ADVANCE MITIGATION PROGRAM

Six Northern Mojave Sub-basins and the Owens Lake Sub-basin within California Regional Advance Mitigation Needs Assessment

ADDENDUM 1

Version 1.0

Establishing Caltrans' Need for Advance Mitigation for Riparian Habitat Impacts for Caltrans District 9 and Surroundings, Forecast Fiscal Years 2023/24 to 2032/33

California Department of Transportation – District 9

July 2026

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LIST OF ACRONYMS

Acronym	Definition
ACE	Areas of Conservation Emphasis
AMP	Advance Mitigation Program
BEI	Bank Enabling Instrument
BLM	Bureau of Land Management
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEHC	California Essential Habitat Connectivity
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
Corps	U.S. Army Corps of Engineers
EPA	U.S. Environmental Protection Agency
FESA	Federal Endangered Species Act
FGC	California Fish and Game Code
FWS	U.S. Fish and Wildlife Service
GAI	geographic area of interest
GIS	geographic information system
HCP	habitat conservation plan
MCA	mitigation credit agreement
NCCP	natural community conservation plan
NHDPlus	National Hydrology Dataset Plus
NMFS	National Marine Fisheries Service
NSNF	Northern Sierra Nevada Foothills
PAD	Passage Assessment Database
RAMNA	Regional Advance Mitigation Needs Assessment
RCIS	regional conservation investment strategy
RipZET	Riparian Zone Estimation Tool
RWQCB	Regional Water Quality Control Board
SAMNA	Statewide Advance Mitigation Needs Assessment
SFEI	San Francisco Estuary Institute
SHC	Streets and Highways Code
SHOPP	State Highway Operation and Protection Program
SHOPP Ten-Year Book	*State Highway Operation & Protection Program Ten-Year Project Book*

SHS	State Highway System
STIP	State Transportation Improvement Program
SWRCB	State Water Resources Control Board
USFS	U.S. Forest Service
USGS	U.S. Geological Survey

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1. INTRODUCTION

This Addendum forms a part of the *Six Northern Mojave Sub-basins and the Owens Lake Sub-basin in California Regional Advance Mitigation Needs Assessment* ("RAMNA") undertaken by the California Department of Transportation ("Caltrans") District 9 (Caltrans 2022). This Addendum helps to implement the RAMNA by providing more detailed information on the need for riparian habitat compensatory mitigation[1] in the geographic area of interest ("GAI")[2] over a 10-year planning horizon (Figure 1-1).

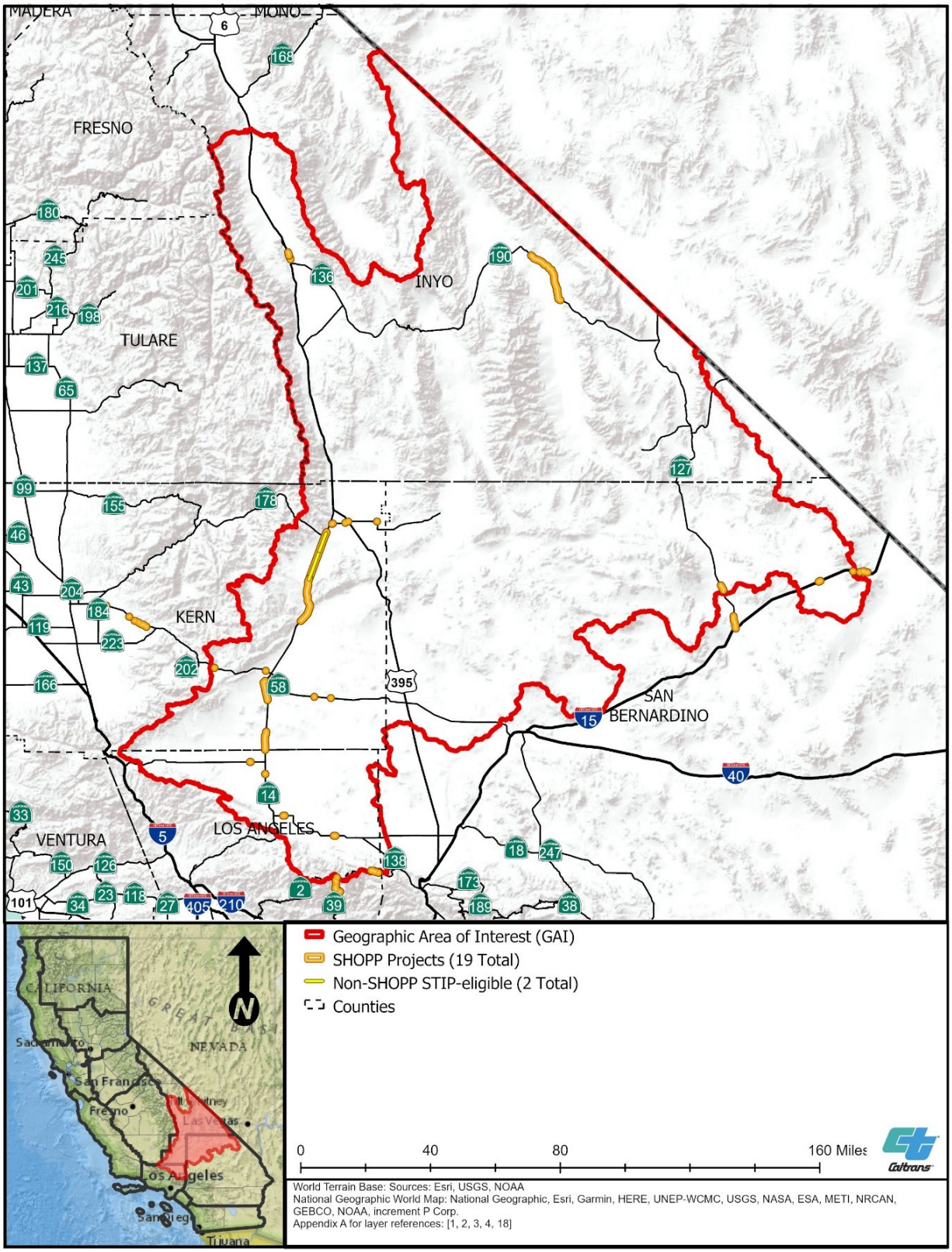
This Addendum has five attachments providing key additional and/or updated information for the RAMNA:

- Attachment A consists of the geographic information system ("GIS") data sources used for the RAMNA, adding those introduced in this Addendum.
- Attachment B lists the transportation projects that informed this specific Addendum. The transportation project list was taken from the *State Highway Operation & Protection Program Ten-Year Project Book 2023/24–2032/33*, Quarter 1 ("SHOPP Ten-Year Book"; Caltrans 2023a). Like the list in the original RAMNA, which was up to date at that time, the transportation projects in the SHOPP Ten-Year Book have not undergone the environmental and permitting process.
- Attachment C consists of the RAMNA figures from Chapter 2, *Environmental Setting*, updated to show the location of the planned transportation projects listed in Attachment B, rather than the transportation projects referenced in the original RAMNA.
- Attachment D consists of new and updated RAMNA sections or subsections that incorporate the new statewide riparian landcover dataset (Caltrans 2023b) developed for Caltrans by the San Francisco Estuary Institute ("SFEI") using its Riparian Zone Estimation Tool ("RipZET") vegetation model (SFEI 2015a, 2015b).
- Attachment E consists of the RAMNA's Chapter 4, *Existing Opportunities*, updated to include any new opportunities that were established since the original document was published.

[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] The GAI consists of the Antelope-Fremont Valleys, Coyote-Cuddeback Lakes, Death Valley-Lower Amargosa, Indian Wells-Searles Valleys, Panamint Valley, Upper Amargosa, and Owens Lake sub-basins.

Figure 1-1. GAI Road Infrastructure



When possible, the attachments' letter assignments are consistent with the original RAMNA. The bulk of the new analysis is provided in Attachment D, *Riparian Habitat Advance Mitigation Needs Assessment*, and Attachment E, *Existing Mitigation Opportunities*. Collectively, the new sections, subsections, and attachments in this Addendum are tools to guide advance mitigation project investments by Caltrans' Advance Mitigation Program ("AMP") and Caltrans District 9.

1.1 Coordination History

In December 2024, Caltrans distributed this RAMNA Addendum for review by natural resource regulatory agency partners 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). Table 1-1 lists the commenters and the date of their communication. All comments received were considered, addressed, and incorporated into the document, as appropriate.

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

Commenter	Date of Comment Letter
California Department of Fish and Wildlife ("CDFW")[a]	February 3, 2025
State Water Resources Control Board ("SWRCB")	January 30, 2025
U.S. Army Corps of Engineers ("Corps"), South Pacific Division, Los Angeles District	February 4, 2025
U.S. Fish and Wildlife Service ("FWS"), Carlsbad Field Office	January 8, 2025

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

1.2 Document Organization

This document has five attachments, some of which update an appendix provided with the 2022 RAMNA. Table 1-2 lists the attachments.

Table 1-2. Document Attachments

Document Component	Content
Attachments	Attachment A – GIS Sources
	Attachment B – Transportation Projects Planned for the GAI for Fiscal Years 2023/24 to 2032/33
	Attachment C – Environmental Setting Figures
	Attachment D – Riparian Habitat Advance Mitigation Needs Assessment
	Attachment E – Existing Mitigation Opportunities

1.3 References

Caltrans (California Department of Transportation). 2022. *Six Northern Mojave Sub-basins and the Owens Lake Sub-basin within California Regional Advance Mitigation Needs Assessment.* Version 1.0. March. https://dot.ca.gov/programs/environmental-analysis/biology/advancemitigation.

———. 2023a. *State Highway Operation & Protection Program Ten-Year Project Book 2023/24–2032/33.* Quarter 1, Fiscal Year 2023/24. October. Sacramento, California.

———. 2023b. Statewide Riparian Landcover Dataset. SFEI Caltrans Task 4.0 – Add Special Aquatic Features: RipZET QA/QC Report. December. Funded through Contract 43A099. Richmond, California.

Caltrans (California Department of Transportation), CDFW (California Department of Fish and Wildlife), SWRCB (State Water Resources Control Board), Corps (U.S. Army Corps of Engineers Los Angeles District, Sacramento District, and San Francisco District), EPA (U.S. Environmental Protection Agency), FWS (U.S. Fish and Wildlife Service), NMFS (National Marine Fisheries Service), and California State Coastal Commission. 2020. *Master Process Agreement for Planning and Developing Advance Mitigation throughout California for the California Department of Transportation Advance Mitigation Program*. Signed January 24.

SFEI (San Francisco Estuary Institute). 2015a. RipZET: The Riparian Zone Estimation Tool. Prepared by the San Francisco Estuary Institute - Wetlands Focus Area. Funded by Proposition 50 Watershed Protection Program Grant. Agreement Number: #10-429-550. Contribution #746. Richmond, California. Accessed September 13, 2024. https://www.sfei.org/sites/default/files/biblio_files/746_RipZET_Factsheet_v3_0.pdf.

———. 2015b. RipZET: User's Manual. Prepared by the San Francisco Estuary Institute – Wetlands Focus Area. Funded by Proposition 50 Watershed Protection Program Grant. Agreement Number: #10-429-550. Contribution #747. Richmond, California. https://www.sfei.org/sites/default/files/biblio_files/RipZET_User_Manual.pdf.

ATTACHMENT A: GIS SOURCES

The RAMNA and this Addendum rely on GIS datasets and maps to convey information. Datasets are cited throughout the document. At the bottom of each map figure is a citation that lists the GIS source identification numbers. These source identification numbers refer to Table A-1, where the metadata documentation is provided. When available, the source date and/or website address to access the data layer online are also provided.

Table A-1. District 9 RAMNA Addendum GIS Sources

ID	GIS Layer	Source	Source Date	Download Date	Website
1	State Highway Network	Caltrans	8/1/2018	10/11/2018	https://gisdata-caltrans.opendata.arcgis.com/datasets/77f2d7ba94e040a78bfbe36feb6279da_0/explore?location=37.274887%2C-119.281578%2C6
2	SHOPP	Caltrans	2023/2024 Q1	6/28/2024	Caltrans System Planning
3	STIP	California Transportation Commission	2023/2024 Q1	Not available	Caltrans System Planning
4	Watershed Boundary Section (GAI)	U.S. Geological Survey (“USGS”)	9/26/2014	10/19/2018	https://www.usgs.gov/core-science-systems/ngp/national-hydrography
5	Ecological Subsections and Sections	U.S. Forest Service	5/1/2017	10/17/2018	https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=Ecomap
6	Calfish Passage Assessment Database (“PAD”)	Calfish	10/3/2019	12/15/2019	https://map.dfg.ca.gov/metadata/ds0069.html?5.84.18vo
7	Areas of Conservation Emphasis (“ACE”) Climate Resilience – ACE [ds2738]	CDFW	2/22/2018	10/17/2018	https://map.dfg.ca.gov/metadata/ds2738.html?5.66.18
8	California Essential Habitat Connectivity (“CEHC”)	CDFW	10/1/2017	10/17/2018	Layer is a merge of Essential Connectivity Areas and Landscape Blocks
9	Essential Connectivity Areas – CEHC	CDFW	1/1/2014	10/17/2018	https://map.dfg.ca.gov/metadata/ds0620.html?5.66.18
10	Natural Landscape Blocks – CEHC	CDFW	10/1/2017	10/17/2018	https://map.dfg.ca.gov/metadata/ds0621.html?5.66.18
11	Potential Riparian Connections – CEHC	CDFW	3/1/2010	10/17/2018	https://map.dfg.ca.gov/metadata/ds0622.html?5.66.18
12	SWAP Terrestrial Targets – 2015	CDFW	2/1/2018	10/29/2018	https://map.dfg.ca.gov/metadata/ds1966.html?5.66.18

ID	GIS Layer	Source	Source Date	Download Date	Website
13	CalWater Hydrologic Areas	California Department of Forestry and Fire Protection	11/1/2016	10/19/2018	https://frap.fire.ca.gov/mapping/gis-data/
14	California Conservation Easements	California Protected Areas Database	6/1/2024	7/24/2024	http://www.calands.org/cced
15	California Protected Areas Holdings	California Protected Areas Database	6/1/2024	7/24/2024	https://calands.org/cpad/
16	Tribal Land Boundaries	Bureau of Indian Affairs	5/16/2017	10/11/2018	https://onemap-bia-geospatial.hub.arcgis.com/search?categories=%252Fcategories%252Ftribal%2520land
17	U.S. Military Installations	U.S. Census Bureau	11/22/2023	1/12/2024	https://www2.census.gov/geo/tiger/TIGER2023/MIL/
18	County Boundaries	U.S. Census Bureau	7/8/2016	10/11/2018	https://data.ca.gov/dataset/ca-geographic-boundaries
19	Farmland Mapping & Monitoring Program	California Department of Conservation	9/22/2023	1/12/2024	https://gis.conservation.ca.gov/portal/home/group.html?id=b1494c705cb34d01acf78f4927a75b8f#overview
20	USFWS Critical Habitat	FWS	10/1/2018	3/24/2021	https://ecos.fws.gov/ecp/report/table/critical-habitat.html
21	Regulatory In-lieu Fee & Bank Information Tracking System	Corps	Not available	Not available	https://ribits.ops.usace.army.mil/ords/f?p=107:2::::::
22	CDFW Approved Mitigation Service Areas	CDFW	2/6/2024	2/8/2024	https://map.dfg.ca.gov/metadata/ds2782.html?5.76.22
23	Northern Sierra Nevada Foothills (“NSNF”) wildlife connectivity project	CDFW	6/20/2014	3/24/2021	https://map.dfg.ca.gov/metadata/ds1004.html?5.94.01

ID	GIS Layer	Source	Source Date	Download Date	Website
24	Conservation Plan Boundaries, Habitat Conservation Plan (“HCP”) and Natural Community Conservation Plan (“NCCP”)	CDFW	7/29/2015	9/1/2023	https://map.dfg.ca.gov/metadata/ds0760.html?5.80.28l
25	Vegetation D06/D07/D08/D09 in Caltrans District 9 Geospatial Data for the Advance Mitigation Needs Assessment	Statewide Advance Mitigation Needs Assessment (“SAMNA”)	1/1/2017	3/24/2021	https://dot.ca.gov/programs/environmental-analysis/biology/advancemitigation
26	Waters and Wetlands D06/D07/D08/D09 in Caltrans District 9 Geospatial Data for the Advance Mitigation Needs Assessment	SAMNA	1/1/2017	3/24/2021	https://dot.ca.gov/programs/environmental-analysis/biology/advancemitigation
27	National Flood Hazard Layer	Federal Emergency Management Agency	6/29/2018	9/25/2019	https://www.fema.gov/national-flood-hazard-layer-nfhl
28	Regional Conservation Investment Strategy (“RCIS”) Draft Boundaries	CDFW	9/13/2023	9/13/2023	Requested on 9/13/2023, source date is 9/13/2023
29	Terrestrial Connectivity – ACE [ds2734]	CDFW	8/28/2019	9/25/2019	https://map.dfg.ca.gov/metadata/ds2734.html?5.80.28l
30	Terrestrial Biodiversity Summary – ACE [ds2739]	CDFW	2/24/2020	7/3/2019	https://map.dfg.ca.gov/metadata/ds2739.html?5.80.28l
31	Aquatic Biodiversity Summary – ACE [ds2768]	CDFW	2/22/2018	7/3/2019	https://map.dfg.ca.gov/metadata/ds2768.html?5.80.28l
32	National Hydrology Dataset Plus (“NHDPlus”)	U.S. Environmental Protection Agency	3/13/2019	4/29/2021	https://www.epa.gov/waterdata/get-nhdplus-national-hydrography-dataset-plus-data
33	303(d) List of Impaired Waterbodies	SWRCB	2014–2016	4/7/2020	https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

ID	GIS Layer	Source	Source Date	Download Date	Website
34	ZIP Codes	U.S. Postal Service	2/11/2020	3/11/2020	https://www.arcgis.com/home/item.html?id=8d2012a2016e484dafaac0451f9aea24
35	Vernal Pools – ACE [ds2732]	CDFW	2/13/2020	1/29/2021	https://map.dfg.ca.gov/metadata/ds2732.html?5.94.01
36	National Wild and Scenic Rivers	National Wild and Scenic Rivers System	3/2/2016	8/4/2021	https://www.rivers.gov/mapping-gis.php
37	Landscape Blocks for the California Desert Linkage Network [ds823]	Bureau of Land Management ("BLM") and The Wildlands Conservancy	3/2/2014	3/11/2022	https://map.dfg.ca.gov/metadata/ds0823.html?5.66.18
38	Linkage Design for the California Desert Linkage Network [ds822]	BLM and The Wildlands Conservancy	3/2/2014	3/11/2022	https://map.dfg.ca.gov/metadata/ds0822.html?5.108.39
39	RipZET[a]	SFEI	8/1/2024	8/5/2024	https://www.sfei.org/projects/ripzet

[a] Data source was used for this RAMNA but is not shown in maps.

