SINGLE-FAMILY RESIDENTIAL HAULED WATER INITIATIVE FOR NEW DEVELOPMENT

DRAFT ENVIRONMENTAL IMPACT REPORT

Volume IV

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Appendix G

Aesthetics Technical Report

SINGLE-FAMILY RESIDENTIAL HAULED WATER INITIATIVE FOR NEW DEVELOPMENT

AESTHETICS TECHNICAL REPORT

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SECTION 1.0
INTRODUCTION

1.1 PURPOSE AND SCOPE

This Aesthetics Technical Report was prepared by Sapphos Environmental, Inc. for the Hauled Water Task Force (Task Force) to provide the characterization of baseline visual resources and visualization of the proposed Single-Family Residential Hauled Water Initiative for New Development (proposed initiative) that will serve as the basis for analyzing the potential impacts to scenic vistas, scenic highways, and visual character or visual quality. Acting in its capacity as a lead agency under the California Environmental Quality Act (CEQA), the County of Los Angeles would need to determine the potential for the proposed initiative to result in significant impacts, consider mitigation measures and alternatives capable of avoiding significant impacts, and take the environmental effects of the proposed initiative into consideration as part of its decision-making process. The visibility of the subject parcels of the proposed initiative from scenic vistas and scenic highways, as well as the visual character and quality at the proposed initiative study area, were evaluated using geographic information system (GIS) viewshed analysis, aerial imagery, and Google Earth Street View and Ground View imagery to determine the extent of proposed initiative impacts.

This Aesthetics Technical Report provides baseline data to serve as evidence of existing conditions upon which the required evaluation of proposed initiative and proposed alternative impacts and the feasibility of mitigation measures in relation to aesthetics can be made. This technical study identifies and evaluates key scenic resources in the proposed initiative study area and determines the degree of visual impacts that could occur from the proposed initiative on the existing landscape and built environment.

1.2 TERMS AND CONCEPTS

The following terms and concepts are used to describe and assess the aesthetics setting and impacts from the proposed initiative:

Agricultural Land Use Pattern: Agricultural areas are characterized by production of crops, raising of animals, and small-scale sale of products grown on the property. Title 22 (Planning and Zoning) of the Los Angeles County Code establishes agricultural zones as areas where crop production, grazing, and low-density single-family residential uses are permitted.[1] Agricultural areas can overlap with rural areas, as agricultural activities are often permitted in rural areas.

Background: Over 15 miles away from viewer/viewpoint.

Contrast: The opposition or unlikeness of different forms, lines, colors, or textures in a landscape.

Designated Open Space: The County of Los Angeles General Plan has established an Open Space Resource Areas designation for public and private lands and waters that are preserved in perpetuity or for long-term open space and recreational uses. Existing open spaces in the unincorporated areas

[1] Los Angeles County Department of Regional Planning. Zoning Ordinance Summary – Agricultural Zones. Available at: http://planning.lacounty.gov/luz/summary/category/agricultural_zones/

include County parks and beaches, conservancy lands, state parklands, and federal lands. Open spaces can also include deed-restricted open space parcels and easements.[2]

Foreground: Less than five miles away from viewer/viewpoint.

Glare: Perceived glare is the unwanted and potentially objectionable sensation as observed by a person looking directly into the light source (e.g., the sun, the sun's reflection, automobile headlights, or other light fixtures). Reflective surfaces on existing buildings, car windshields, etc., can expose people and property to varying levels of glare.

Middleground: Between five and 15 miles away from viewer/viewpoint.

Rural Land Use Pattern: The County of Los Angeles General Plan defines rural land as low-density residential land with a permitted maximum density range of one dwelling per acre to one dwelling unit per 40 acres, or non-residential land with a maximum floor-area-ratio of 0.5, with the intended land uses of single-family residences, equestrian and animal use, and agricultural and related activities.[3]

Scenic Resources: Significant visual resources identified by local planning documents that can be maintained and enhanced to promote a positive image in the community, such as natural open spaces, topographic formations, and landscapes that contribute to a high level of visual quality. Natural landforms and landscapes are often established as scenic resources, such as lakes, rivers and streams, mountain meadows, and oak woodlands. However, scenic resources can also include man-made open spaces and the built environment, such as parks, trails, nature preserves, sculpture gardens, and similar features.

State-Designated Scenic Highway: The State Scenic Highway Program was created in 1963 to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

Suburban Land Use Pattern: A suburb is a residential area or a mixed-use area located at the outskirts of a city or large town, either existing as part of a city or urban area or as a separate residential community within commuting distance of a city.[4] The American English Dictionary[5] defines a suburb as an area outside a city but near it, and consisting mainly of homes, sometimes also having stores and small businesses. Suburban areas typically have low to moderate residential density.

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[2] Los Angeles County Department of Regional Planning. January 2014. Los Angeles County General Plan: Public Review Draft. "Chapter 6: Land Use Element." Available at: http://planning.lacounty.gov/assets/upl/project/gp_2035_Chapter6_2014.pdf

[3] Los Angeles County Department of Regional Planning. January 2014. Los Angeles County General Plan: Public Review Draft. "Chapter 6: Land Use Element." Available at: http://planning.lacounty.gov/assets/upl/project/gp_2035_Chapter6_2014.pdf

[4] Meriam-Webster. Accessed 1 June 2015. Suburb. Available at: http://www.merriam-webster.com/dictionary/suburb

[5] Cambridge University Press. 2015. American English Dictionary. "Suburb." Available online at: http://dictionary.cambridge.org/us/dictionary/american-english/suburb

Urban Land Use Pattern: The American English Dictionary[6] defines urban as of or in a city or town, and a city as a place where many people live, with many houses, businesses, etc., and which is bigger than a town. Urban areas are typically characterized by a high density of development, including single- and multi-family homes and city centers.

Viewshed: The landscape that can be directly seen under favorable atmospheric conditions, from a viewpoint or along a transportation corridor.

Visual (sensitive) receptor: Any scenic vista, scenic highway, residence, or public recreational area located within the proposed project / proposed action viewshed that provides people with views of a site.

[6] Cambridge University Press. 2015. American English Dictionary. "Urban." Available online at: http://dictionary.cambridge.org/us/dictionary/american-english/urban

SECTION 2.0
PROJECT DESCRIPTION

2.1 STUDY AREA LOCATION

The area that would be subject to the proposed initiative consists of approximately 42,867 parcels in the unincorporated territory of northern Los Angeles County (see Figure 2.1-1, *Regional Vicinity Map*, and Figure 2.1-2, *Proposed Initiative Study Area Map*, at the end of this section).[1] The combined proposed initiative study area consists of approximately 340,461 acres, or approximately 532 square miles.

Although this is a Countywide initiative, the parcels that would potentially be affected by the proposed initiative are located entirely within the Fifth Supervisorial District in the northern one-third of the County, including areas located in the San Gabriel Mountains and in the Antelope Valley; areas located northeast of the City of Santa Clarita, north and south of California State Route 14; and areas that are southwest of the City of Palmdale in the communities of Agua Dulce and Acton. The subject parcels have been categorized into seven subareas:

1. **Lake Hughes/Gorman/West of Lancaster:** The Lake Hughes/Gorman/West of Lancaster subarea is located in an area generally located west of State Highway 14, adjacent to the northwestern edge of the incorporated City of Lancaster, and north of the Angeles National Forest; however, there are also several National Forest inholding parcels located along San Francisquito Canyon and Lake Hughes Road. This subarea consists of 15,166 parcels and encompasses approximately 195.4 square miles (125,041.4 acres). State Highway 138 bisects the subarea in an east-west direction, and State Highway 14 forms the eastern boundary of this subarea. The topography of this subarea is generally flat, except for the parcels located along San Francisquito Canyon and Lake Hughes Road, which are located in mountainous terrain. The highest elevation within this subarea is approximately 4,768 feet above mean sea level (MSL), and the lowest elevation is approximately 2,315 feet above MSL. The main existing land uses in this subarea are agriculture and rural residential uses. The Angeles National Forest surrounds 39 private inholding subject parcels within this subarea that have been designated in the 2005 update to the Angeles National Forest Land Management Plan as Non-Forest System Land Ownership and are therefore are not subject to the national land management plan.[2,3] Two Significant Ecological Areas (SEAs) intersect with the subject parcels within this subarea that have been adopted with the 2015 Antelope Valley Area Plan and are subject to the provisions of the 1982 Hillside Management and Significant Ecological Areas Ordinance: Joshua Tree Woodlands (SEA #10) and San

[1] Assessor's Parcels Numbers for the referenced parcels are on file at the Los Angeles County Department of Regional Planning.

