance mitigation project type, site selection may be performed by Caltrans or under contract to Caltrans through a competitive bid process, and may include existing mitigation providers—for example, banks, NCCPs, MCAs, as well as the identification of new acquisitions. When a competitive bid process is used, sites are subject to what bid respondents put forward in their proposals. Site selection should be consistent with appropriate conservation goals and objectives identified in Chapters 7 and 8.
- When appropriate for the advance mitigation project type, it may be necessary to identify the steps required to meet the goal of satisfying overlapping jurisdictional mitigation requirements.
- Instruments and advance mitigation project-specific interagency agreements will specify the terms of use of the credits, including the service areas. Service areas will be defined based on feedback from the natural resource regulatory agencies. It is intended for the ecological units used for this RAMNA to lead to ecologically based advance mitigation project scopes and service areas; Caltrans uses HUC-8s to be consistent with the 2008 Mitigation Rule and ecoregions to be consistent with the SWAP.

As with all credits and values established through advance mitigation processes, the credits' suitability for application to a specific transportation project is determined in the future, on a case-by-case basis, when transportation project mitigation requirements are known.

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