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ATTACHMENT B: TRANSPORTATION PROJECTS PLANNED FOR THE GAI FOR FISCAL YEARS 2023/24 TO 2032/33

To identify the list of SHOPP projects planned for the GAI, and to ensure riparian habitat impact forecasts are as up-to-date as possible, Caltrans consulted Quarter 1 of the SHOPP Ten-Year Book for fiscal years 2023/24 to 2032/33 (Caltrans 2023). 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 19 SHOPP transportation projects in the GAI that are currently in the planning and conceptual phases (Table B-1). Of these transportation projects, the majority are forecast to potentially affect special-status species habitat and/or aquatic resources (Caltrans 2023). The general locations of all 19 planned transportation projects are shown on the environmental setting and other figures provided in Attachment C. Table B-2 shows the two State Transportation Improvement Program ("STIP")-eligible projects in the GAI, which are also shown in the figures.

References

Caltrans. 2023. *State Highway Operation & Protection Program Ten-Year Project Book 2023/24–2032-33.* Quarter 1, Fiscal Year 2023/24. October. Sacramento, California.

Table B-1. SHOPP Transportation Projects Planned in the GAI during the Planning Period

ID Number	HUC-8	Ecoregion Section	Advertised Year	Caltrans District[a]	County	Route[b]	Begin Mile[b]	End Mile[b]	Activity
20354	Death Valley-Lower Amargosa	Mojave Desert	2029/30	9	Inyo	190	96.8	111.6	Pavement
19023	Owens Lake	Mojave Desert	2023/24	9	Inyo	395	56.81	R58.299	Mobility – Americans with Disabilities Act
21136	Owens Lake	Mojave Desert	2025/26	9	Inyo	395	57.9	R59.03	Pavement
19004	Antelope-Fremont Valleys	Mojave Desert	2026/27	9	Kern	14	R12.6	16.7	Pavement
21677	Antelope-Fremont Valleys	Mojave Desert	2027/28	7	Kern	14	R0	R4.7	Pavement
21677	Antelope-Fremont Valleys	Mojave Desert	2027/28	9	Kern	14	R0	R4.7	Pavement
22794	Antelope-Fremont Valleys	Mojave Desert	2030/31	9	Kern	58	R107.7	R118.0	Pavement
24603	Antelope-Fremont Valleys	Mojave Desert	2030/31	9	Kern	58	1.244	R129.584	Drainage
24661	Antelope-Fremont Valleys	Mojave Desert	2032/33	9	Kern	14	34.5	46.2	Pavement
20351	Indian Wells-Searles Valleys	Mojave Desert	2029/30	9	Kern	178	92	R93.4	Pavement

ID Number	HUC-8	Ecoregion Section	Advertised Year	Caltrans District[a]	County	Route[b]	Begin Mile[b]	End Mile[b]	Activity
22927	Indian Wells-Searles Valleys	Mojave Desert	2028/29	9	Kern	14	46.2	58.6	Proactive safety
23933	Indian Wells-Searles Valleys	Mojave Desert	2026/27	9	Kern	178	88.6	92	Pavement
24661	Indian Wells-Searles Valleys	Mojave Desert	2032/33	9	Kern	14	34.5	46.2	Pavement
24603	Antelope-Fremont Valleys	Sierra Nevada	2030/31	9	Kern	58	1.244	R129.584	Drainage
18445	Antelope-Fremont Valleys	Mojave Desert	2027/28	7	Los Angeles	138	43.418	46.7	Pavement
21504	Antelope-Fremont Valleys	Mojave Desert	2023/24	7	Los Angeles	138	33	33.2	Reactive safety
21677	Antelope-Fremont Valleys	Mojave Desert	2027/28	7	Los Angeles	14	R0	R4.7	Pavement
21944	Antelope-Fremont Valleys	Mojave Desert	2025/26	7	Los Angeles	14	R70.99	R70.99	Bridge
22004	Antelope-Fremont Valleys	Mojave Desert	2031/32	7	Los Angeles	138	62	62.5	Mobility – weigh-in-motion scales and commercial vehicle enforcement facilities

ID Number	HUC-8	Ecoregion Section	Advertised Year	Caltrans District[a]	County	Route[b]	Begin Mile[b]	End Mile[b]	Activity
22326	Antelope-Fremont Valleys	Southern California Mountains and Valleys	2031/32	7	Los Angeles	2	79.3	81.5	Drainage
16963	Death Valley-Lower Amargosa	Mojave Desert	2025/26	8	San Bernardino	127	L0.0	3	Pavement
19175	Death Valley-Lower Amargosa	Mojave Desert	2023/24	8	San Bernardino	15	160.9	161.5	Roadside
20072	Death Valley-Lower Amargosa	Mojave Desert	2031/32	8	San Bernardino	15	170.0R	177	Pavement

Source: Caltrans 2023
[a] Note that although the GAI overlaps Caltrans Districts 6, 7, 8, and 9, no transportation projects are planned for where the GAI overlaps District 6.
[b] Routes and begin and end postmiles are representative of the project and are not necessarily associated with the county, ecoregion, or HUC-8 specified in the table row. R prefix = right, L prefix = left (Postmile with "R" suffix code indicates realignment of original postmile.)

Table B-2. STIP-eligible Transportation Projects Planned within the GAI

Sub-basin (HUC-8)	Ready to List	Project ID	EA #	County	Route	Begin Mile	End Mile	Ecoregion Section	Activity
Indian Wells-Searles Valley	N/A	N/A	06-45712	Kern	14	52.6	58.3	Mojave Desert	Freeman Gulch Widening Segment 2; convert existing 2-lane highway to 4-lane expressway
Indian Wells-Searles Valley	N/A	N/A	06-45713	Kern	14	45.9	52.9	Mojave Desert	Freeman Gulch Widening Segment 3; convert existing 2-lane highway to 4-lane expressway

Notes: EA = expenditure authorization; N/A = not applicable/available

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ATTACHMENT C: ENVIRONMENTAL SETTING FIGURES

This attachment provides the figures presented in Chapter 2, *Environmental Setting*, of Caltrans 2022, updated to show the location of the transportation projects listed in Attachment B *Transportation Projects Planned for the GAI for Fiscal Years 2023/24 to 2032/33*. Information sources are described more fully in Caltrans 2022.

References

Caltrans 2022. *Six Northern Mojave Sub-basins and the Owens Lake Sub-basin in California Regional Advance Mitigation Needs Assessment.* Version 1.0. March. Sacramento, California.

Figure C-1. Ecoregion Sections (RAMNA Figure 2-1)

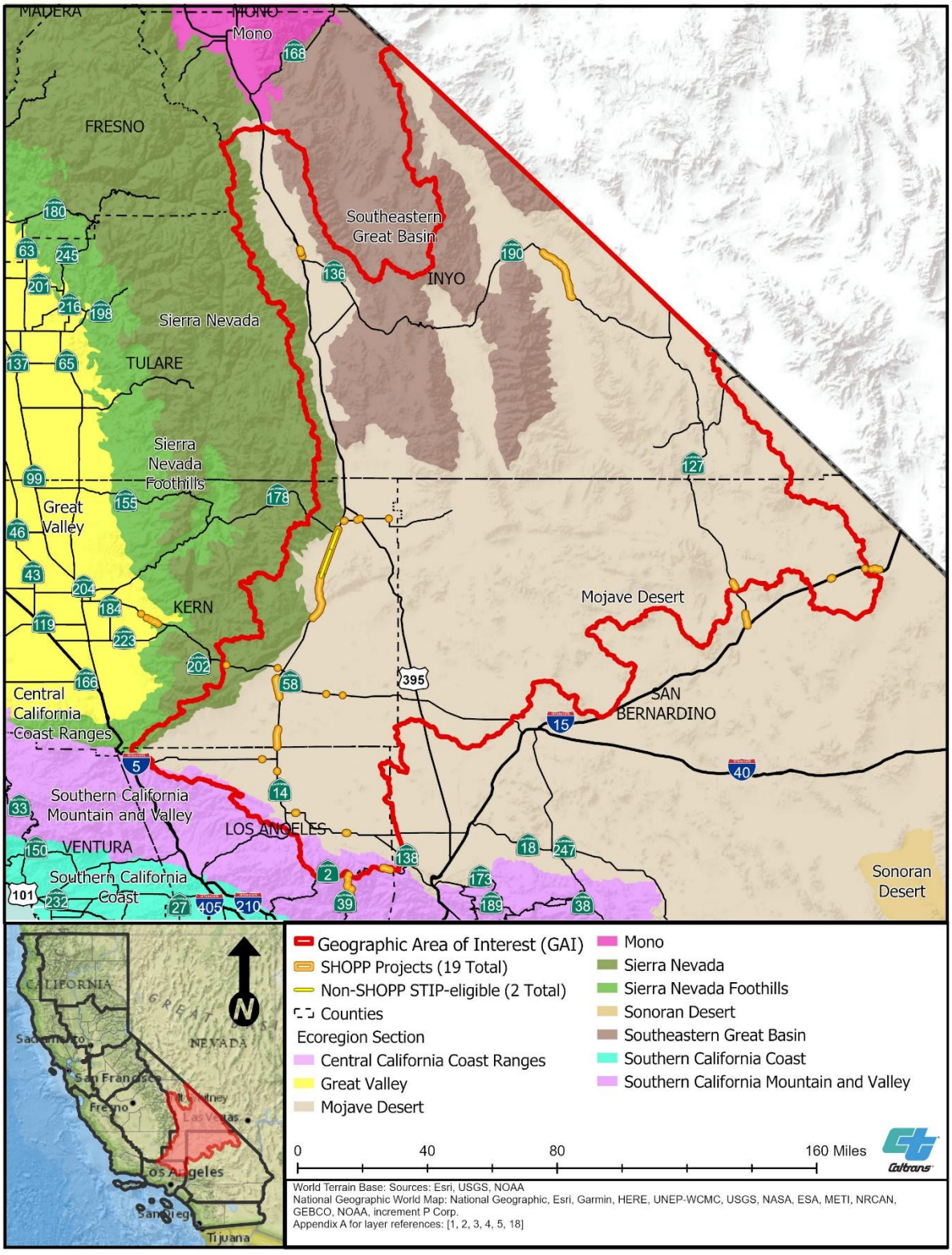


Figure C-2. Land Ownership (RAMNA Figure 2-2)

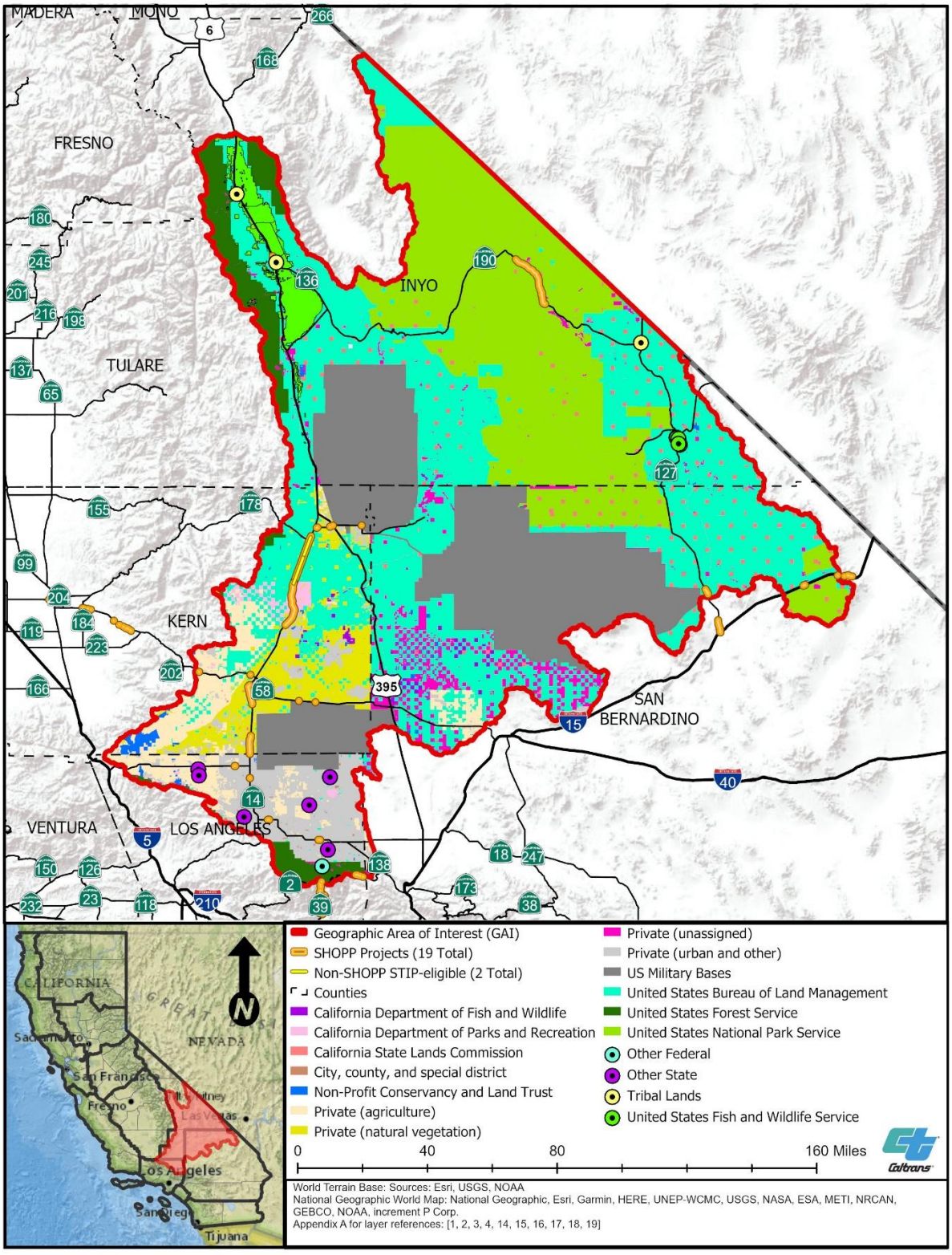


Figure C-3. Protected Lands (RAMNA Figure 2-3)