[2] United States Department of Agriculture Forest Service, Angeles National Forest. April 2006. Record of Decision, Angeles National Forest Land Management Plan. Available online at: http://www.fs.usda.gov/detail/angeles/landmanagement/planning/?cid=stelprdb5324056#I

[3] United States Department of Agriculture Forest Service. September 2005. Final Land Management Plan Alternative 4a Selected: Land Use Zones [Map]. Available online at: http://www.fs.usda.gov/Internet/FSE_MEDIA/stelprdb5311720.pdf

Andreas (proposed SEA #17).[4] Los Angeles County has designated significant ridgelines to be preserved and protected pursuant to policies of the Conservation and Natural Resources Element of the Los Angeles County General Plan, located across the southern parcels of the subarea in the Andreas Rift Zone of the San Gabriel Mountains. The Pacific Crest Trail (PCT), which was designated as a National Scenic Trail under the 1968 National Trails System Act, passes through the western side of the subarea from Kern County south into Angeles National Forest.[5] The established communities of Del Sur, Gorman, Lake Hughes, Leona Valley, and Quartz Hill are located in this subarea. Sensitive users within this subarea include passive recreation users along the PCT and within the Angeles National Forest, residents within the rural communities listed above, motorists along County-designated scenic drives, and passive recreation users that annually visit the Antelope Valley California Poppy Reserve, which intersects with 20 of the subject parcels within this subarea.

2. **Lancaster Northeast:** The Lancaster Northeast subarea is located in an area generally east of State Highway 14 and north of East Avenue J. This subarea consists of 6,794 parcels and encompasses approximately 55.2 square miles (35,324.9 acres). State Highway 14 forms the western boundary and East Avenue J forms the southern boundary of this subarea. Edwards Air Force Base is located north of the study area. This subarea is adjacent to the northeastern edge of the incorporated City of Lancaster. The topography of this subarea is generally flat; the highest elevation within this subarea is approximately 2,688 feet above MSL, and the lowest elevation is approximately 2,298 feet above MSL. The predominant existing land uses in this subarea consist of agricultural, recreation, and rural residential uses. One SEA intersects with the subject parcels within this subarea: Antelope Valley (SEA #3).[6] The established communities of Hi Vista and a small portion of Del Sur are located in this subarea. Sensitive users within this subarea include residents within the rural communities listed above and motorists along County-designated scenic drives.

3. **Antelope Valley Northeast:** The Antelope Valley Northeast subarea is located in an area generally located north of East Avenue E and east of 165th Street East in the far northeastern portion of Los Angeles County. This subarea consists of 1,938 parcels and encompasses approximately 22.7 square miles (14,528.2 acres). This subarea is relatively isolated and is located in the northeastern area of Los Angeles County. This subarea is located approximately 10.9 miles northeast of the incorporated City of Palmdale and approximately 11.3 miles northeast of the incorporated City of Lancaster. The topography of this subarea is mainly flat, with few hills to the north. The highest elevation within this subarea is approximately 3,296 feet above MSL, and the lowest elevation is approximately 2,547 feet above MSL. Presently, the entirety of this subarea is vacant. One SEA intersects with the subject parcels within

[4] Los Angeles County Department of Regional Planning. February 2015. Figure 9.3: Significant Ecological Areas and Coastal Resource Areas Policy Map. Available at: http://planning.lacounty.gov/assets/upl/project/tnc_significant_ecological_areas_UPD.pdf

[5] National Park Service. Website last modified 12 July 2012. The National Trails System Act. Also found in United States Code, Volume 16, Sections 1241-1251. Available online at: http://www.nps.gov/nts/legislation.html

[6] Los Angeles County Department of Regional Planning. February 2015. Figure 9.3: Significant Ecological Areas and Coastal Resource Areas Policy Map. Available at: http://planning.lacounty.gov/assets/upl/project/tnc_significant_ecological_areas_UPD.pdf

this subarea: Antelope Valley (SEA #3).[7] A small portion of the established community of Hi Vista is located in this subarea. Sensitive users within this subarea include motorists along nearby County-designated scenic drives.

4. **Lake Los Angeles/Llano/Valyermo/Littlerock:** The Lake Los Angeles/Llano/Valyermo/Littlerock subarea is located in an area generally south of East Avenue J, east of 47th Street East. This subarea consists of 14,822 parcels and encompasses approximately 168.8 square miles (108,067.3 acres). Avenue J forms the northern boundary, the Cities of Palmdale and Lancaster form the western boundary, and the San Bernardino County line forms the eastern boundary of this subarea. This subarea is adjacent to the eastern edge of the incorporated City of Palmdale. The topography of this subarea is generally flat, except for several parcels that are located on slopes of the San Gabriel Mountains to the south. The highest elevation within this subarea is approximately 5,626 feet above MSL, and the lowest elevation is approximately 2,443 feet above MSL. Predominant existing land uses within this subarea consist of vacant land, single-family residential subdivisions, agricultural uses, and scattered rural residential uses. The Angeles National Forest forms the southern border of this subarea. One SEA intersects with the subject parcels within this subarea: Antelope Valley (SEA #3).[8] The established communities of Llano, Valyermo, Pearblossom, Littlerock, Lake Los Angeles and portions of Hi Vista are located within this subarea. Sensitive users within this subarea include passive recreation users traveling to nearby parks such as Saddleback Butte State Park, residents within the rural communities listed above, and motorists along County-designated scenic drives.

5. **Acton:** The Acton subarea is located in an area generally east of Hubbard Road and West of 47th Street East. This subarea consists of 1,246 parcels and encompasses approximately 28.2 square miles (18,067.2 acres). The Angeles National Forest is located to the north and south of the subarea. This subarea is adjacent to the southwestern edge of the incorporated City of Palmdale. The topography of the subarea is mainly mountainous and hilly. The highest elevation within this subarea is approximately 4,900 feet above MSL, and the lowest elevation is approximately 2,290 feet above MSL. Predominant existing land uses consist of rural residential uses, single-family residential uses, and scattered agricultural uses. The Angeles National Forest forms the southern border of this subarea. Los Angeles County-designated significant ridgelines are located to the west of the subarea. One SEA intersects with the subject parcels within this subarea: Santa Clara River (SEA #20).[9] The established communities of Acton, South Antelope Valley, and portions of Agua Dulce are located in this subarea.

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[7] Los Angeles County Department of Regional Planning. February 2015. Figure 9.3: Significant Ecological Areas and Coastal Resource Areas Policy Map. Available at: http://planning.lacounty.gov/assets/upl/project/tnc_significant_ecological_areas_UPD.pdf

[8] Los Angeles County Department of Regional Planning. February 2015. Figure 9.3: Significant Ecological Areas and Coastal Resource Areas Policy Map. Available at: http://planning.lacounty.gov/assets/upl/project/tnc_significant_ecological_areas_UPD.pdf

[9] Los Angeles County Department of Regional Planning. February 2015. Figure 9.3: Significant Ecological Areas and Coastal Resource Areas Policy Map. Available at: http://planning.lacounty.gov/assets/upl/project/tnc_significant_ecological_areas_UPD.pdf

6. **Castaic/Santa Clarita/Agua Dulce:** The Castaic/Santa Clarita/Agua Dulce subarea is located generally west of Hubbard Road and north of the 210 Freeway excluding Kagel Canyon. This subarea consists of 2,243 parcels and encompasses approximately 55.2 square miles (35,340.2 acres). This subarea is adjacent to the northern, western, and southern edges of the incorporated City of Santa Clarita and the northern edge of the incorporated City of Los Angeles. The topography of this subarea is generally mountainous. The highest elevation within this subarea is approximately 4,430 feet above MSL, and the lowest elevation is approximately 994 feet above MSL. Predominant existing land uses consist of rural residential, single-family residential, and scattered agricultural. The Angeles National Forest forms the northern and southern borders of this subarea. Four SEAs intersect with the subject parcels within this subarea: Cruzan Mesa Vernal Pools (SEA #5), Santa Clara River (SEA #20), Santa Felicia (SEA #21), and Santa Susana Mountains/Simi Hills (SEA #23).[10] County-designated significant ridgelines are located throughout the subarea.[11] The PCT passes through the eastern portion of this subarea between the western and eastern areas of the Angeles National Forest.[12] The established communities of Agua Dulce, Castaic, Val Verde, Stevenson Ranch, Newhall, Canyon Country, and portions of Acton are located within this subarea. Sensitive users within this subarea include active recreation users at Castaic Lake, passive recreation users within Pico Canyon and Santa Clarita Woodlands Park, residents within the rural and suburban communities listed above, and motorists along County-designated scenic drives.