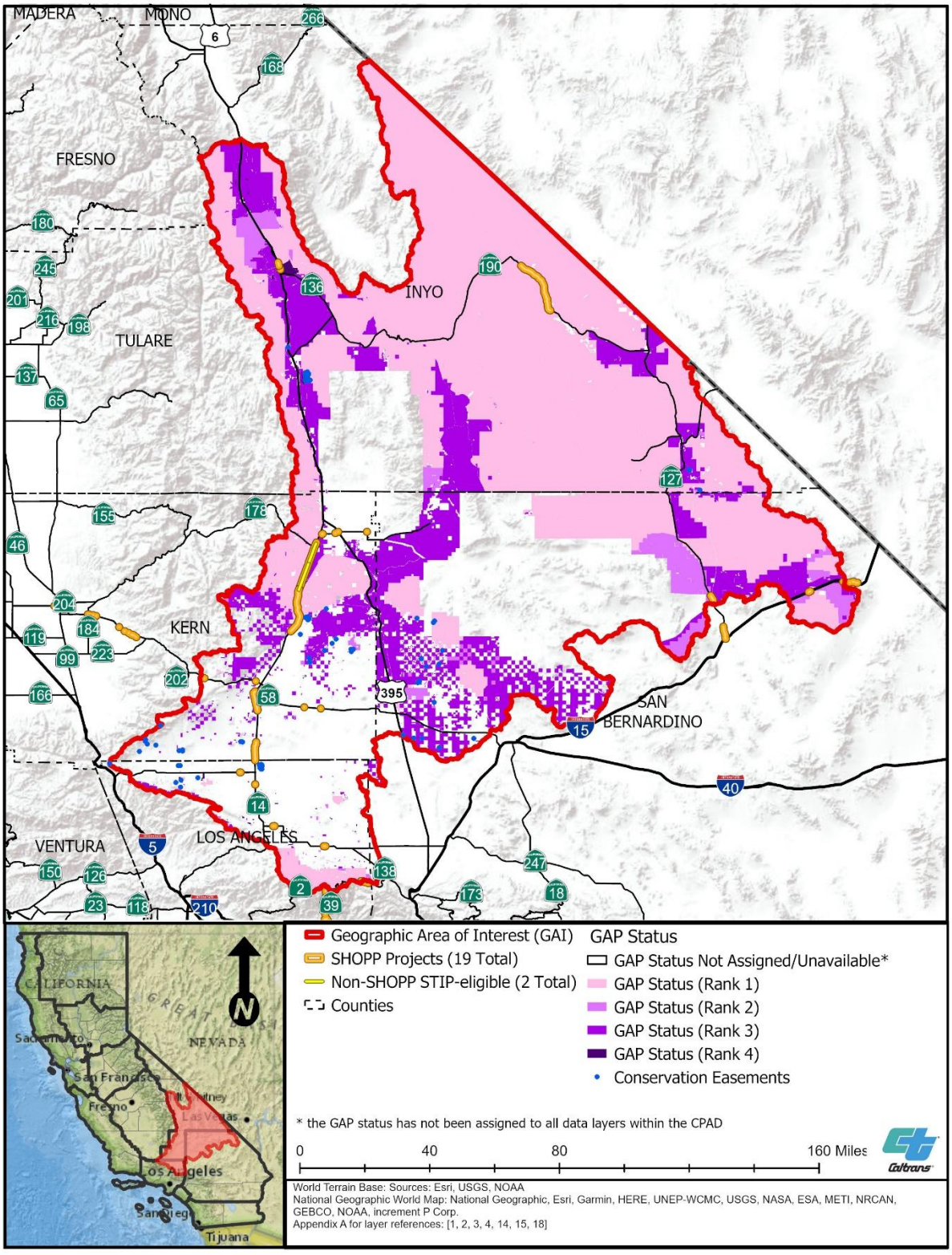


Figure C-4. Topography (RAMNA Figure 2-4)

Figure C-5. Terrestrial Climate Resilience Rankings (RAMNA Figure 2-5)

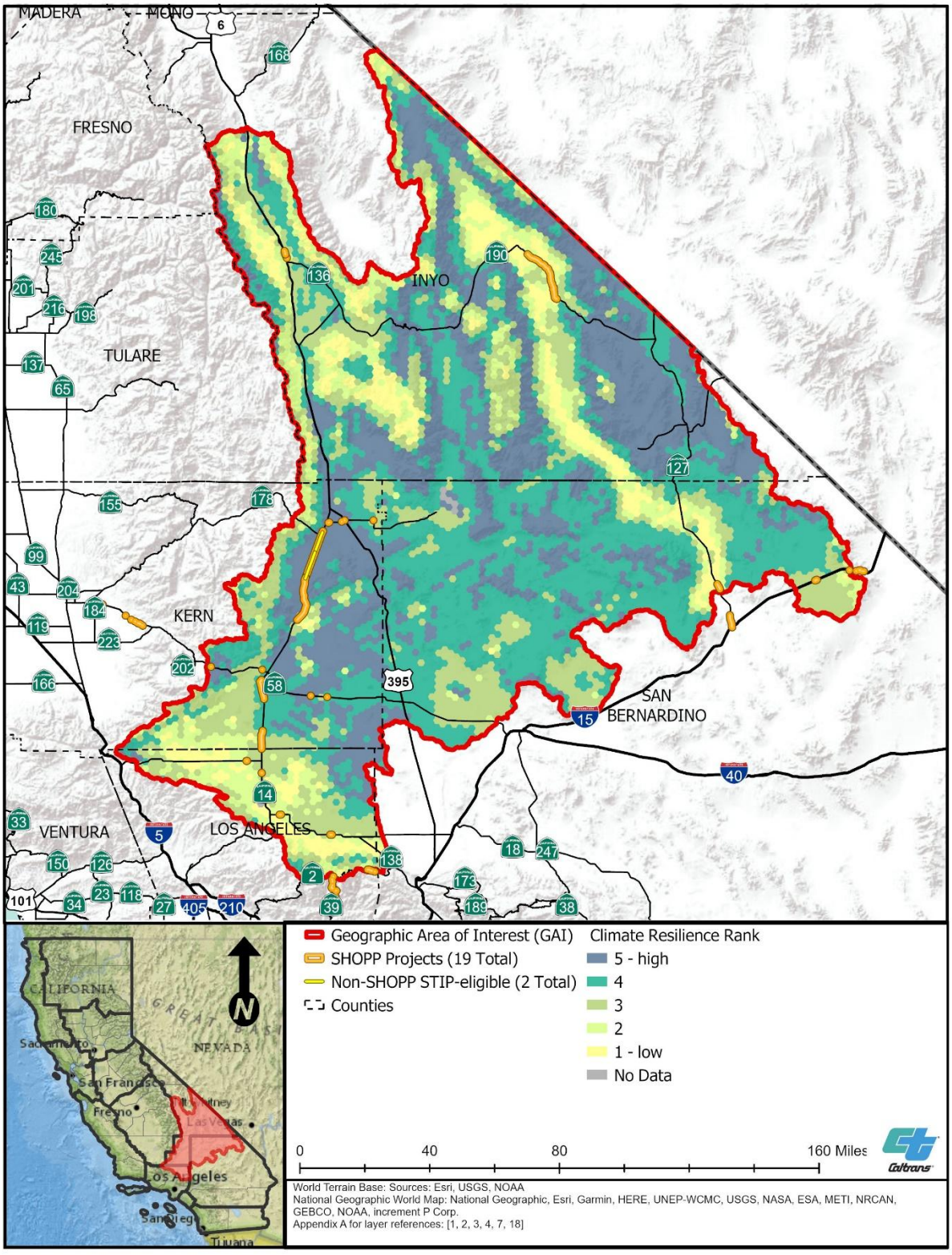


Figure C-6. Major Land Cover (RAMNA Figure 2-6)

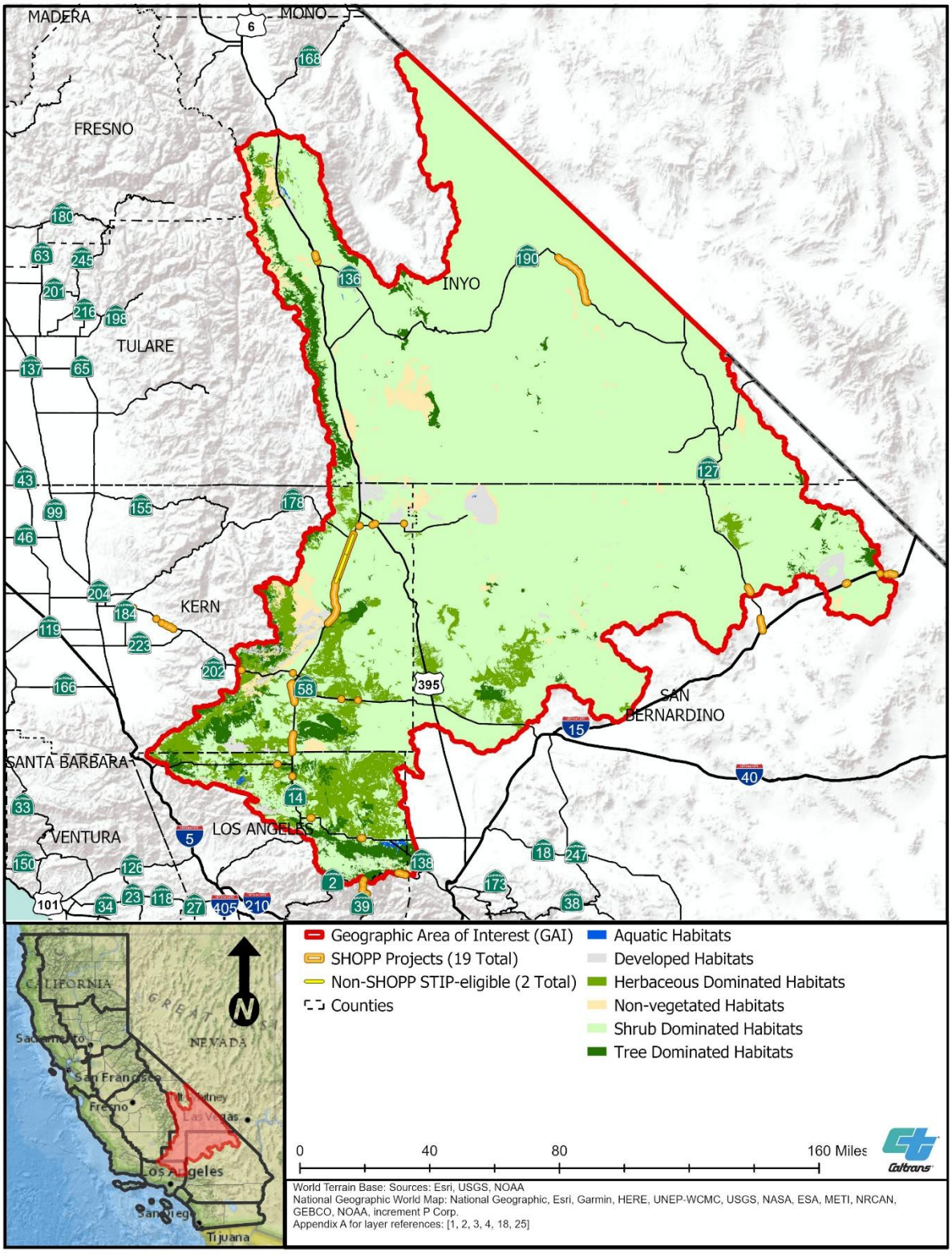


Figure C-7. Federally Designated Critical Habitat (RAMNA Figure 2-7)

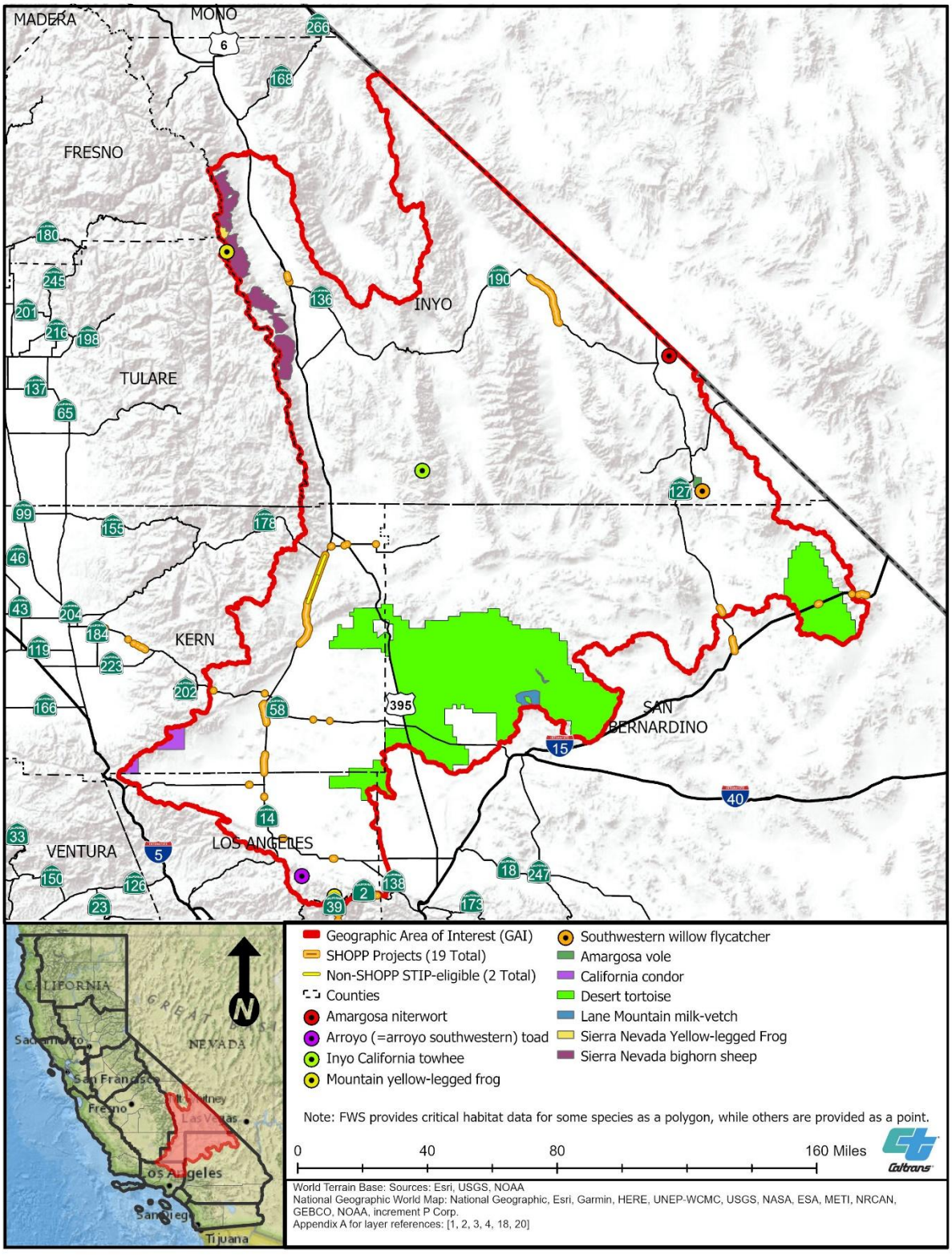


Figure C-8. Terrestrial Connectivity (RAMNA Figure 2-8)

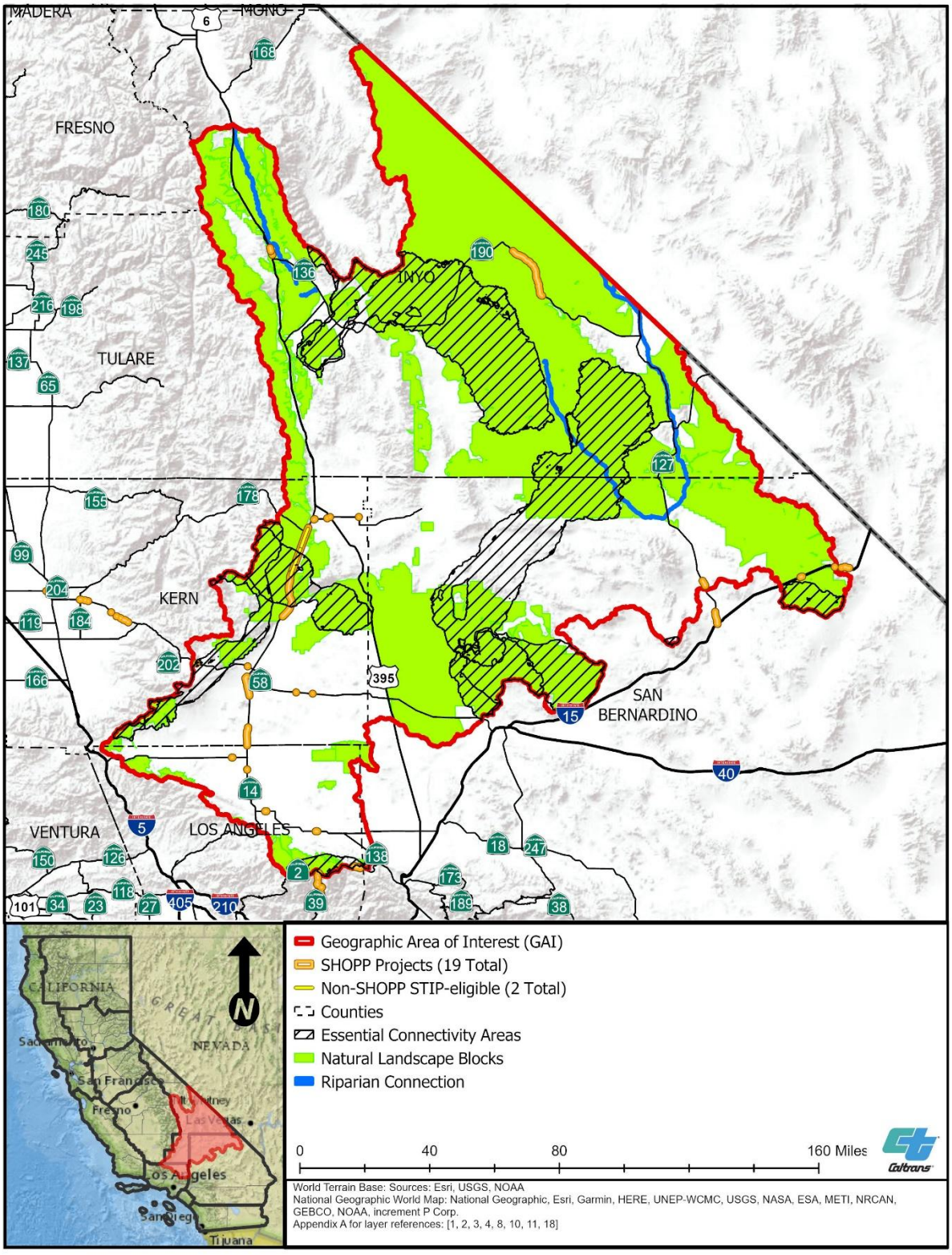


Figure C-9. California Desert Linkage Network (RAMNA Figure 2-9)

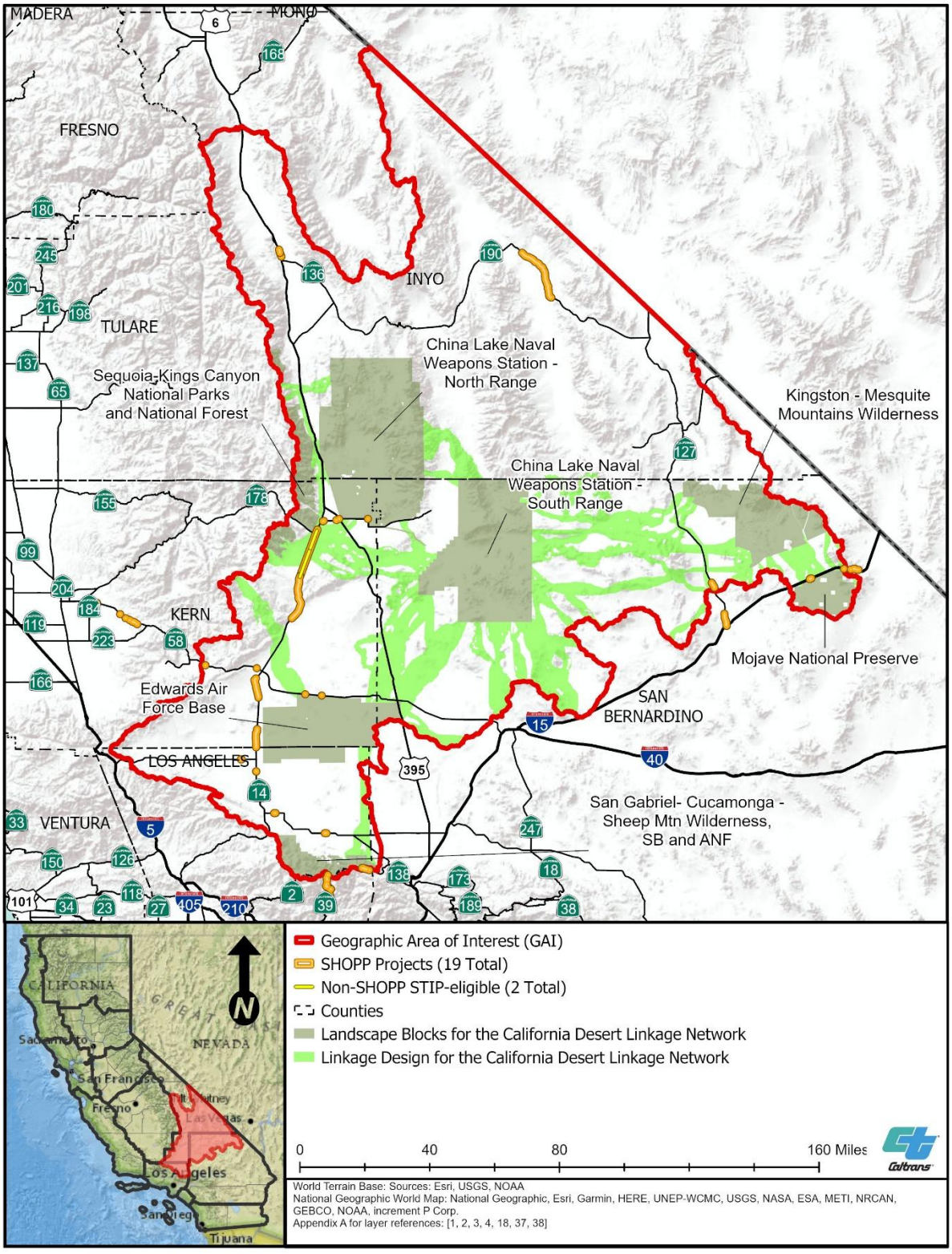


Figure C-10. HUC-8 Sub-basins and HUs (RAMNA Figure 2-10)

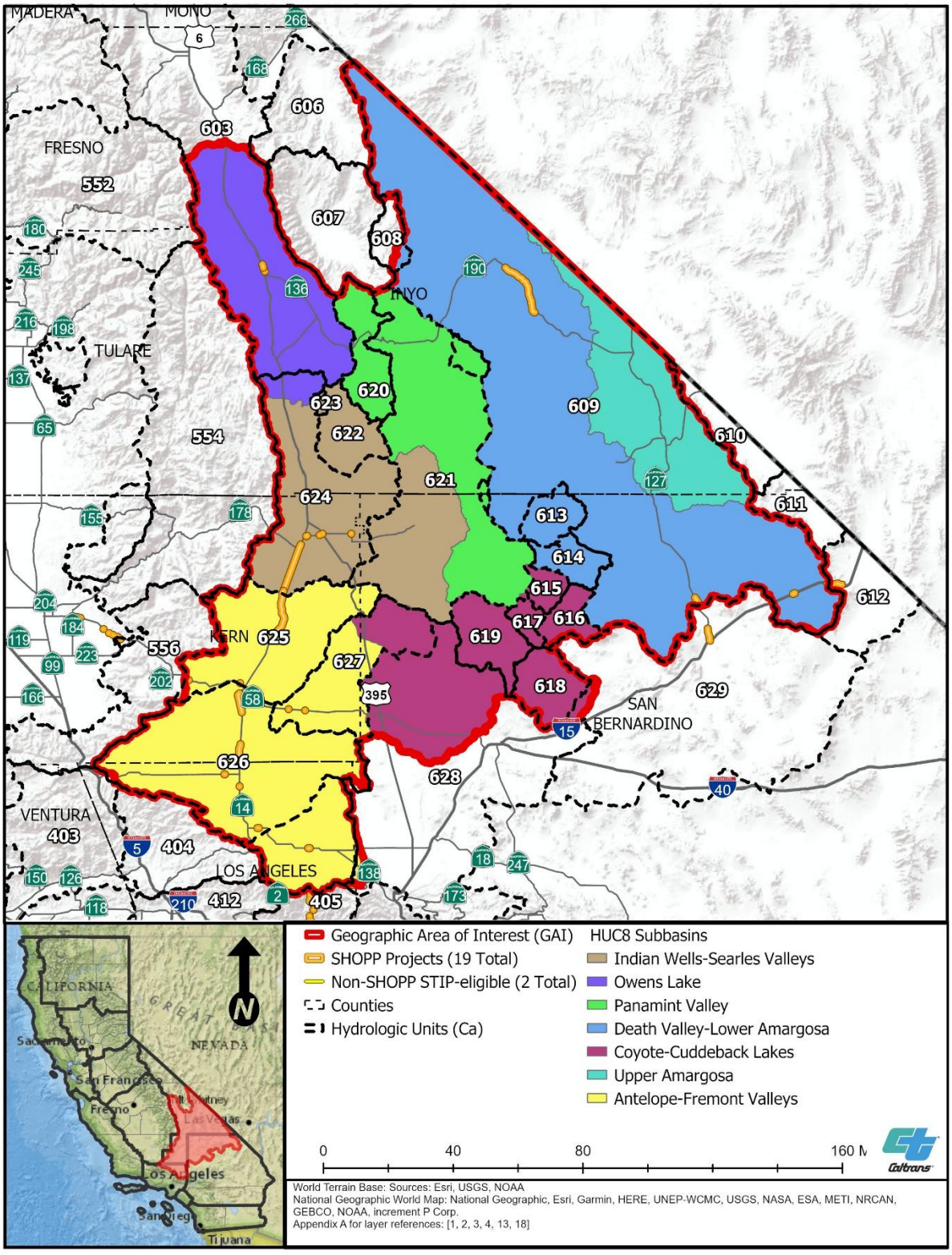


Figure C-11. Flood Hazard Areas (RAMNA Figure 2-11)

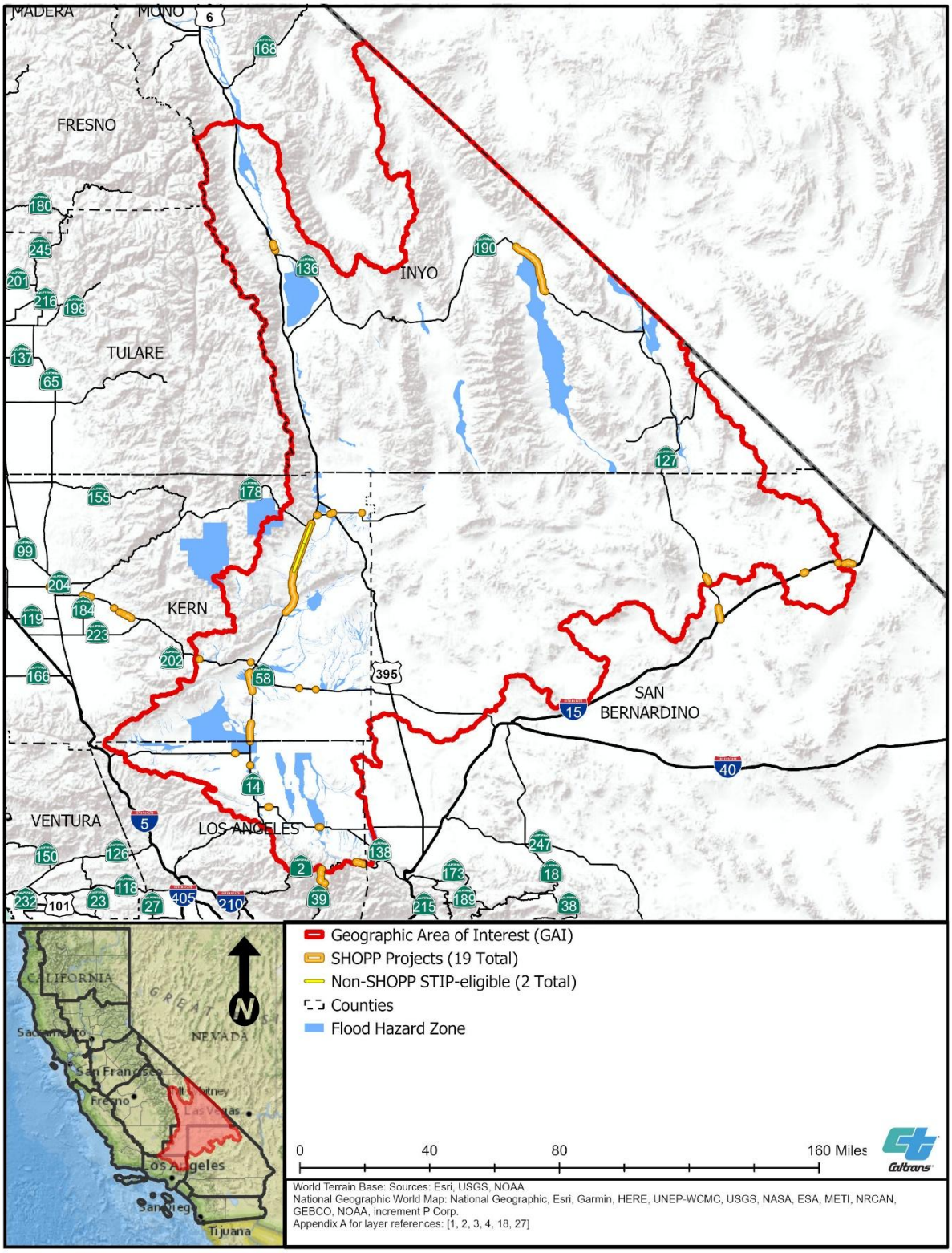


Figure C-12. Wild and Scenic Rivers (RAMNA Figure 2-12)

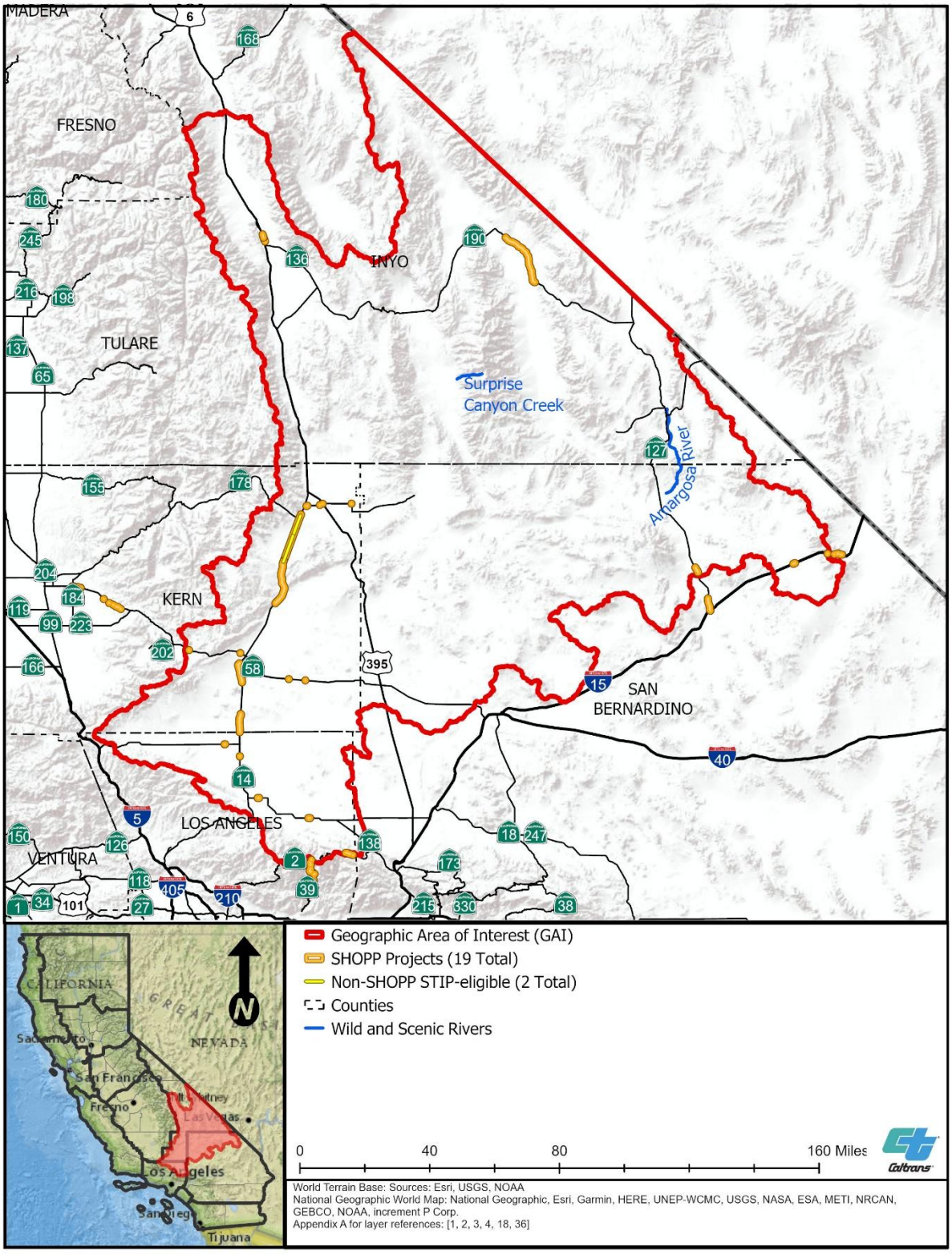
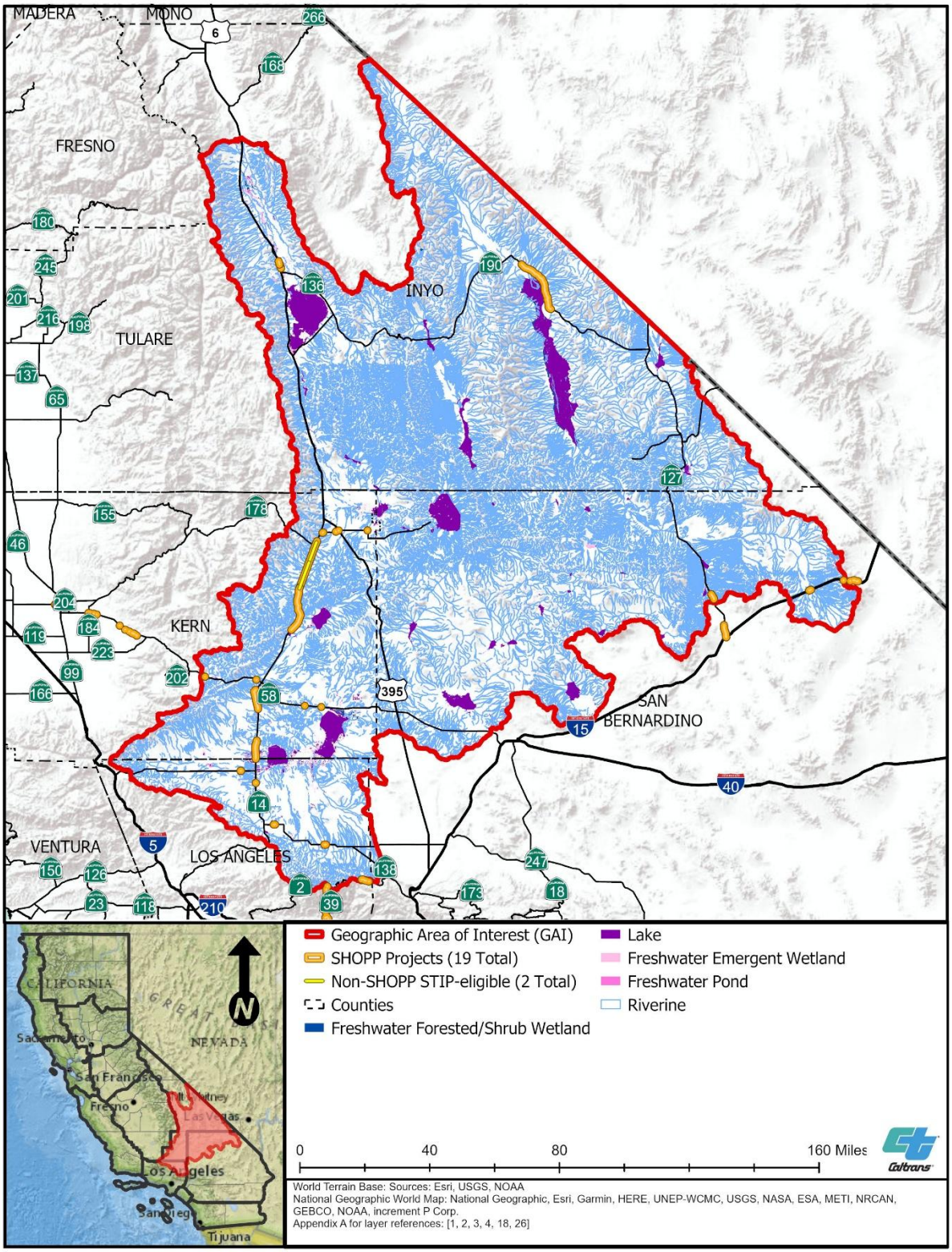