7. **East San Gabriel Mountains:** The East San Gabriel Mountains subarea is the smallest of the project subareas and consists of 658 mainly private inholding parcels within the Angeles National Forest. This subarea is located within the eastern San Gabriel Mountain range and is generally located east of State Highway 14, north of the 210 Freeway, south of the Pearblossom Highway, and west of the San Bernardino County line. This subarea encompasses approximately 6.4 square miles (4092.3 acres). The topography of the subarea is very mountainous. The highest elevation within this subarea is approximately 7,409 feet above MSL, and the lowest elevation is approximately 862 feet above MSL. Predominant existing land uses consist of national forest recreation, open space, and resource uses; widely scattered residential uses exist in places such as Wrightwood and Mt. Baldy Village. Communication infrastructure uses are located on Mount Wilson. The Angeles National Forest surrounds all 658 private inholding parcels within this subarea, which have been designated in the 2005 update to the Angeles National Forest Land Management Plan as Non-Forest System Land Ownership and therefore are not subject to the national land management plan.[13,14] Five SEAs (approximately

[10] Los Angeles County Department of Regional Planning. February 2015. Figure 9.3: Significant Ecological Areas and Coastal Resource Areas Policy Map. Available at: http://planning.lacounty.gov/assets/upl/project/tnc_significant_ecological_areas_UPD.pdf

[11] Los Angeles County, Santa Clarita Valley Area Plan. 2012. Available online at: http://planning.lacounty.gov/assets/upl/data/pd_santa-clarita-area-plan-2012.pdf

[12] National Park Service. Website last modified 12 July 2012. The National Trails System Act. Also found in United States Code, Volume 16, Sections 1241-1251. Available online at: http://www.nps.gov/nts/legislation.html

[13] United States Department of Agriculture Forest Service, Angeles National Forest. April 2006. Record of Decision, Angeles National Forest Land Management Plan. Available online at: http://www.fs.usda.gov/detail/angeles/landmanagement/planning/?cid=stelprdb5324056#l.

561 acres) Antelope Valley (SEA #3), Santa Clara River (SEA #20), San Dimas Canyon/San Antonio Wash (SEA #18), Altadena Foothills and Arroyos (SEA #2), and San Gabriel Canyon (SEA #19) intersect this subarea[15]. The established communities of Angeles National Forest, Altadena, Sylmar, and portions of Acton, Valyermo, Pearblossom, Llano, and Littlerock are located in this subarea. Sensitive users within this subarea include passive and active recreation users along the PCT and within the Angeles National Forest, residents within the rural communities listed above, and motorists along County-designated scenic drives and state scenic highways.

The proposed initiative study area is located within 53 U.S. Geological Survey (USGS) 7.5-minute quadrangle maps (see Figure 2.1-3, *USGS 7.5-Minute Quadrangle Index*, at the end of this section). There is a 6,547-foot elevation difference between the highest and the lowest area of the proposed initiative study area, which ranges from 7,409 feet above MSL in the East San Gabriel Mountains subarea to 862 feet above MSL also in the East San Gabriel Mountains subarea.

2.2 PROPOSED INITIATIVE

The Los Angeles County Board of Supervisors has directed the preparation of a proposed ordinance that would allow hauled water as the primary source of potable water for new development of single-family residences on existing vacant legal lots, or lots that are eligible for a certificate of compliance, where the property owner has demonstrated that there is no other feasible source of private or municipal potable water, or capability of developing an on-site well to provide potable water to the property, and only if the property lies outside of the boundaries of the local private and municipal water districts, and is not eligible for service by the nearest public-community water purveyor. The proposed initiative is proposed for parcels that are larger than 2,000 square feet in size, with slopes under 50 percent (26.6 degrees). The term vacant is used as identified by the County Assessor.

To determine which areas would be subject to the proposed initiative, the Los Angeles County Department of Regional Planning developed a geographic information system (GIS) suitability model in 2012 based on five criteria defined by the Hauled Water Task Force:

- Parcels located in the unincorporated territory of Los Angeles County
- Vacant parcels
- Parcels located in areas where there is no designated water purveyor
- Zoning and General Plan designation that allow for development of a single-family residence
- Parcel size over 2,000 square feet with slopes under 50 percent (26.6 degrees)

The model was re-run in 2015 to incorporate the recently adopted Antelope Valley Town and Country Plan and General Plan amendment.[16]

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[14] United States Department of Agriculture Forest Service. September 2005. Final Land Management Plan Alternative 4a Selected: Land Use Zones [Map]. Available online at: http://www.fs.usda.gov/Internet/FSE_MEDIA/stelprdb5311720.pdf

[15] Los Angeles County Department of Regional Planning. February 2015. Figure 9.3: Significant Ecological Areas and Coastal Resource Areas Policy Map. Available at: http://planning.lacounty.gov/assets/upl/project/tnc_significant_ecological_areas_UPD.pdf

[16] Los Angeles County Department of Regional Planning. November 2014. *Draft Antelope Valley Area Plan – Town and Country*. Available online at: http://planning.lacounty.gov/assets/upl/project/tnc_draft-20141103.pdf

2.2.1 Construction Scenario

The proposed initiative would not authorize construction of single-family residential development per se. It simply provides for the use of hauled water as an allowable source of potable water during the building permit application process where the property is not located within a public or private water district and where potable water for domestic and fire protection requirements cannot be provided by an on-site groundwater well. To determine historical development trends, 17 years of building permit application data from 1997 through 2014 were reviewed to determine the average number of building permits issued per year for single-family residential development not associated with subdivision development. An anticipated growth factor of 25 percent has been applied based on Southern California Association of Governments (SCAG) projections for the unincorporated area of Los Angeles County from 2008 to 2035.[17]

The reasonable worst-case scenario assumes the annual average rate of issuance of building permits over the 20-year 2015 to 2035 planning horizon would be approximately 32 per year in the Santa Clarita Valley and approximately 151 per year in the Antelope Valley for a total of 184 permits per year for both areas. The total anticipated building permits over the 20-year 2015 to 2035 planning horizon would be approximately 3,680. As a result, it is anticipated that the disturbance area for the single-family residences constructed on these parcels would be approximately 5,299 acres (Table 2.2.1-1, *Estimated Number of Parcels to Be Developed and Disturbance Area in the Unincorporated Antelope Valley and Santa Clarita Valley, 2015–2035*).

TABLE 2.2.1-1
ESTIMATED NUMBER OF PARCELS TO BE DEVELOPED AND DISTURBANCE AREA IN THE UNINCORPORATED ANTELOPE VALLEY AND SANTA CLARITA VALLEY, 2015–2035*

Estimated Annual Santa Clarita Valley Building Permits	Estimated Annual Antelope Valley Building Permits	Total Estimated Annual Building Permits** in Unincorporated Santa Clarita and Antelope Valleys[1]	Total Estimated Building Permits over 20-Year Planning Horizon	Total Estimated Disturbance Area over 20-Year Planning Horizon (acres)***
32	151	184	3,680	5,299

NOTES:
* Includes a 25 percent growth factor based on SCAG population projections.[2]
** Including mobile homes.
*** Based on an average parcel size of four acres with 36 percent disturbance.[3]
SOURCE:
[1] Los Angeles County Department of Public Works, Building and Safety Division. Electronic Building Permit Data from January 1, 1997 to June 30, 2014.
[2] Southern California Association of Governments. 12 March 2012. 2012 Adopted RTP Growth Forecast. Available online at: http://www.scag.ca.gov/Documents/2012AdoptedGrowthForecastPDF.pdf
[3] Sapphos Environmental, Inc. 27 August 2014. Memorandum for the Record. Subject: "Analysis of Residential Development and Existing Disturbance for Parcels within or near the Proposed Hauled Water Initiative Study Area." Prepared for: Los Angeles County Hauled Water Task Force.

[17] Southern California Association of Governments. 12 March 2012. 2012 Adopted RTP Growth Forecast. Available online at: http://www.scag.ca.gov/Documents/2012AdoptedGrowthForecastPDF.pdf

2.3 PROPOSED INITIATIVE ALTERNATIVES

This technical report considers the reasonable range of alternatives to the proposed initiative that would be capable of meeting most of the basic objectives or the proposed initiative, while avoiding or reducing the severity of significant impacts, that has been evaluated in the EIR. The EIR considers five Action alternatives that would reduce the number of parcels potentially eligible for use hauled water, thus reducing the anticipated total area of development eligible for the use of hauled water, and the No Initiative Alternative that are described below. As with the proposed initiative, the number of potentially eligible parcels is approximate, as building permit applicants would need to demonstrate that their parcels are not located within a water district, drill a well to test for adequate water availability and flow rate, and obtain a certificate of compliance before the parcels are officially determined eligible for hauled water under the proposed initiative or alternatives. A Certificate of Compliance (CC) is a recorded document certifying a parcel as complying with state and local land division laws.[18]

2.3.1 Alternative 1

Hauled Water Initiative for Parcels That Are 0.5 Acres or Greater in Size

This alternative, which would not include parcels that are smaller than 0.5 net acres as eligible parcels for the initiative, would decrease the total number of potentially eligible parcels by approximately 2,056 parcels (by approximately 357.5 acres) throughout the Proposed Initiative Study Area, for an approximate total of 40,811 potentially eligible parcels (approximately 340,103.9 acres). This alternative would only reduce the number of eligible parcels by 4.8 percent, scattered throughout northern Los Angeles County, a negligible difference in visual setting.