Figure C-13. Aquatic Resource Features and Major Stream Systems (RAMNA Figure 2-13)



ATTACHMENT D: RIPARIAN HABITAT ADVANCE MITIGATION NEEDS ASSESSMENT

This attachment provides new and updated RAMNA sections or subsections that incorporate a new statewide riparian landcover dataset developed for Caltrans by SFEI (Caltrans 2023). They are:

- *Riparian Landcover Dataset*, a new subsection (Subsection 1.4.1) under the SAMNA description in Chapter 1, *Introduction*, describes the new riparian landcover dataset that became available after the initial RAMNA was finalized.
- *Riparian Habitat*, a new section (Section 2.16) in Chapter 2, *Environmental Setting*, provides a brief narrative description of riparian habitat in the Six Northern Mojave Sub-basins and the Owens Lake Sub-basin in California—that is, the GAI.
- *Estimated Impacts on Areas of Potential Riparian Function*, a new section (Section 5.4) in Chapter 5, *Modeled Estimated Impacts*, provides the estimated impacts on areas of potential riparian function for the GAI and planning period using the new statewide riparian landcover dataset.
- *Patterns of Estimated Riparian Habitat Impacts*, a new subsection (Subsection 6.2.1) in Chapter 6, *Benefiting Transportation Project Considerations*, displays the temporal patterns of estimated potential riparian function impacts for the planning period.

Chapter 8 *Aquatic Resources Conservation Goals and Objectives* includes natural resource regulatory agency goals and objectives for riparian habitat; the chapter does not require updating at this time.

Riparian Landcover Dataset (RAMNA New Subsection 1.4.1)

RipZET is a Microsoft Excel and GIS-based decision support tool developed by SFEI to estimate the extent of riparian areas based on the concept of “functional riparian width.” According to this concept, various riparian functions can extend different distances from their adjacent surface waters, depending on local topographic slope, vegetation, and position along a drainage network. More information about the science behind RipZET can be found in SFEI (2015a).

Since 2015, RipZET has been used in smaller and more regional studies across California and has been refined a number of times by SFEI. However, in 2023, SFEI developed a larger-scale statewide riparian landcover dataset for Caltrans to assist with advance mitigation planning (Caltrans 2023). For this statewide product, SFEI used readily available data that were appropriate for the larger scale of the analysis (Caltrans 2023). For example, SFEI used elevation data that are less detailed than recommended in SFEI (2015b) because high-resolution statewide data are not available—SFEI used 5-meter NextMAP data, not the recommended 0.5-meter LiDAR data. More information regarding the inputs to the statewide landcover dataset can be found in Caltrans (2023). Further, it was not feasible to perform the field verification step used for the smaller-scale efforts.

More information regarding the process and computations within RipZET's modules can be found in SFEI (2015b).

Whether the statewide riparian landcover dataset developed for Caltrans improves forecasts of Caltrans riparian-related mitigation needs is currently unknown. Statewide outputs are not regarded as riparian maps *per se* because they do not depict actual boundaries based on field observations. Instead, they represent modeled areas where riparian functions are likely to be supported based on hillslope and vegetation processes (Caltrans 2023). Hence, the modeled impacts presented in this RAMNA Addendum using the statewide riparian landcover dataset layer are better understood to be forecast impacts on areas of potential riparian function, more so than on riparian habitat itself, and are likely more extensive than actual impacts to riparian habitat or to the vegetation associated with the bed and bank of streams or lakes. For transportation project environmental studies and permits, the extent of potential impacts on fish and wildlife resources associated with modification of the bed and bank of wetland and non-wetland water resources will ultimately be determined by biologists in the field.

Riparian Habitat (RAMNA New Section 2.16)

The GAI is located within the Lahontan Region, where vegetation can range from sagebrush and creosote brush in desert areas to pinyon-juniper and mixed conifer forests in the higher elevations. Riparian areas within the Lahontan Region include riparian deciduous forest and desert washes (Lahontan Regional Water Quality Control Board ["RWQCB"] 2021). Riparian habitat primarily occurs along the southern portion of the GAI on the slopes of the Angeles National Forest, the western portion of the GAI along the slopes of the Sequoia National Forest, the northwestern portion of the GAI within Owens Valley, and various parts of the Mojave Desert. Riparian forests are located primarily within the floodplains of streams and rivers with a tree canopy that can include black willow (*Salix goodingii*) and/or red willow (*Salix laevigata*) mixed with Fremont cottonwood (*Populus fremontii*), saltcedar (*Tamarix ramosissima*), and Russian olive (*Elaeangus angustifolia*) (Los Angeles Department of Water and Power 2004). Within various parts of the Mojave Desert, riparian habitat is generally associated with linear hydrologic features, desert washes, and mountain streams. Some sensitive riparian species may include California sycamore (*Platanus racemosa*), fan palm (*Washingtonia filifera*), Fremont cottonwood, and other willow species (Dudek 2023).

Estimated Impacts on Areas of Potential Riparian Function (RAMNA New Section 5.4)

Potential impacts on areas of potential riparian function were estimated using the statewide riparian landcover dataset developed for Caltrans by SFEI (Caltrans 2023). The analysis consisted of an intersection of assumed transportation project footprints for the 19 transportation projects listed in Attachment B, *Transportation Projects Planned for the GAI during the Planning Period,* with the riparian landcover dataset. Given uncertainties in the dataset, results are shown two ways, based on slope and based on vegetation. Vegetation polygon features used for the analysis are consistent with the SAMNA. Of the 19 SHOPP transportation projects evaluated, 14 projects are forecast to affect 0.18 to 80.73 acres of riparian habitat in the GAI during the planning period (see Table D-1).

Table D-1. Summary of Estimated SHOPP Impacts on Areas of Potential Riparian Function in the GAI (RAMNA New Table)

Sub-basin (HUC-8)	Sub-basin Number	Number of Transportation Projects	Slope-based Riparian Estimate (acres)[a]	Vegetation Process-based Riparian Estimate (acres)[a]
Antelope-Fremont Valleys	18090206	6	0.13	65.85
Coyote-Cuddeback Lakes	18090207	0	0.00	0.00
Death Valley-Lower Amargosa	18090203	4	0.04	9.30
Indian Wells-Searles Valley	18090205	3	0.00	3.50
Owens Lake	18090103	2	0.00	2.08
Panamint Valley	18090204	0	0.00	0.00
Upper Amargosa	18090202	0	0.00	0.00
Total[b,c]	Not applicable	**14**	**0.18**	**80.73**

[a] Vegetation polygon features used for the analysis are consistent with the SAMNA.
[b] Totals may be different on account of rounding.
[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 riparian habitat.

Patterns of Estimated Impacts on Areas of Potential Riparian Function (RAMNA New Subsection 6.2.1)

As shown in Tables D-2 and D-3 and Figures D-1 and D-2, when the SHOPP transportation projects identified in Attachment B, *Transportation Projects Planned for the GAI during the Planning Period,* have their forecast impacts on areas of potential riparian function examined relative to their expected advertising date, the compensatory mitigation needs are spread throughout the 10-year planning period:

- Mitigation needs for areas of potential riparian function within the Antelope-Fremont Valleys sub-basin have the largest impacts in fiscal years 2026/27 and 2027/28, with lesser impacts in fiscal years 2030/31, 2031/32, and 2032/33.
- Mitigation needs for areas of potential riparian function within the Death Valley-Lower Amargosa sub-basin have the largest impacts in fiscal year 2029/30, with lesser impacts in fiscal years 2023/24, 2025/26, and 2031/32.
- Mitigation needs for areas of potential riparian function within the Indian Wells-Searles Valley sub-basin have the largest impacts in fiscal year 2028/29, with lesser impacts in fiscal years 2026/27, 2030/31, and 2032/33.
- Mitigation needs for areas of potential riparian function within the Owens Lake sub-basin have the largest impacts in fiscal year 2023/24, with lesser impacts on fiscal year 2025/26.
- No impacts to areas of potential riparian function, and hence no mitigation needs, are forecast for the Upper Amargosa, Panamint Valley, and Coyote-Cuddeback Lakes sub-basins.

Spatially, these transportation projects are distributed throughout the GAI (Figure D-3).

Table D-2. Estimated Impacts on Slope-based Areas of Potential Riparian Function in the GAI, by Transportation Project Delivery Year (RAMNA New Table)

Expected Adver-tisement Year	Antelope Fremont Valleys Caltrans SHOPP Projects (count)[a]	Antelope Fremont Valleys (acres)[b]	Death Valley-Lower Amargosa Caltrans SHOPP Projects (count)[a]	Death Valley-Lower Amargosa (acres)[b]	Indian Wells-Searles Valleys Caltrans SHOPP Projects (count)[a]	Indian Wells-Searles Valleys (acres)[b]	Owens Lake Caltrans SHOPP Projects (count)[a]	Owens Lake (acres)[b]
2023/24	0	0.00	0	0.00	0	0.00	0	0.00
2024/25	0	0.00	0	0.00	0	0.00	0	0.00
2025/26	0	0.00	0	0.00	0	0.00	0	0.00
2026/27	0	0.00	0	0.00	0	0.00	0	0.00
2027/28	0	0.00	0	0.00	0	0.00	0	0.00
2028/29	0	0.00	0	0.00	0	0.00	0	0.00
2029/30	0	0.00	1	0.04	0	0.00	0	0.00
2030/31	0	0.00	0	0.00	0	0.00	0	0.00
2031/32	0	0.00	0	0.00	0	0.00	0	0.00
2032/33	1	0.13	0	0.00	0	0.00	0	0.00
Total	**1**	**0.13**	**1**	**0.04**	**0**	**0.00**	**0**	**0.00**

[a] The planned transportation projects that informed this assessment are listed in Attachment B, Table B-1.
[b] Numbers were rounded.

Figure D-1. Estimated Impacts on Slope-based Areas of Potential Riparian Function in the GAI, by Transportation Project Delivery Year (acres) (RAMNA New Figure)

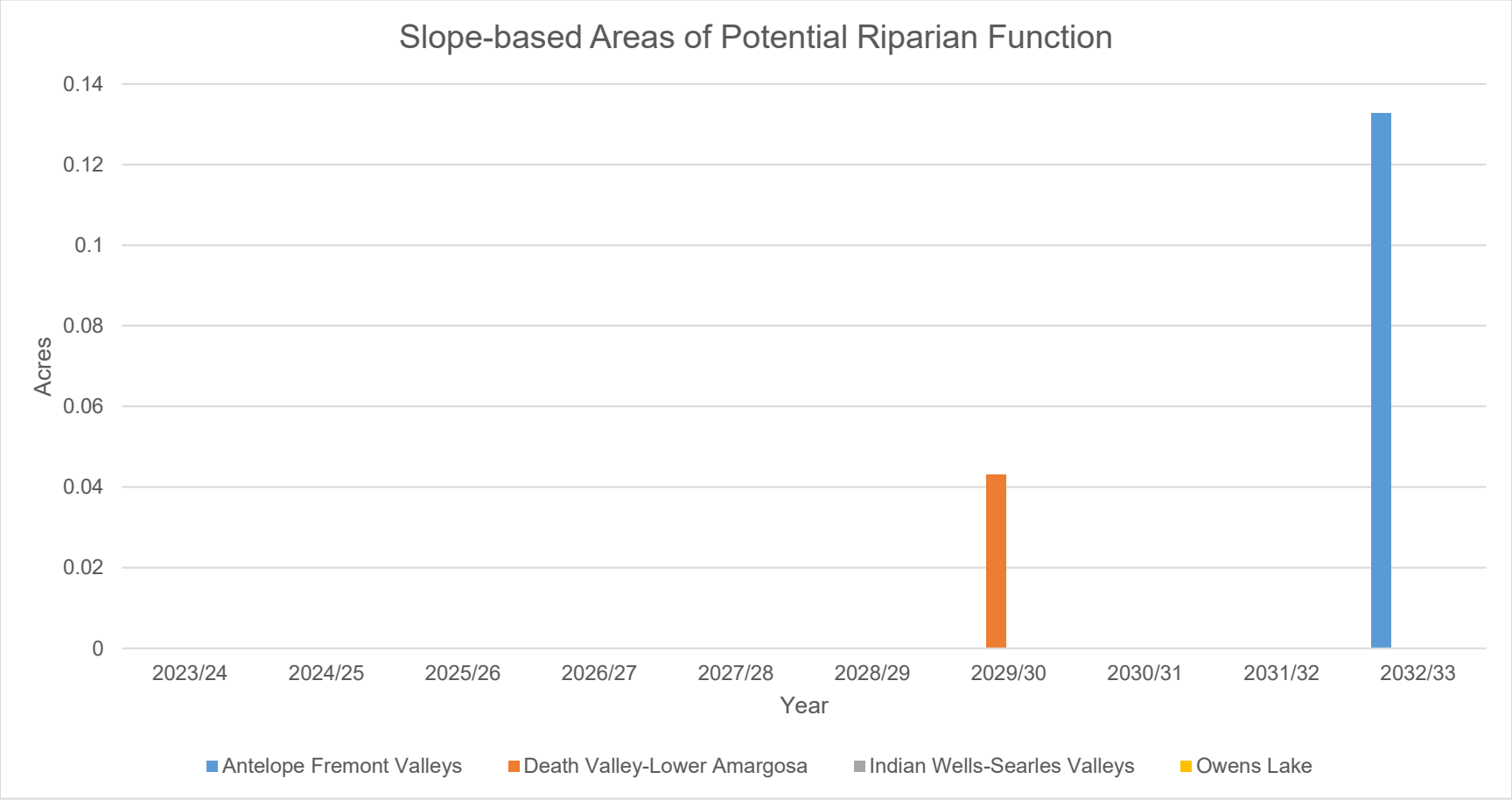


Table D-3. Estimated Impacts on Vegetation-based Areas of Potential Riparian Function in the GAI, by Transportation Project Delivery Year (RAMNA New Table)

Expected Adver-tisement Year	Antelope Fremont Valleys Caltrans SHOPP Projects (count)[a]	Antelope Fremont Valleys (acres)[b]	Death Valley-Lower Amargosa Caltrans SHOPP Projects (count)[a]	Death Valley-Lower Amargosa (acres)[b]	Indian Wells-Searles Valleys Caltrans SHOPP Projects (count)[a]	Indian Wells-Searles Valleys (acres)[b]	Owens Lake Caltrans SHOPP Projects (count)[a]	Owens Lake (acres)[b]
2023/24	0	0.00	1	1.98	0	0.00	1	1.80
2024/25	0	0.00	0	0.00	0	0.00	0	0.00
2025/26	0	0.00	1	0.22	0	0.00	1	0.29
2026/27	1	21.91	0	0.00	1	0.03	0	0.00
2027/28	2	33.07	0	0.00	0	0.00	0	0.00
2028/29	0	0.00	0	0.00	1	2.55	0	0.00
2029/30	0	0.00	1	7.09	0	0.00	0	0.00
2030/31	1	0.01	0	0.00	0	0.00	0	0.00
2031/32	1	2.08	1	0.02	0	0.00	0	0.00
2032/33	1	8.77	0	0.00	1	0.93	0	0.00
Total	**6**	**65.85**	**4**	**9.30**	**3**	**3.50**	**2**	**2.08**

[a] The planned transportation projects that informed this assessment are listed in Attachment B, Table B-1.
[b] Numbers were rounded.

Figure D-2. Estimated Impacts on Vegetation-based Areas of Potential Riparian Function in the GAI, by Transportation Project Delivery Year (acres) (RAMNA New Figure)

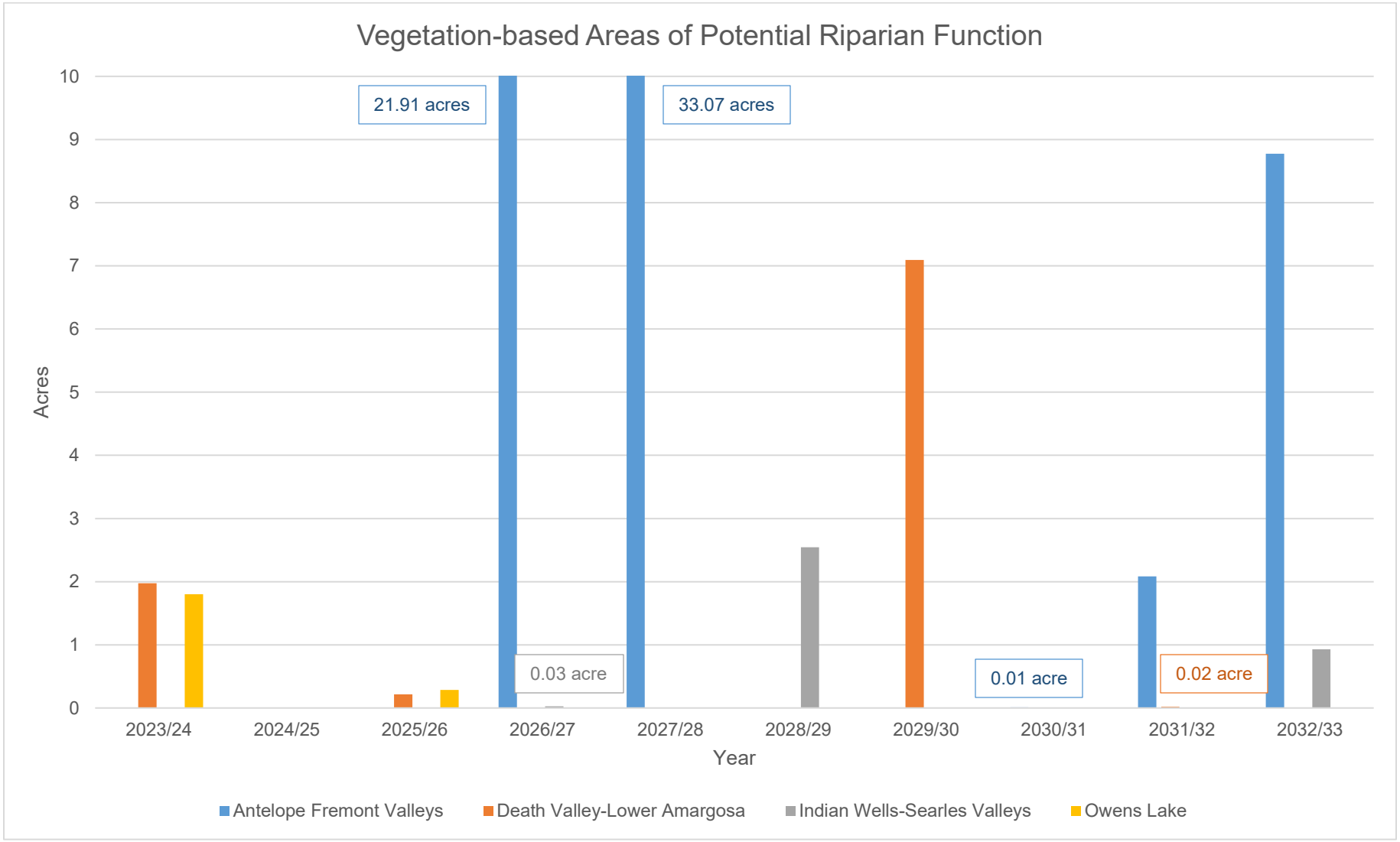
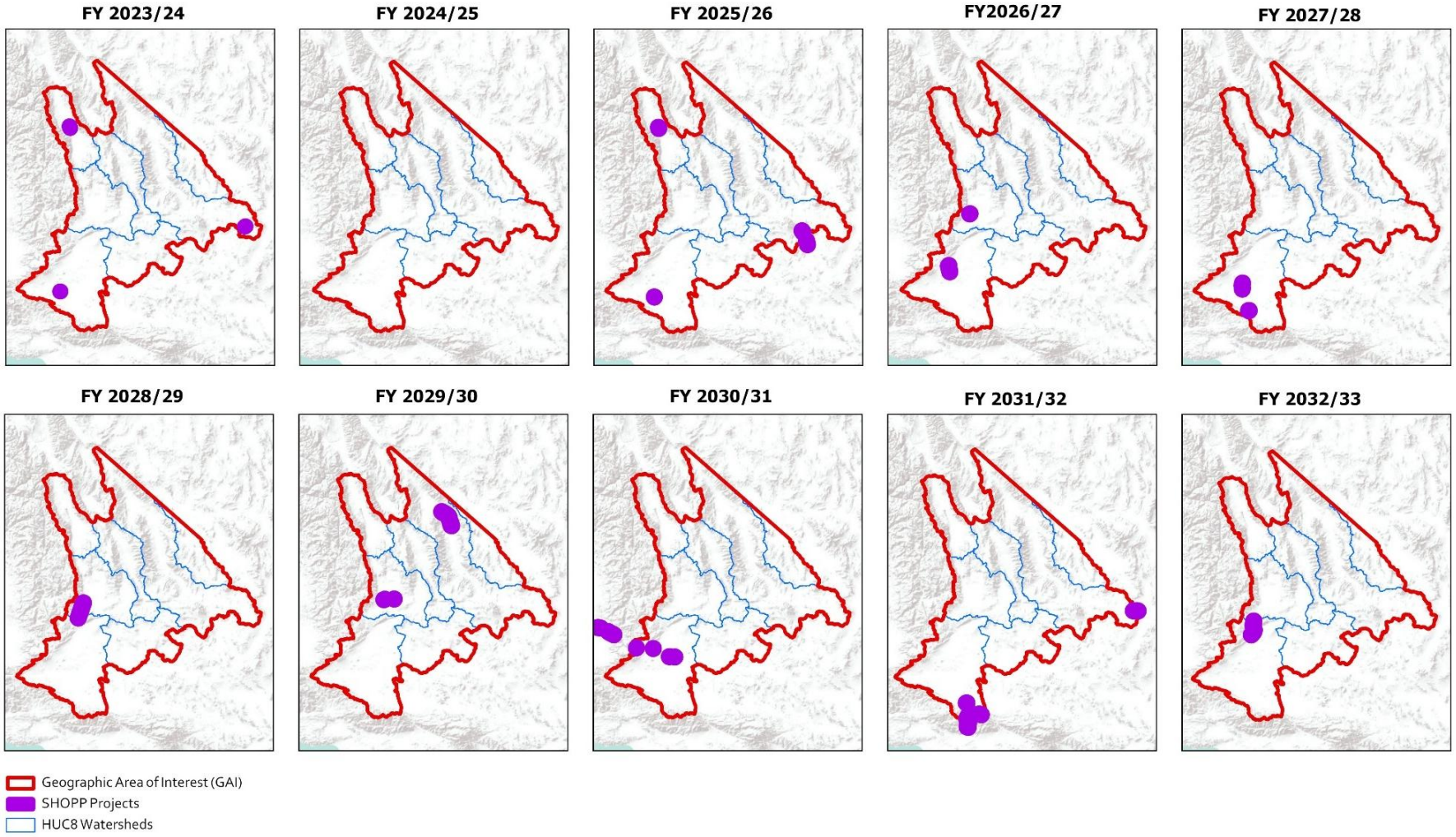


Figure D-3. Location of SHOPP Estimated Impacts, by Transportation Project Delivery Year (RAMNA Figure 6-10)



Sources: Esri, USGS, NOAA, USGS

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———. 2015b. RipZET: User's Manual. Prepared by the San Francisco Estuary Institute – Wetlands Focus Area. Funded by Proposition 50 Watershed Protection Program Grant. Agreement Number: #10-429-550. Contribution #747. Richmond, California.

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ATTACHMENT E: EXISTING MITIGATION OPPORTUNITIES

This attachment provides an updated version of RAMNA Chapter 4, *Existing Mitigation Opportunities*.

Existing Mitigation Opportunities (RAMNA Chapter 4)

Streets and Highway Code ("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.

SHOPP Advance Mitigation Credits (RAMNA Section 4.1)

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; however, none are located within the GAI.

HCPs and NCCPs (RAMNA Section 4.2)

HCPs[1] and NCCPs[2] define covered activities that consist of specific projects and actions that may have adverse effects on covered species and natural communities. FWS and/or CDFW estimate adverse effects associated with the covered activities and issue incidental take permits. Once the HCP, NCCP, or HCP/NCCP is adopted and the incidental take permits 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, or HCP/NCCP streamlines permit processes by eliminating the need to obtain project-specific incidental take permits from FWS and/or CDFW and providing early documentation of compliance with the California Endangered Species Act ("CESA") and Federal Endangered Species Act ("FESA").

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.

No NCCPs or HCP/NCCPs were identified within the GAI; therefore, no opportunities to participate in pre-transfer mitigation purchases, as authorized in SHC § 800.6(a)(2), were found. Nevertheless, Caltrans identified one active HCP within the GAI, the West Mojave Plan HCP, that applies to transportation-related activities and that Caltrans may be able to use to meet its compensatory mitigation needs in the GAI.

[1] Pursuant to Section 10 of the FESA or consultations under Section 7 of the FESA.
[2] Pursuant to Section 2835 of the California Fish and Game Code ("FGC").

West Mojave Plan HCP (RAMNA Subsection 4.2.1)

The West Mojave Plan HCP area is not publicly available in electronic format and is, therefore, not shown on a figure. Table E-1 summarizes the signatories, status or date of the plan, plan area, participating transportation agency, covered species, and covered natural communities.

Table E-1. Overview of HCPs and NCCPs in the GAI[a,b] (RAMNA Table 4-1)

Name	Signatories	Date	Plan Area (acres)	Participating Transportation Agencies	Covered Species	Covered Natural Communities
West Mojave Plan HCP	BLM, FWS[c]	2005	9,359,070	Caltrans	Desert tortoise, Mohave ground squirrel, burrowing owl, plus 22 other animal and 24 plant 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] Signatory to the *Master Process Agreement for Planning and Developing Advance Mitigation Throughout California for the California Department of Transportation* (Caltrans et al. 2020).

Multiple project-specific HCPs in the GAI were not included in Table E-1 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.

Conservation and Mitigation Banks (RAMNA Section 4.3)

A conservation or mitigation bank is privately or publicly owned land managed for its natural resource values. In exchange for permanently protecting, managing, and monitoring the land, the bank sponsor is allowed to sell or transfer habitat 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 10 active or pending conservation and/or mitigation banks with service areas that overlap all or part of the GAI. Information on the agency approvals and types of credits available are provided in Table E-2. 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. Information on the resource and regulatory agency approvals, the types of credits available, and brief descriptions of each bank are provided in Table E-2.

The location and extent of the service areas associated with the aforementioned banks are depicted on Figures E-1 to E-7. Note that, per CDFW discretion, all impacts on desert tortoise (*Gopherus agassizii*) within Los Angeles County must be mitigated within the county and within the same watershed where the impacts occur (CDFW 2020).

Several additional conservation and/or mitigation banks have service areas that are partially within the GAI but do not overlap any state highways within the GAI. These banks were omitted from Table E-2 because they would not be usable by Caltrans for fulfilling mitigation requirements.

Table E-2. Overview of Conservation and Mitigation Banks in the GAI[a] (RAMNA Table 4-2)

Name	Year Approved	Current Status	Signatories[b]	Bank Location (County)[c]	Instrument Includes Pre-transfer Credit Sales?	Area (acres)	Credit Types
Antelope Valley Conservation Bank	2022	Active – credits available	CDFW	Kern	Yes	700	Joshua tree, waters of the state
Black Mountain Conservation Bank	2018	Active – credits available	CDFW	San Bernardino	No	1,940	Desert tortoise, Mohave ground squirrel, American badger, desert kit fox, loggerhead shrike, LeConte's thrasher, stream
Butte Valley Conservation Bank	Pending	Pending	CDFW is anticipated	Los Angeles	Yes (anticipated)	Unknown	Swainson's hawk, Joshua tree, waters of the state – stream habitat
Fenner Valley Desert Tortoise Conservation Bank	2015	Pending	CDFW	San Bernardino	No	7,500	At this time (December 2024), Fenner Valley Desert Tortoise Conservation Bank has not met the criteria to be fully established and does not have credits for sale
Lytle Creek Conservation Bank	2014	Active – credits available	FWS	San Bernardino	No	199	San Bernardino kangaroo rat and Santa Ana woollystar
Mojave Desert Tortoise Umbrella Conservation Bank	2020	Active – credits available	FWS, CDFW	San Bernardino	No	4,700	Desert tortoise (Western Mojave and Colorado River Recovery Units), Mohave ground squirrel, burrowing owl, and streams (Mojave River Watershed and Colorado River Basin only)

Name	Year Approved	Current Status	Signatories[b]	Bank Location (County)[c]	Instrument Includes Pre-transfer Credit Sales?	Area (acres)	Credit Types
Mojave River Watershed Mitigation Bank	2022	Active – credits available	Corps, Lahontan RWQCB, CDFW	San Bernardino	No	436	Riverine (streambed), palustrine (scrub-shrub wetland and emergent wetland), and lacustrine (unconsolidated bottom)
Petersen Ranch Mitigation Bank	2016	Active – credits available	Corps, RWQCB, CDFW	Los Angeles	No	4,103	Wetlands: alluvial floodplain, stream, open water, and riparian Species and habitats: willows, cottonwoods, Swainson's hawk, mulefat, chaparral, cismontane woodland, Great Basin scrub, riparian, seeps, meadows, marshes, and grassland
West Harper Conservation Bank	2024	Active – credits available	FWS, CDFW	San Bernardino	Yes	654	Desert tortoise, Mohave ground squirrel, desert wash
West Mojave Conservation Bank (includes Inyo-Coso Preserve)	2017	Active – credits available	CDFW	Kern	No	914	Desert tortoise, Mohave ground squirrel, intermittent stream/riparian

[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::::::
[b] All signatory agencies are also 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] Bank service area boundaries may extend well outside of the county where the bank itself is located.