2.3.2 Alternative 2

Hauled Water Initiative for Parcels That Are 2.5 Acres or Greater in Size

This alternative, which would not include parcels that are smaller than 2.5 net acres as eligible parcels for the initiative, would decrease the total number of potentially eligible parcels by 13,173 parcels (by approximately 21,429.4 acres) throughout the proposed initiative study area, for an approximate total of 29,694 potentially eligible parcels (approximately 319,032.06 acres). This alternative would reduce the number of eligible parcels by 30.7 percent, scattered throughout northern Los Angeles County, which is characterized by a very similar setting to the study area of the proposed initiative.

2.3.3 Alternative 3

Hauled Water Initiative for Parcels That Are Located within 12-Minute Response Time of a Fire Department Emergency Response Unit

This alternative would not include parcels that located farther than the maximum acceptable 12-minute fire emergency response time from a fire station as eligible parcels for the proposed initiative, based on the conservative assumption that the average speed of a fire engine would be no more than 50 miles per hour pursuant to the County's policy of fire trucks traveling no more

[18] Los Angeles County Department of Regional Planning. Accessed 15 June 2015. *Applications and Forms*. Available at: http://planning.lacounty.gov/apps

than 10 miles above the speed limit during emergency response and slowing down at intersections for safety purposes. This alternative would decrease the total number of potentially eligible parcels by 12,262 parcels (by approximately 116,545.0 acres), for an approximate total of 30,605 potentially eligible parcels (approximately 223,916.4 acres). This alternative would reduce the number of eligible parcels by 28.6 percent, near the rural western side of the Lake Hughes/Gorman/West of Lancaster subarea (including parcels surrounding the PCT and along four County-designated scenic drives); near Castaic Lake, Pico Canyon, and Santa Clarita Woodlands Park at the northwestern and southwestern edges of the Castaic/Santa Clarita/Agua Dulce subarea; on the northeastern portion of the Lancaster Northeast subarea; within the middle of the Angeles National Forest in the East San Gabriel Mountains subarea (including the subject parcels within the State Route 2 (SR-2) and SR-39 scenic corridors); on the southeastern portion of the Lake Los Angeles/Llano/Valyermo/Littlerock subarea; and the entire Antelope Valley Northeast subarea. The resulting subject parcels of this alternative are less rural in character and farther from several designated scenic resources, such as PCT, Angeles Crest Highway (SR-2), and woodlands within the Santa Clarita Valley.

2.3.4 Alternative 4

Hauled Water Initiative for Parcels Located within 200 Feet of an Existing Road

This alternative, which would not include parcels that are located farther than 200 feet from an existing road (and would therefore require more much grading to provide hauled water truck access to the parcels) as eligible parcels for the initiative, would decrease the total number of potentially eligible parcels by 18,904 parcels (by approximately 102,160.6 acres) for an approximate total of 23,963 potentially eligible parcels (approximately 238,300.8 acres). This alternative would reduce the number of eligible parcels by 44.1 percent, scattered throughout northern Los Angeles County, including parcels near Pico Canyon, Santa Clarita Woodlands Park, and Agua Dulce at the southwestern and southeastern edges of the Castaic/Santa Clarita/Agua Dulce subarea, as well as some of the parcels near the state-designated scenic Angeles Crest Highway (SR-2). As the resulting subject parcels are in proximity to existing roads, they are less rural in character.

2.3.5 Alternative 5

Hauled Water Initiative for Parcels That Are 2.5 Acres or Greater in Size, Located within 200 Feet of an Existing Road, Located within 12-Minute Response Time of a Fire Department Emergency Response Unit

This alternative, which would not include parcels smaller than 2.5 net acres in size, located farther than 200 feet from an existing road, and located outside the maximum acceptable 12-minute fire emergency response service area as eligible parcels for the proposed initiative, would decrease the total number of potentially eligible parcels by 31,866 parcels or 74% (by approximately 196,089.0 acres or 58%), for an approximate total of 11,001 potentially eligible parcels (approximately 144,372.5 acres). This alternative would reduce the number of eligible parcels by 74.3 percent, scattered throughout northern Los Angeles County, including several parcels in proximity to County-designated scenic drives (Lancaster Road, Pine Canyon Road, Three Points Road), PCT, Santa Clarita Valley Area Plan-designated scenic resources (Castaic Lake, Pico Canyon, Santa Clarita Woodland Park, scenic canyons, and State-designated and eligible scenic highways (SR-2, SR-39). By screening out parcels that are small in size, more remote, and less accessible to emergency response services, this alternative would preserve scenic open space surrounding State-

designated and County-designated scenic resources. Although the resulting eligible parcels are currently vacant, they are located in proximity to existing development generally characterized as suburban, rural residential, and rural agricultural communities.

2.3.6 Alternative 6

No Project Alternative

The No Project Alternative would involve no preparation or adoption of the proposed initiative. In accordance with the existing rules for approval of a building permit, any property that is not within the jurisdiction of a water purveyor and cannot meet the well test requirements for groundwater on the property will not be allowed to be built upon. No single-family residences would be permitted or constructed on properties that are not located within a water district or directly above an adequate groundwater source. No potable water would be hauled to properties, and no storage tanks or infrastructure would be constructed to support the regular delivery of hauled water to parcels in unincorporated Los Angeles County.

This alternative would require that the 42,867 of parcels that are located outside of a public or private water district to demonstrate that they have adequate access to groundwater, consistent the provisions of the County of Los Angeles Building Permit Application. In the worst-case scenario, 42,867 parcels where development of a single-family residence is an allowable use pursuant to the land use designation and the zoning, would potentially not be able to demonstrate a satisfactory source of potable water to allow issuance of a building permit.

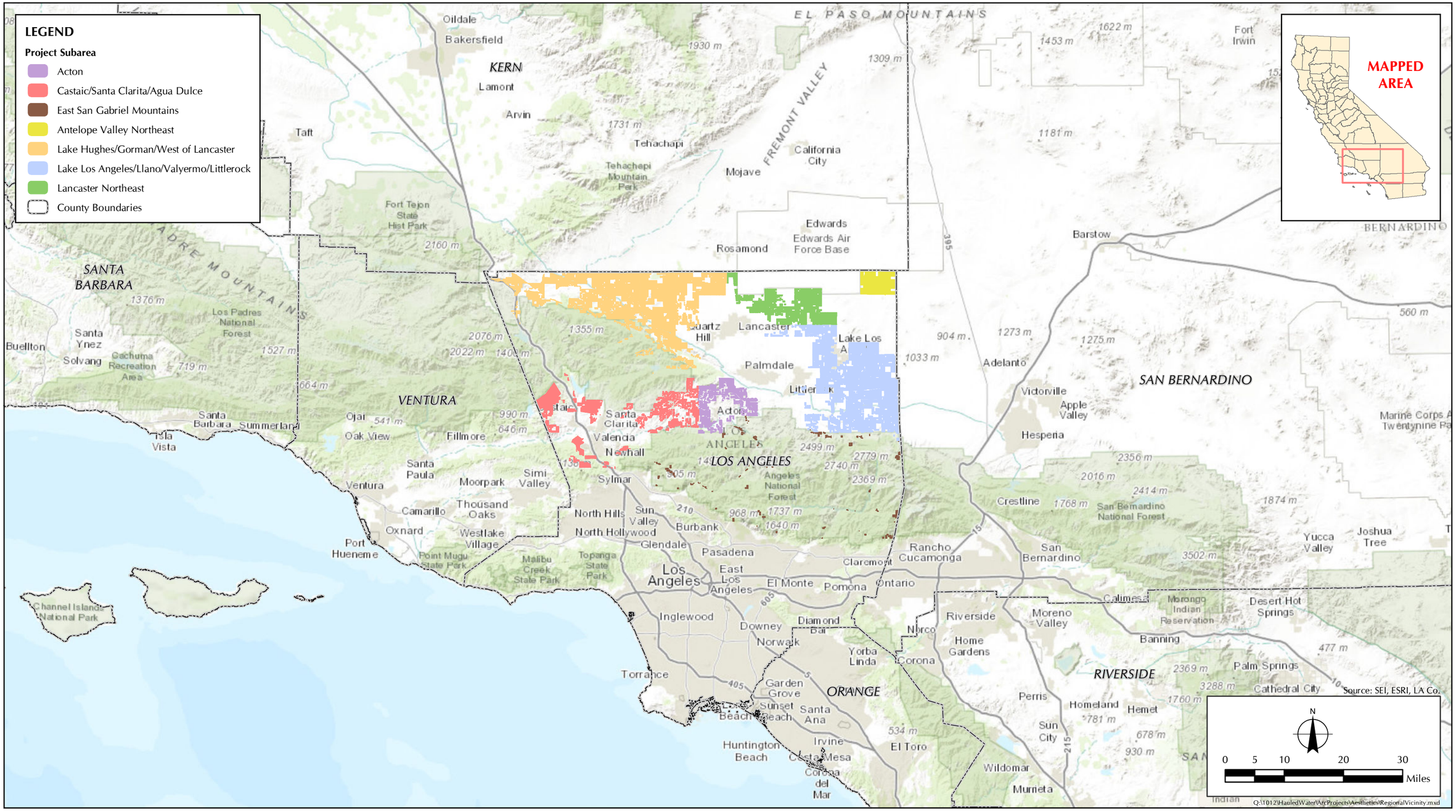

FIGURE 2.1-1

Regional Vicinity Map

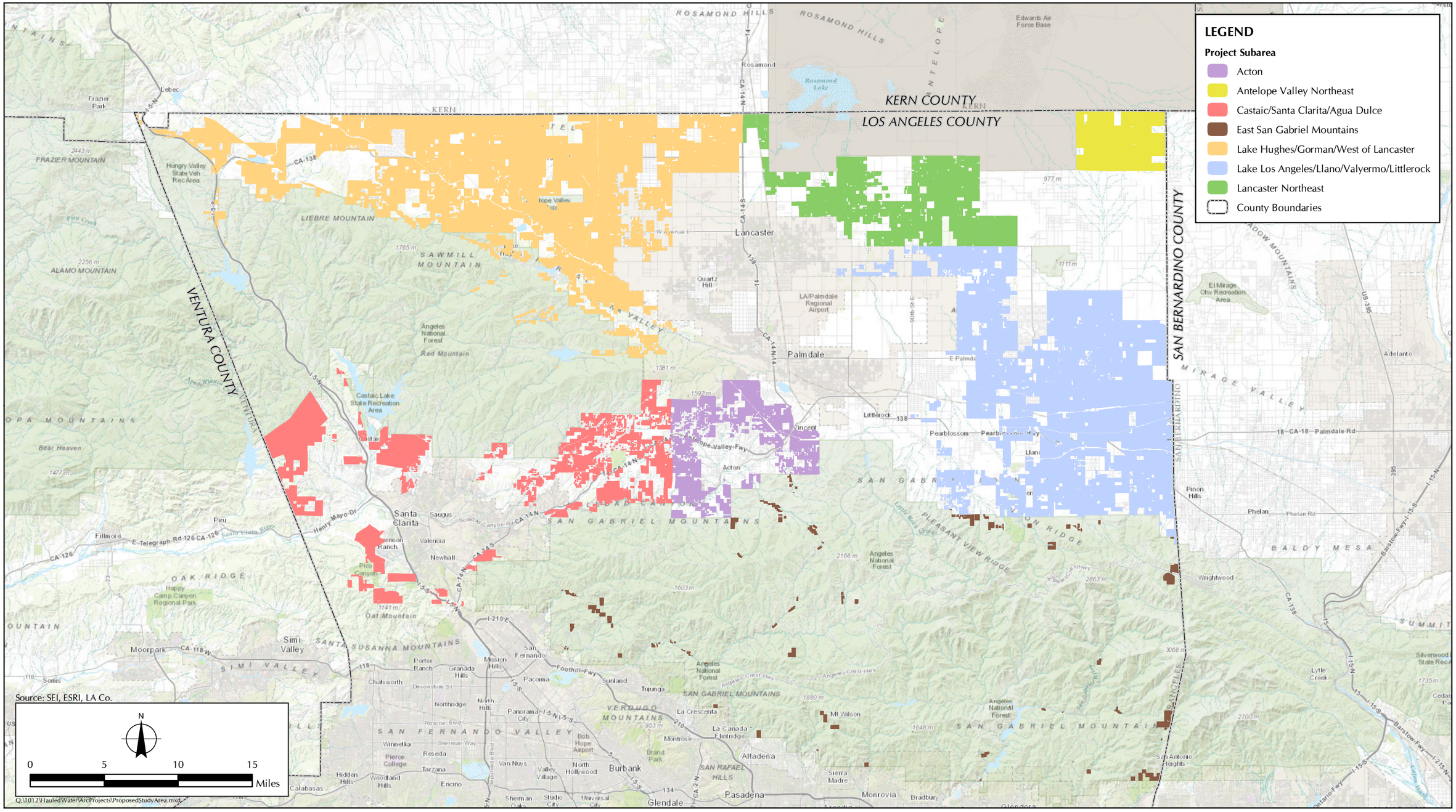

FIGURE 2.1-2

Proposed Initiative Study Area

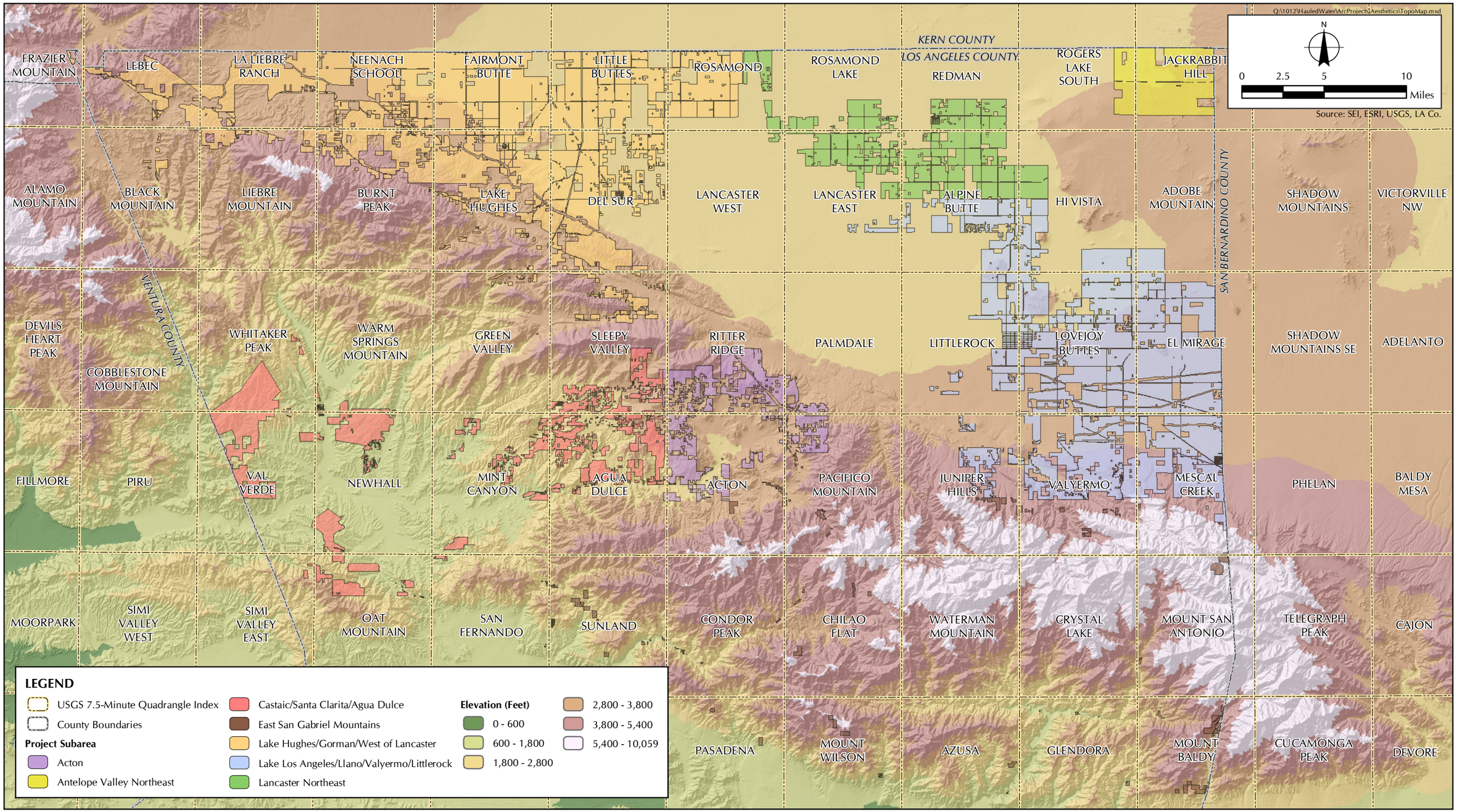

FIGURE 2.1-3

USGS 7.5-Minute Quadrangle Index

SECTION 3.0
REGULATORY FRAMEWORK

The following regulatory framework identifies the federal, state, and local statutes, ordinances, or policies that govern the conservation and protection of aesthetics/visual resources that will be considered by the County during the decision-making process for the proposed initiative.