Figure E-1. Conservation and Mitigation Bank Service Areas – Part 1 (RAMNA Figure 4-1)

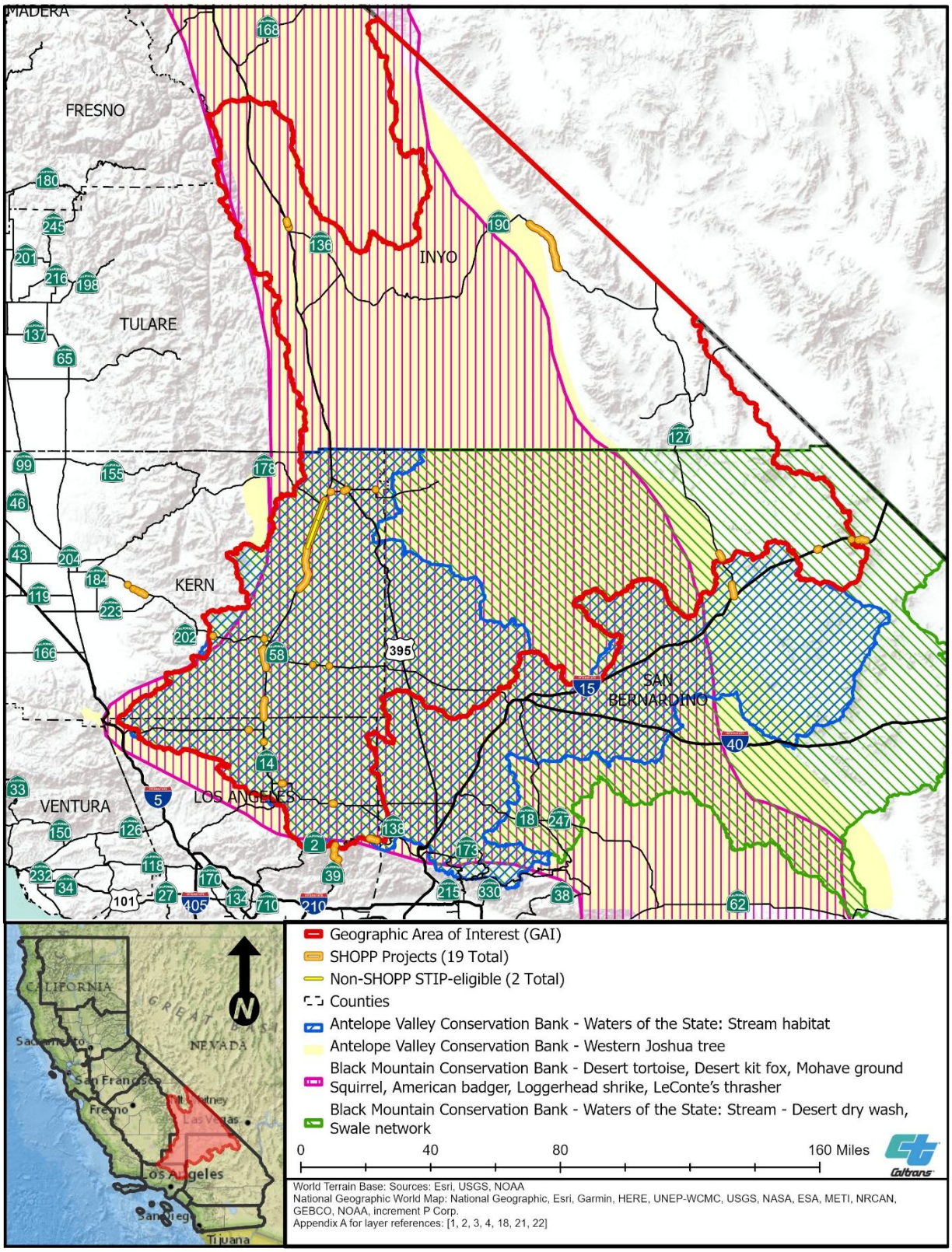


Figure E-2. Conservation and Mitigation Bank Service Areas – Part 2 (RAMNA Figure 4-2)

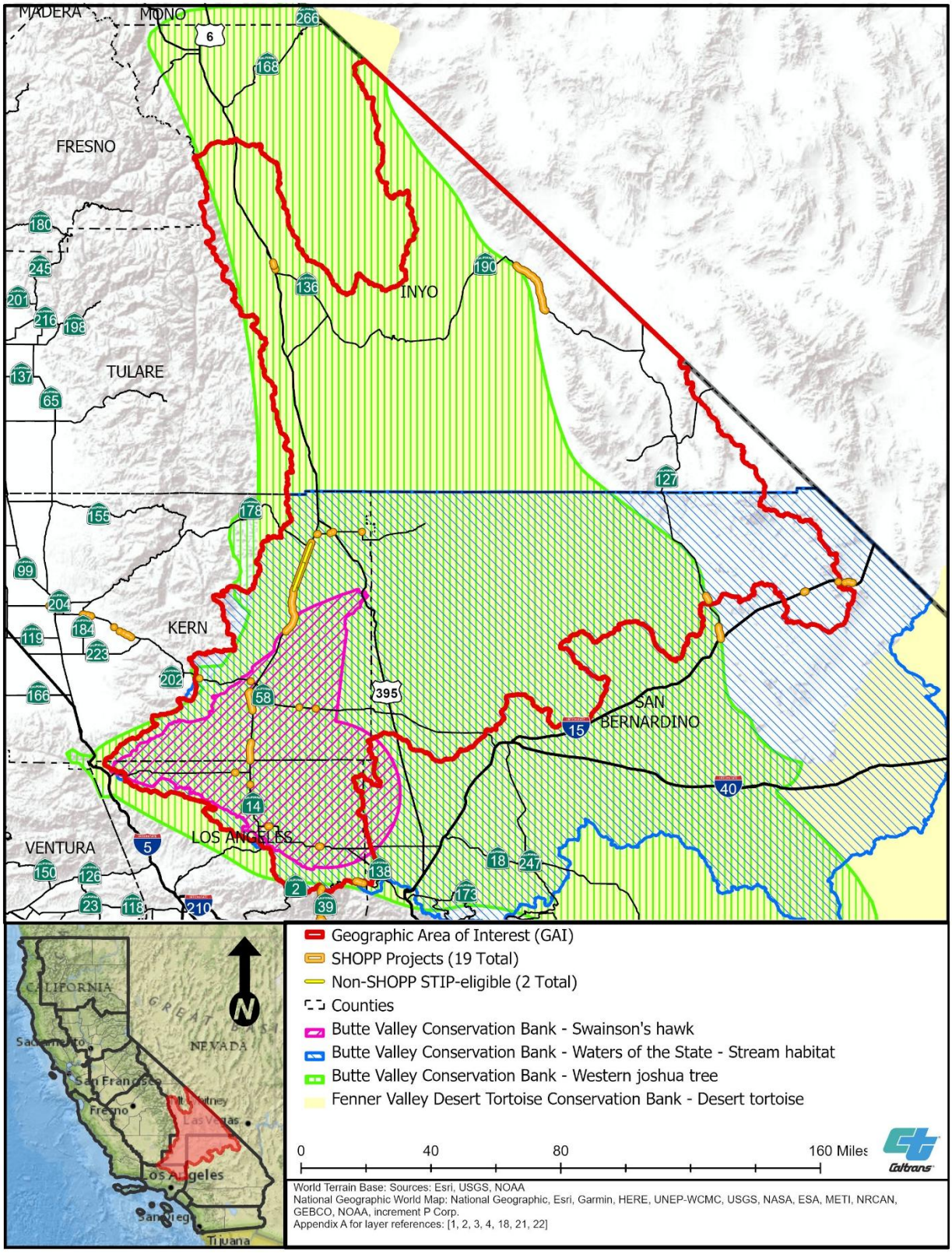


Figure E-3. Conservation and Mitigation Bank Service Areas – Part 3 (RAMNA Figure 4-3)

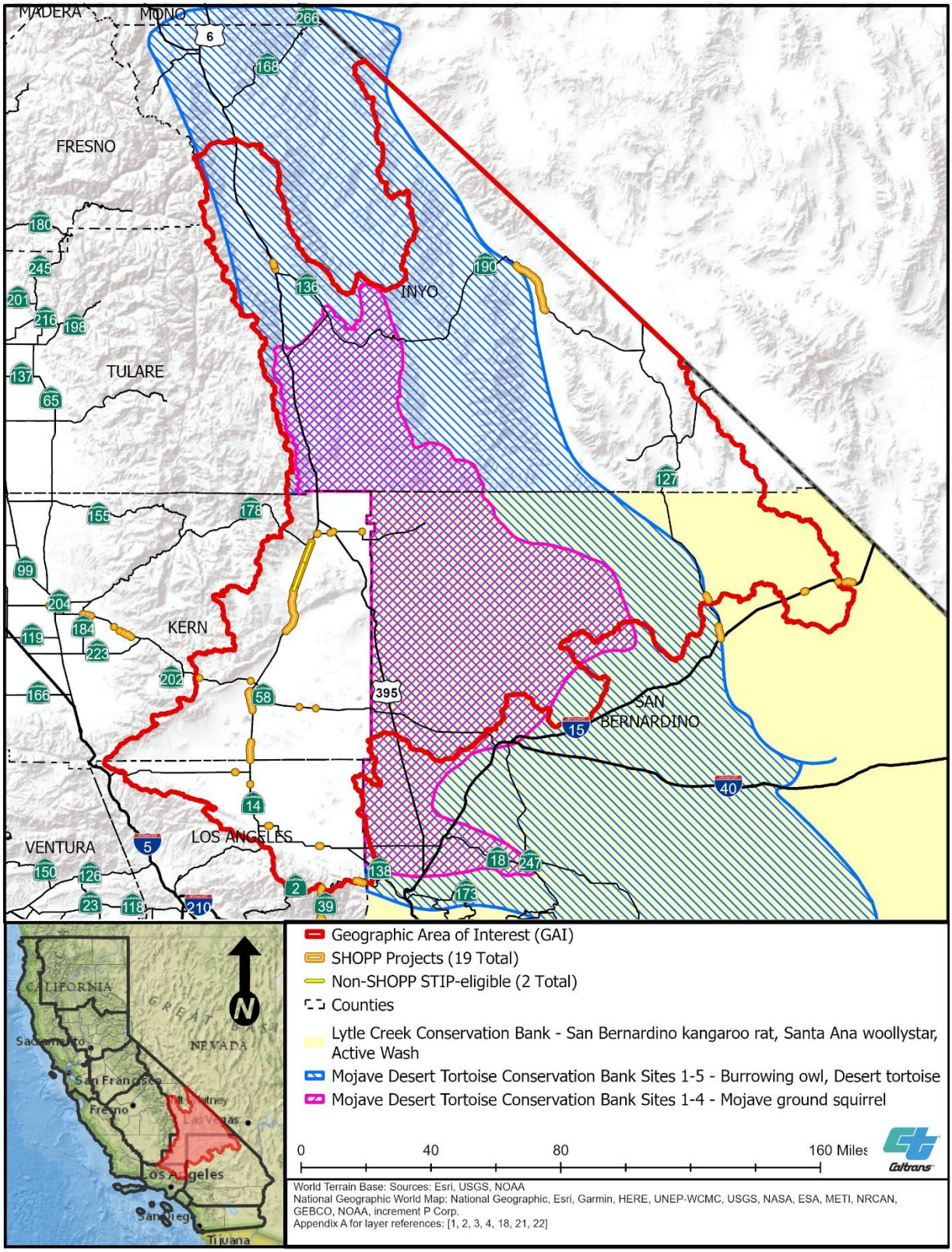


Figure E-4. Conservation and Mitigation Bank Service Areas – Part 4 (RAMNA Figure 4-4)

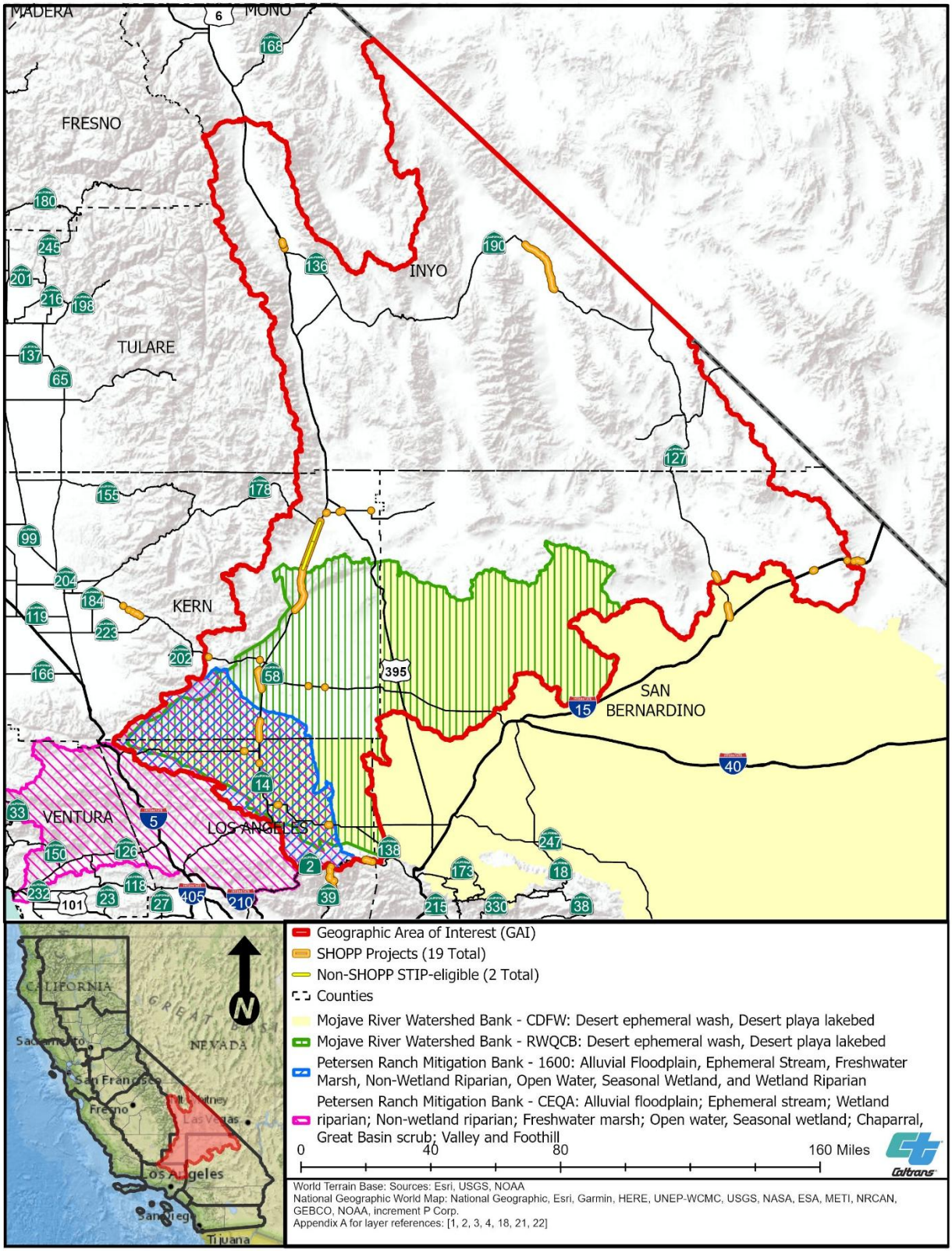


Figure E-5. Conservation and Mitigation Bank Service Areas – Part 5 (RAMNA New Figure)

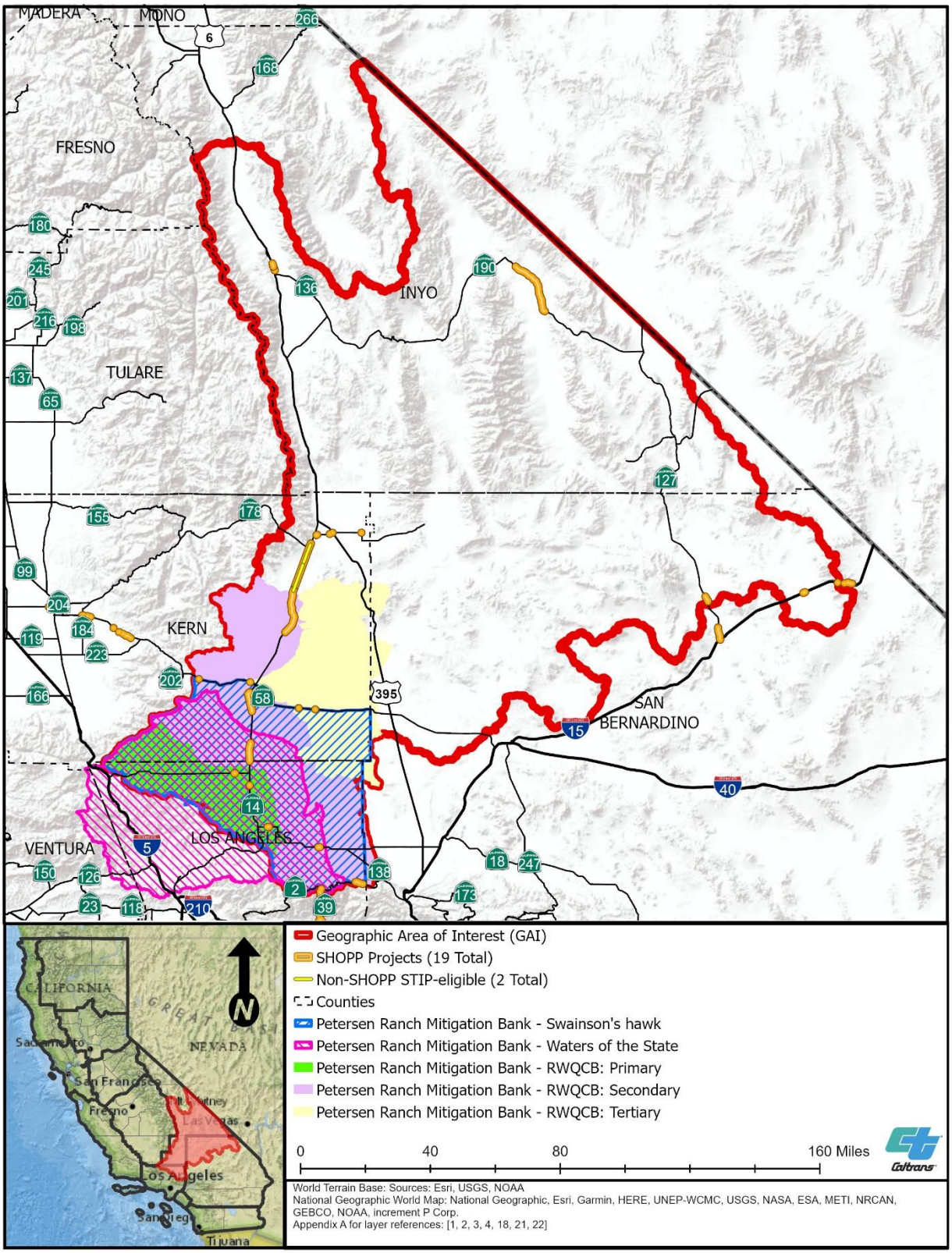


Figure E-6. Conservation and Mitigation Bank Service Areas – Part 6 (RAMNA New Figure)