3.1 FEDERAL

3.1.1 1968 National Trails System Act

The Pacific Crest Trail (PCT), a federally designated National Scenic Trail primarily administered by the U.S. Forest Service, passes through the western portion of the Lake Hughes/Gorman/West of Lancaster subarea and the eastern portion of the Castaic/Santa Clarita/Agua Dulce subarea. The PCT is managed pursuant to the 1968 National Trails System Act, which instituted a national system of recreation, scenic and historic trails, and standards to preserve the scenic value of these trails and authorized creation of the PCT as a National Scenic Trail.[1] National scenic trails, established in Section 5 of the Act, are designated extended trails (at least 100 miles in length) intended to provide maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass. Natural scenic trails may be located as to represent desert, marsh, grassland, mountain, canyon, river, forest, and other areas, as well as landforms which exhibit significant characteristics of the physiographic regions of the United States. Section 7(a)(2) of the 1968 Act establishes the relationship between the trail and the management of adjacent land:

> Development and management of each segment of the National Trails System shall be designed to harmonize with and complement any established multiple-use plans for the specific area in order to insure continued maximum benefits from the land.

The 1982 Pacific Crest National Scenic Trail Comprehensive Plan provides guidelines and criteria for design and location of the PCT.[2] Specifically, these guidelines state that the most desirable location for the PCT will avoid established highways, unattractive motor roads, mining areas, power and telephone lines, existing commercial and industrial developments, fences, and other features incompatible with the natural condition of the trail, and with its use for outdoor recreation. Where the trail encounters such developments, it should be located so as not to adversely affect, or conflict with, the purpose of the development. Where the trail passes through right-of-ways on private land, signs should notify the trail user where federal land ends and private land begins, and the limits of the right-of-way. Natural vegetation, topography, or natural plantings shall also be used, where possible, to screen objectionable features from the view of the trail user.

[1] National Park Service. Website last modified 12 July 2012. The National Trails System Act. Also found in United States Code, Volume 16, Sections 1241-1251. Available online at: http://www.nps.gov/nts/legislation.html

[2] USDA Forest Service, Pacific Northwest Region. January 1982. Comprehensive Management Plan for the Pacific Crest National Scenic Trail. Available online at: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5311111.pdf

3.2 STATE

3.2.1 California Scenic Highway Program, Sections 260 through 263[3]

The California Scenic Highway Program preserves and protects scenic highway corridors throughout the State of California from changes that would diminish their aesthetic value. The California Department of Transportation (Caltrans) designates scenic highway corridors and establishes those highways that are eligible for the program. The program was created in 1963 with the enactment of the State Scenic Highways Law. The Street and Highway Code includes a list of those highways that are either designated or considered eligible for designation.[4] The purpose of the Scenic Highway Program is to enhance and protect scenic resources along California highways in the following ways:[5]

- Protect the scenic corridor from encroachment of incompatible land uses, such as junkyards, dumps, concrete plants, and gravel pits
- Mitigate activities within the corridor that detract from its scenic quality by proper siting, landscaping, or screening
- Prohibit billboards and regulate on-site signs so they do not detract from scenic views
- Make development more compatible with the environment and in harmony with the surroundings
- Regulate grading to prevent erosion, cause minimal alteration of existing contours, and preserve important vegetative features along the highway
- Preserve views of hillsides by minimizing development on steep slopes and along ridgelines
- Prevent the need for noise barriers (sound walls) by requiring a minimum setback for residential development adjacent to a scenic highway

3.3 LOCAL

3.3.1 Los Angeles County General Plan

The County's consideration of development of single-family residences in the unincorporated areas of Los Angeles County is guided by the Los Angeles County General Plan. Information contained in the Conservation and Natural Resources Element[6] of the Los Angeles County General Plan 2035 has been referenced.

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[3] California Department of Transportation. Accessed 27 April 2015. Frequently Asked Questions. Available online at: http://www.dot.ca.gov/hq/LandArch/scenic/faq.htm

[4] California Department of Transportation. Accessed 27 April 2015. Scenic Highway Program: Eligible (E) and Officially Designated (OD) Routes. Available online at: http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm

[5] California Department of Transportation. Accessed 27 April 2015. The Benefits of Scenic Highway Designation. Available online at: http://www.dot.ca.gov/hq/LandArch/scenic/can_do.htm

[6] Los Angeles County Department of Regional Planning. Adopted 6 October 2015. Los Angeles County General Plan: Chapter 9: Conservation and Natural Resources Element. PDF available online at: http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch9.pdf

3.3.1.1 1965 Regional Recreation Areas Plan of Previously Adopted Los Angeles County General Plan

The 1965 adopted Los Angeles County General Plan contains a Regional Recreation Areas Plan that identified existing County scenic resources in 1965 including roadside rests, which provide places for drivers and passengers to rest in order to reduce fatigue; scenic drives, which afford visual enjoyment of nature either undisturbed or enhanced by the incidental or designed efforts of man; and vista points, which command a panoramic and spectacular view. As several of these scenic resources have been adopted within the 2012 Santa Clarita Valley Area Plan and the 2014 Antelope Valley Area Plan, there is a potential that these 1965 scenic resources may be designated in the anticipated Scenic Resources Ordinance identified in Chapter 16 of the Los Angeles County General Plan 2035 Update. Therefore, scenic resources from the 1965 Regional Recreation Areas Plan have been included in this analysis.

3.3.1.2 Land Use Element

The Land Use Element of the Los Angeles County General Plan 2035 Update provides strategies and planning tools to facilitate and guide future development and revitalization efforts.[7] The County recognizes that scenic features in the region, such as the coastline and mountain vistas, are significant natural resources for the County. The Land Use Element includes policies that protect the visual quality of scenic resources, including Hillside Management Areas (HMAs), ridgelines, scenic viewsheds, and areas along scenic highways.

3.3.1.3 Conservation and Natural Resources Element

The Conservation and Natural Resources Element of the Los Angeles County General Plan 2035 Update addresses the preservation of valuable designated scenic areas, vistas, and roadways. The Element identifies the three officially designated State and County Scenic Highways in the County (Angeles Crest Highway State Route 2, two sections of Mulholland Highway, and Malibu Canyon-Las Virgenes Highway from CA-1 to Lost Hills Road), describes scenic viewsheds, and identifies significant ridgelines that need to be protected and preserved. According to County policy C/NR 13.10, significant ridgelines are identified by the following criteria:[8]

- Topographic complexity
- Uniqueness of character and location
- Presence of cultural or historic landmarks
- Visual dominance on the skyline or viewshed, such as the height and elevation of a ridgeline
- Environmental significance to natural ecosystems, parks, and trail systems

[7] Los Angeles County Department of Regional Planning. January 2014. 2014 Draft General Plan 2035. "Chapter 6: Land Use Element." Revised draft available online at: http://planning.lacounty.gov/assets/upl/project/gp_2035_redlined-final-20141125.pdf

[8] Los Angeles County Department of Regional Planning. 25 November 2014. 2014 Draft General Plan 2035. "Chapter 9: Conservation and Natural Resources Element." Revised draft available online at: http://planning.lacounty.gov/assets/upl/project/gp_2035_redlined-final-20141125.pdf

The Conservation and National Resources Element also states that the Los Angeles County Scenic Highway Plan was created to conform to the State Scenic Highway Program. According to State guidelines, a highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. To be designated as an official State scenic highway, the County must create a corridor protection program, which must be adopted by the Board of Supervisors. Each corridor protection program must contain the following five elements related to preserving the nominated scenic highway:

- Regulation of land use and density of development
- Detailed land and site planning
- Control of outdoor advertising
- Careful attention to and control of earthmoving and landscaping
- Attention to design and appearance of structures and equipment

The Conservation and Natural Resources Element has established one goal and six policies relevant to aesthetics in consideration of the proposed initiative:

- **Goal C/NR 13: Protected visual and scenic resources.**
- **Policy C/NR 13.1:** Protect scenic resources through land use regulations that mitigate development impacts.
- **Policy C/NR 13.2:** Protect ridgelines from incompatible development that diminishes their scenic value.
- **Policy C/NR 13.3:** Reduce light trespass, light pollution, and other threats to scenic resources.
- **Policy C/NR 13.4:** Encourage developments to be designed to create a consistent visual relationship with the natural terrain and vegetation.
- **Policy C/NR 13.5:** Encourage required grading to be compatible with the existing terrain.
- **Policy C/NR 13.8:** Manage development in Hillside Management Areas (HMAs) to protect their natural and scenic character and minimize risks from natural hazards, such as fire, flood, erosion, and landslides.
- **Policy C/NR 13.9:** Consider the following in the design of a project that is located within an HMA, to the greatest extent feasible:
    - Public safety and the protection of hillside resources through the application of safety and conservation design standards;
    - Maintenance of large contiguous open areas that limit exposure to landslide, liquefaction and fire hazard and protect natural features, such as significant ridgelines, watercourses, and SEAs [Significant Ecological Areas].

3.3.1.4 General Plan Implementation Programs

Chapter 16, *General Plan Implementation Programs*, of the County General Plan establishes the following relevant program to aesthetics in response to Conservation and Natural Resources Element Goal C/NR 13:

- **Program C/NR64:** Scenic Resources Ordinance (timeframe: 1–2 years)
    - Prepare a Scenic Resources Ordinance that creates a scenic corridor, scenic viewshed, and significant ridgeline program and/or ordinance to protect remaining scenic resources.
    - Develop countywide ridgeline protection regulations and a countywide ridgeline map.

3.3.1.5 2015 Antelope Valley Area Plan – Town and Country

The Antelope Valley Area Plan - Town & Country (Antelope Valley Area Plan) was adopted by the County Board of Supervisors on June 16, 2015. [9] The Town and Country Planning Area of the Antelope Valley Area Plan, a component of the Los Angeles County General Plan, provides planning policies for approximately 1,800 square miles of elevated desert terrain bounded by the southern foothills of the San Gabriel Mountains on the south, Kern County to the north, and extending from the eastern border of the community of Agua Dulce and the Ventura County line on the west to the San Bernardino County line on the east, including 94.8 percent of the parcels that would be potentially affected by the proposed initiative. The Antelope Valley Area Plan identifies 53 priority scenic drives in the Town and Country Planning Area.[10] The Conservation and Open Space Element of the Antelope Valley Area Plan establishes the following goals and policies relevant to protecting Antelope Valley's valuable scenic resources and dark night skies in consideration of the proposed initiative:[11]

- **Goal COS 5:** The Antelope Valley's scenic resources, including scenic drives, water features, significant ridgelines, buttes, and Hillside Management Areas, are enjoyed by future generations.
    - **Policy COS 5.1:** Identify and protect natural landforms and vistas with significant visual value, such as the California Poppy Preserve, by designating them as Scenic Resource Areas.
    - **Policy COS 5.2:** Except within economic opportunity areas, limit the potential amount of development in Scenic Resource Areas through appropriate land use designations with very low densities in order to minimize negative impacts from future development.
    - **Policy COS 5.3**: Require new development in Hillside Management Areas to comply with applicable Zoning Code requirements, ensuring that development occurs in the most environmentally sustainable portions of the land.
    - **Policy COS 5.4**: Require appropriate development standards in Hillside Management Areas that minimize grading and alteration of the land's natural contours, ensure that development pads mimic natural contours, and ensure that individual structures are appropriately designed to minimize visual impacts.
    - **Policy COS 5.5**: Require adequate erosion control measures for all development in Hillside Management Areas, both during and after construction.
    - **Policy COS 5.6**: Restrict development on buttes and designated significant ridgelines by requiring appropriate buffer zones.

[9] Los Angeles County Department of Regional Planning. June 16, 2015. Antelope Valley Area Plan – Town & Country. Available online at: http://planning.lacounty.gov/tnc/documents/

[10] Los Angeles County Department of Regional Planning. March 31, 2015. Los Angeles County Town and Country Scenic Drives Map. Available online at: http://planning.lacounty.gov/assets/upl/project/tnc_map4-2-20150601.pdf

[11] Los Angeles County Department of Regional Planning. June 16, 2015. Antelope Valley Area Plan – Town & Country. "Chapter 4: Conservation and Open Space Element." Available online at: http://planning.lacounty.gov/tnc/documents/

- **Policy COS 5.7**: Ensure that incompatible development is discouraged in designated Scenic Drives by developing and implementing development standards and guidelines for development within identified viewsheds of these routes (Map 4.2: Antelope Valley Scenic Drives).

- **Goal COS 15:** Humans and wildlife enjoy beautiful dark Antelope Valley skies unimpeded by light pollution.
  - **Policy COS 15.1:** Ensure that outdoor lighting, including street lighting, is provided at the lowest possible level while maintaining safety.
  - **Policy COS 15.2:** Prohibit continuous all-night outdoor lighting in rural areas, unless required for land uses with unique security concerns, such as fire stations, hospitals, and prisons.
  - **Policy COS 15.3:** Replace outdated, obtrusive, and inefficient light fixtures with fixtures that meet dark sky and energy efficiency objectives.
  - **Policy COS 15.4:** Require compliance with the provisions of the Rural Outdoor Lighting District throughout the unincorporated Antelope Valley.

- **Goal COS 16:** Native vegetation thrives throughout the Antelope Valley, reducing erosion, flooding, and wind-borne dust and sand.
  - **Policy COS 16.1:** Except within Economic Opportunity Areas, require new development to minimize removal of native vegetation. Discourage the clear-scraping of land and ensure that a large percentage of land is left in its natural state.
  - **Policy COS 16.2:** Maximize the use of native vegetation in landscaped areas, provided that vegetation meets all applicable requirements of the Fire Department and the Department of Public Works.

The Land Use Element of the Antelope Valley Area Plan establishes the following goals and policies relevant to protecting Antelope Valley's valuable scenic resources in consideration of the proposed initiative:[12]

- **Goal LU 1:** A land use pattern that enhances the rural character of the unincorporated Antelope Valley.
  - **Policy LU 1.3:** Maintain the majority of the unincorporated Antelope Valley as Rural Land, allowing for agriculture, equestrian and animal-keeping uses, and single-family homes on large lots.

- **Goal LU 2:** A land use pattern that protects environmental resources.
  - **Policy LU 2.1:** Limit the amount of potential development in Significant Ecological Areas, including Joshua Tree Woodlands, wildlife corridors, and other sensitive habitat areas, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.
  - **Policy LU 2.2:** Except within economic opportunity areas, limit the amount of potential development near and within Scenic Resource Areas, including water features, significant ridgelines, and Hillside Management Areas, through appropriate land use designations with very low residential densities, as indicated in the Land Use Policy Map (Map 2.1) of this Area Plan.

[12] Los Angeles County Department of Regional Planning. June 16, 2015. Antelope Valley Area Plan – Town & Country. "Chapter 2: Land Use Element." Available online at: http://planning.lacounty.gov/tnc/documents/

The Economic Development Element of the Antelope Valley Area Plan establishes the following goal and policy relevant to protecting Antelope Valley's valuable scenic resources in consideration of the proposed initiative:[13]

- **Goal ED 1:** A healthy and balanced economic base in the Antelope Valley that attracts a wide range of industries and businesses and provides high-paying jobs for local residents.
    - **Policy ED 1.16:** Preserve the scenic resources of the Antelope Valley, including Scenic Drives, Significant Ridgelines and Significant Ecological Areas, in such a way that can contribute to the economic activities in the area.

The Antelope Valley Area Plan recommends the development and implementation of an Antelope Valley Scenic Drives Program to ensure that the scenic value of Scenic Drives is maintained in the years to come, which may include:[14]

- Required Visual Impact Assessment for proposed development within the viewsheds of identified Scenic Drives;
- Required finding for discretionary entitlements that the proposed development is compatible with the scenic character of the route; or
- Applicable development standards for developing along a Scenic Drive.

This program has not yet been developed.

The Community-Specific Land Use Concepts Element of the Antelope Valley Area Plan also establishes the desired land uses for each area and identifies potential incompatible land uses.[15] Of the 19 rural areas defined in the plan, 17 are located in or partially overlap with the proposed initiative study area:

- **Acton:** The area should remain a rural community to protect its unique identity. The majority of new residential development in Acton shall be directed to the rural town area instead of the surrounding rural preserve area, provided that such development is consistent with existing community character.

- **Antelope Acres:** The area should remain a rural community to protect its unique identity. Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

- **Crystalaire:** The majority of new residential development in Crystalaire should be directed to the rural town area instead of the surrounding rural preserve areas, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses, provided that lots meet Zoning Code requirements for those uses.

[13] Los Angeles County Department of Regional Planning. June 16, 2015. Antelope Valley Area Plan – Town & Country. "Chapter 6: Economic Development Element." Available online at: http://planning.lacounty.gov/tnc/documents/

[14] Los Angeles County Department of Regional Planning. June 16, 2015. Antelope Valley Area Plan – Town & Country. "Chapter 8: Plan Implementation." Available online at: http://planning.lacounty.gov/tnc/documents/

[15] Los Angeles County Department of Regional Planning. June 16, 2015. Antelope Valley Area Plan – Town & Country. "Chapter 7: Community-Specific Land Use Concepts." Available online at: http://planning.lacounty.gov/tnc/documents/

- **Elizabeth Lake and Lake Hughes (The Lakes):** The majority of new residential development in Elizabeth Lake and Lake Hughes (collectively known as The Lakes) should be directed to the rural town areas instead of the surrounding rural preserve areas, provided that such development is consistent with existing community character.

- **Fairmont:** The entire community is considered to be a rural preserve area; development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

- **Gorman:** Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

- **Green Valley:** The majority of new residential development in Green Valley should be directed to the rural town areas instead of the surrounding rural preserve area, provided that such development is consistent with existing community character.