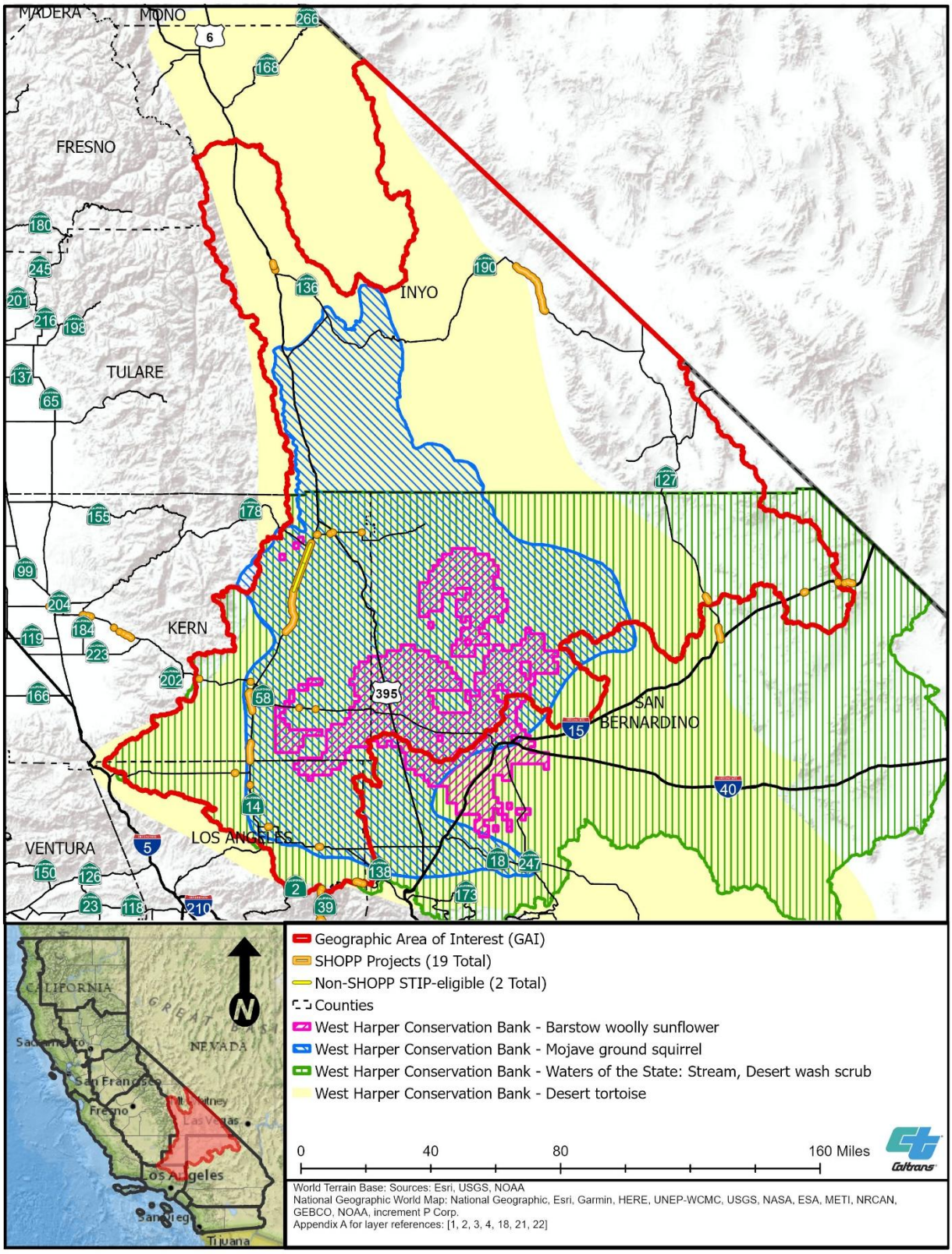
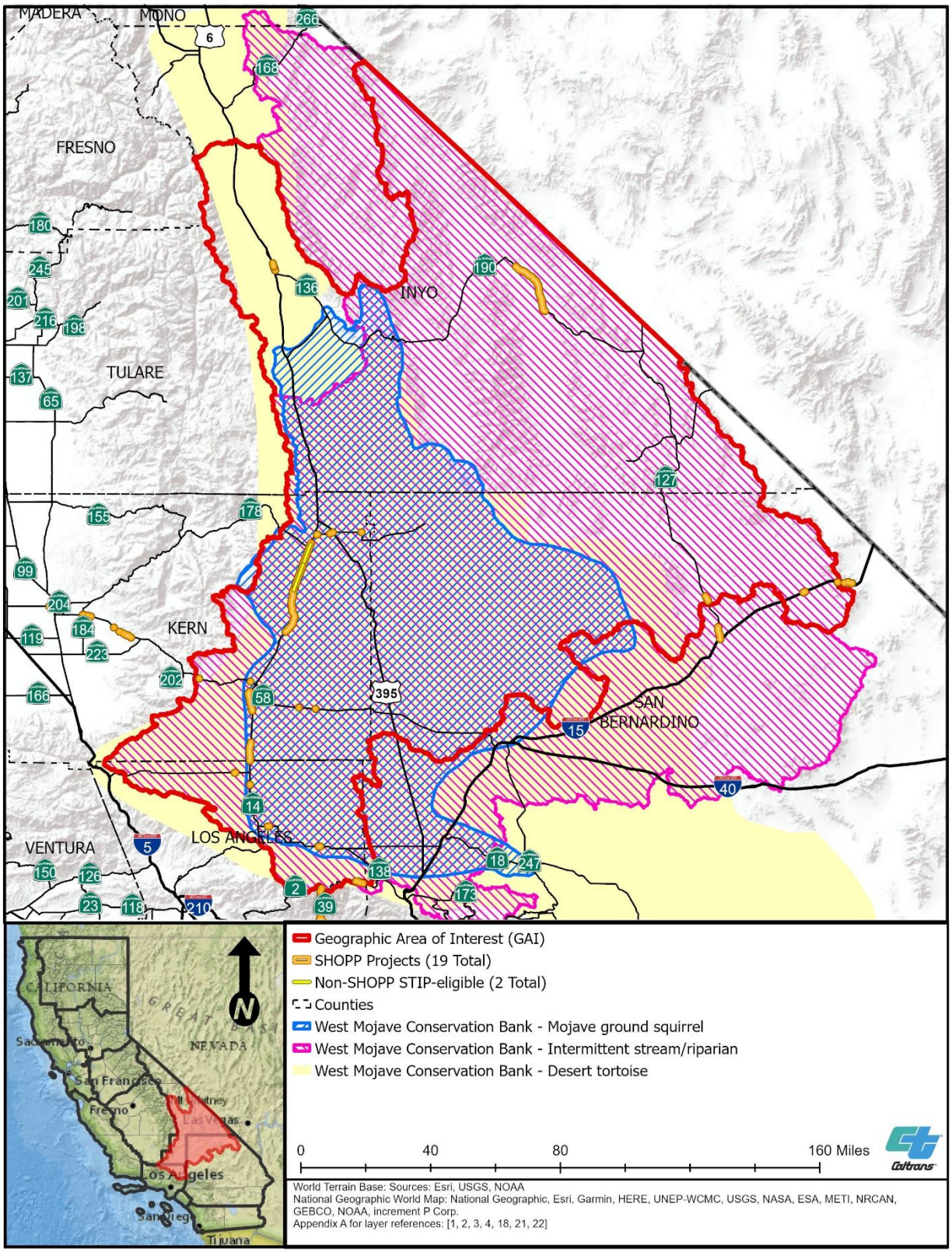


Figure E-7. Conservation and Mitigation Bank Service Areas – Part 7 (RAMNA New Figure)



In-lieu Fee Programs (RAMNA Section 4.4)

Compensatory mitigation can also be accomplished through participation in an in-lieu fee program, which is an agreement between a natural resource regulatory agency 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.

No in-lieu fee programs are currently established within the GAI.

RCISs and MCAs (RAMNA Section 4.5)

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 contains the elements described in FGC § 1856(b). Then, with respect to the State Highway System ("SHS"), a useful MCA would create credits that may be used as compensatory mitigation to offset impacts identified under the CESA and the Lake and Streambed Alteration Program.

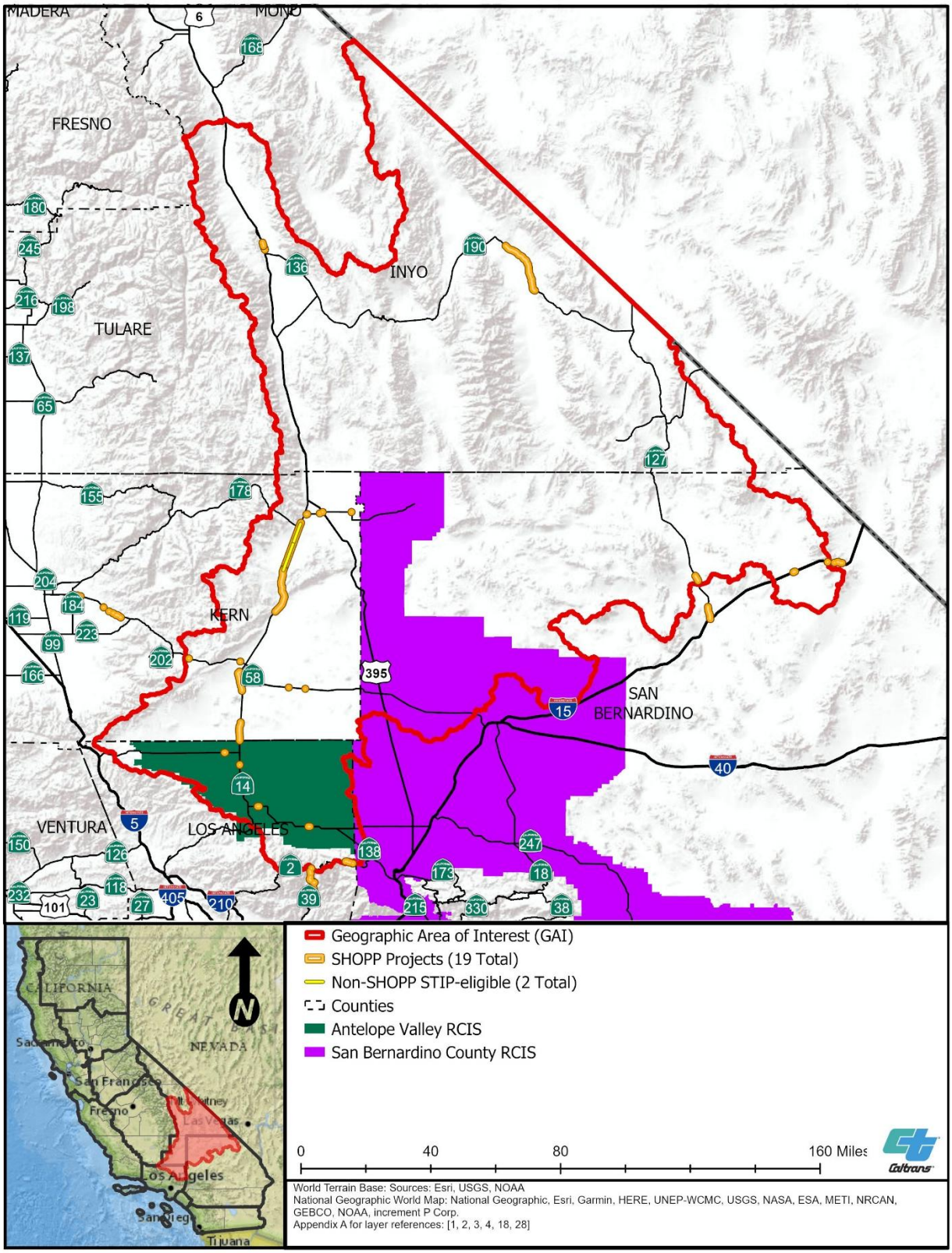
An MCA has numerous required elements, many of which parallel the requirements of a mitigation bank. These required elements can be found in FGC § 1856, and additional guidance is available in *Regional Conservation Investment Strategies Program Guidelines* (CDFW 2023). It is important to note that MCAs are not permits such as HCPs and NCCPs. MCA advance mitigation credits are analogous to conservation and mitigation bank credits. In other words, unlike an HCP and NCCP, RCISs and MCAs do not result in the issuance of incidental take permits for covered activities.

RCISs (RAMNA Subsection 4.5.1)

Caltrans identified the following RCISs with service areas that overlap part of the GAI (Figure E-8):

- Antelope Valley RCIS
- San Bernardino County RCIS

Figure E-8. RCIS Areas in the GAI (RAMNA Figure 4-5)



Antelope Valley RCIS

The Antelope Valley RCIS was drafted in October 2019 and approved on December 2, 2021 (ICF 2021). 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. All of the species of mitigation need identified in this RAMNA are also focal species in the RCIS, including desert tortoise, burrowing owl, Mohave ground squirrel, desert kit fox, and Joshua tree. Conservation goals and objectives included in the RCIS are focused 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 2021).

San Bernardino County RCIS

The San Bernardino RCIS was finalized in 2023 (Dudek 2023) and approved by CDFW in April 2024. San Bernardino County, the San Bernardino Council of Governments, and the Environmental Element Group (a wide-ranging stakeholder group that includes public agencies, nonprofit organizations, and private interests) are the proponents. The RCIS covers 3.6 million acres of western San Bernardino County and analyzes 52 focal species, including 17 plant and 35 wildlife species. All of the species of mitigation need identified in the RAMNA (Caltrans 2022) are also focal species in the RCIS, including desert tortoise, burrowing owl, Mohave ground squirrel, desert kit fox, and Joshua tree. Conservation goals and objectives are based on vegetation types that serve as habitats for the various focal species. The RCIS includes a landscape-level analysis of areas that are priorities for acquisition, preservation, and enhancement of focal species habitats. Caltrans and the San Bernardino County Transportation Authority are included in the Environmental Element Group, which is one of the proponents of the San Bernardino County RCIS (Dudek 2023).

Mitigation Credit Agreements (RAMNA Subsection 4.5.2)

As discussed previously, MCAs are developed when and where an RCIS is approved by CDFW, contains the elements described in FGC § 1856(b), and is consistent with the additional guidance available in *Regional Conservation Investment Strategies Program Guidelines* (CDFW 2023).[3]

Although no MCAs have been developed and no credits are available at this time, the Antelope Valley and San Bernardino County RCISs may provide opportunities for an entity to enter into an MCA with CDFW within the RCIS areas. Once the CESA and/or the

[3] https://wildlife.ca.gov/Conservation/Planning/Regional-Conservation

Lake and Streambed Alteration Program MCA credits are available, they may be eligible to be used to offset transportation project impacts.

Wildlife Crossing and Aquatic Corridor Enhancements

In 2022, FGC § 1955 et seq. authorized CDFW to approve compensatory mitigation credits for a "wildlife connectivity action" through its banking or RCIS programs. Therefore, when wildlife crossings and aquatic corridor enhancements improve the permeability of the SHS, through a BEI or MCA developed under an RCIS, CDFW is authorized to recognize CESA and Lake and Streambed Alteration credits for construction made separate and distinct from a specific transportation project. CDFW's Wildlife Connectivity Advance Mitigation Guidelines have been finalized and are available at: https://wildlife.ca.gov/Conservation/Planning/Connectivity.

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Caltrans (California Department of Transportation). 2022. *Six Northern Mojave Sub-basins and the Owens Lake Sub-basin within California Regional Advance Mitigation Needs Assessment.* Version 1.0. March. https://dot.ca.gov/programs/environmental-analysis/biology/advancemitigation.

Caltrans (California Department of Transportation), CDFW (California Department of Fish and Wildlife), SWRCB (State Water Resources Control Board), Corps (U.S. Army Corps of Engineers Los Angeles District, Sacramento District, and San Francisco District), EPA (U.S. Environmental Protection Agency), FWS (U.S. Fish and Wildlife Service), NMFS (National Marine Fisheries Service), and California State Coastal Commission. 2020. *Master Process Agreement for Planning and Developing Advance Mitigation Throughout California for the California Department of Transportation*. Signed January 24.

CDFW (California Department of Fish and Wildlife). 2020. Comments on RAMNA: Mojave Desert Section. Personal communication from A. Amacher. Habitat Conservation Planning Branch, California Department of Fish and Wildlife. May 13.

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Dudek. 2023. "San Bernardino County Regional Conservation Investment Strategy." Prepared for San Bernardino Council of Governments. October. https://storymaps.arcgis.com/stories/ca6c8dcf5e1241a98567a42568a69d3a.

ICF. 2021. "Antelope Valley Regional Conservation Investment Strategy." November. (ICF 313.19) San Diego, California. Prepared for Desert Mountains Conservation Authority, Quartz Hill, California. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=197234.