- **Juniper Hills:** Development in the rural town area should be limited to single-family homes on large lots, light agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

- **Lake Los Angeles:** The majority of new residential development in Lake Los Angeles should be directed to the rural town areas instead of the surrounding rural preserve area, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses, provided that lots meet Zoning Code requirements for those uses.

- **Lakeview:** The majority of new residential development in Lakeview should be directed to the rural town area instead of the surrounding rural preserve area, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses, provided that lots meet Zoning Code requirements for those uses.

- **Leona Valley:** The area should remain a rural community to protect its unique identity. The majority of new residential development in Leona Valley should be directed to the rural town area instead of the surrounding rural preserve area, provided that such development is consistent with existing community character.

- **Littlerock and Sun Village (Southeast Antelope Valley):** The area should remain a rural community to protect its unique identity. The majority of new residential development in Littlerock and Sun Village (collectively known as Southeast Antelope Valley) should be directed to rural town areas instead of the surrounding rural preserve area, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses, provided that lots meet Zoning Code requirements for those uses.

- **Llano:** The majority of new residential development in Llano should be directed to the rural town area instead the surrounding rural preserve area, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses.

- **Neenach:** The majority of new residential development in Neenach should be directed to the rural town areas instead of the surrounding rural preserve areas, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses.

- **Pearblossom:** The majority of new residential development in Pearblossom should be directed to the rural town areas instead of the surrounding rural preserve area, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses.

- **Roosevelt:** Community residents are concerned about the urbanization of the area and wish to remain an unincorporated rural community with a unique agricultural identity. The majority of new residential development in Roosevelt should be directed to the rural town areas instead of the surrounding rural preserve area, provided that such development is consistent with existing community character and allows for light agriculture, equestrian, and animal-keeping uses.

- **Three Points:** Development in the rural preserve area should be limited to single-family homes on very large lots, light and heavy agriculture, equestrian and animal-keeping uses, and other uses where appropriate.

3.3.1.6 2012 Santa Clarita Valley Area Plan

The Castaic/Santa Clarita/Agua Dulce subarea (5.2 percent of the subject parcels potentially affected by the proposed initiative) is located within the Planning Area of the Santa Clarita Valley Area Plan, which comprises the entire Santa Clarita Valley and provides goals, policies, and maps to establish zoning regulations and guide new development proposals.[16] The Santa Clarita Valley Area Plan has designated Significant Ridgelines as valuable scenic resources to be protected during development and trail planning and construction.[17] Relevant guiding principles stated in the Santa Clarita Valley Area Plan include:

- **Environmental Resources**
  - **5.** The natural buffer area surrounding the entire Valley, which includes the Angeles National Forest, Santa Susana, San Gabriel, Sierra Pelona, and Del Sur mountains, shall be preserved as a regional recreational, ecological, and aesthetic resource.
  - **7.** The Santa Clarita Valley's prominent ridgelines shall be preserved and hillside development shall be limited to protect their valuable aesthetic and visual qualities intrinsic to the Valley landscape.

[16] Los Angeles County, Santa Clarita Valley Area Plan, 2012. Available online at: http://planning.lacounty.gov/assets/upl/data/pd_santa-clarita-area-plan-2012.pdf Page 3-4, Section IV. Planning Area.

[17] Los Angeles County, Santa Clarita Valley Area Plan, 2012. Available online at: http://planning.lacounty.gov/assets/upl/data/pd_santa-clarita-area-plan-2012.pdf Appendix II, Page 280. "Figure CO-7: Santa Clarita Valley Area Plan: Scenic Resources."

- **8.** Development shall be located and designed to minimize the impact of the Valley topography, emphasizing the use of grading techniques for development pads that mimic the natural topography in lieu of repetitive flat pads to the extent feasible and consistent with a community's open space objectives.

The Land Use Element of the Santa Clarita Valley Area Plan has established the following goals, objectives, and policies relevant to aesthetics in consideration of the proposed initiative:

- **Goal LU-1:** Urban Form - An interconnected Valley of Villages providing diverse lifestyles, surrounded by a greenbelt of natural open space.
  - **Objective LU-1.1:** Maintain an urban form for the Santa Clarita Valley that preserves an open space greenbelt around the developed portions of the Valley, protects significant resources from development, and directs growth to urbanized areas served with infrastructure.
    - **Policy LU-1.1.4:** Preserve community character by maintaining natural features that act as natural boundaries between developed areas, including significant ridgelines, canyons, rivers and drainage courses, riparian areas, topographical features, habitat preserves, or other similar features, where appropriate.
  - **Objective LU-1.2:** Maintain the distinctive community character of villages and neighborhoods throughout the planning area by establishing uses, densities, and design guidelines appropriate to the particular needs and goals of each area, including, but not limited to the following:
    - **Policy LU-1.2.10:** In Agua Dulce, recognize the scenic and environmental qualities of Vasquez Rocks in future planning; protect the existing rural lifestyle while providing opportunities to enhance the village center; provide additional services to residents; and maintain community character in accordance with the County's Agua Dulce Community Standards District.
  - **Objective LU 1.3:** Plan for density and intensity of development that respects and is reflective of the natural terrain.
    - **Policy LU-1.3.2:** Substantially retain the integrity and natural grade elevations of significant natural ridgelines and prominent landforms that form the Valley's skyline backdrop.
    - **Policy LU-1.3.3:** Discourage development on ridgelines and lands containing 50% slopes so that these areas are maintained as natural open space.
- **Goal LU-6:** Community Appearance - A scenic and beautiful urban environment that builds on the community's history and natural setting.
  - **Objective LU-6.1:** Maintain the natural beauty of the Santa Clarita Valley's hillsides, significant ridgelines, canyons, oak woodlands, rivers, and streams.
    - **Policy LU-6.1.1:** Designate ridgelines throughout the planning area, and preserve these ridgelines from development by encouraging a minimum distance for grading and development from these ridgelines of 50 feet, or more if determined preferable by the reviewing authority based on site conditions.

- **Goal LU-7:** Environmentally Responsible Development - Environmentally responsible development through site planning, building design, waste reduction, and responsible stewardship of resources.
    - **Objective LU-7.6:** Protect natural habitats through site design where reasonable and feasible.
        - **Policy LU-7.6.1:** Limit outdoor lighting levels to the minimum needed for safety and security, and encourage lower lighting levels when businesses are closed.

The Conservation Element provides the following goals, objectives, and policies relevant to aesthetics in consideration of the proposed initiative:

- **Goal CO-3:** Biological Resources - Conservation of biological resources and ecosystems, including sensitive habitats and species.
    - **Objective CO-3.6:** Minimize impacts of human activity and the built environment on natural plant and wildlife communities.
        - **Policy CO-3.6.1:** Minimize light trespass, sky-glow, glare, and other adverse impacts on the nocturnal ecosystem by limiting exterior lighting to the level needed for safety and comfort; reduce unnecessary lighting for landscaping and architectural purposes, and encourage reduction of lighting levels during non-business nighttime hours.
- **Goal CO-6:** Scenic Resources - Preservation of scenic features that keep the Santa Clarita Valley beautiful and enhance quality of life, community identity, and property values.
    - **Objective CO-6.1:** Protect the scenic character of local topographic features.
        - **Policy CO-6.1.1:** Protect scenic canyons (listed in *Existing Conditions*) from overdevelopment and environmental degradation.
        - **Policy CO-6.1.2:** Preserve significant ridgelines as a scenic backdrop throughout the community by maintaining natural grades and vegetation.
        - **Policy CO-6.1.3:** Protect the scenic quality of unique geologic features throughout the planning area, such as Vasquez Rocks, by including these features within park and open space land where possible.
    - **Objective CO-6.3:** Protect the scenic character of major water bodies.
        - **Policy CO-6.3.2:** Protect the banks of the Santa Clara River and its major tributaries (listed in *Existing Conditions*) through open space designations and property acquisitions, where feasible, to protect and enhance the scenic character of the river valley.
    - **Objective CO-6.4:** Protect the scenic character of oak woodlands, coastal sage, and other habitats unique to the Santa Clarita Valley.
    - **Objective CO-6.5:** Maintain the scenic character of designated routes, gateways, and vista points along roadways.
    - **Objective CO-6.6:** Limit adverse impacts by humans on the scenic environment.
        - **Policy CO-6.6.1:** Enhance views of the night sky by reducing light pollution through use of light screens, downward directed lights, minimized reflective paving surfaces, and reduced lighting levels, as

deemed appropriate by the reviewing authority.

- **Goal CO-10:** Open Space - Preservation of open space to meet the community's multiple objectives for resource preservation.
  - **Objective CO-10.1:** Identify areas throughout the Santa Clarita Valley which should be preserved as open space in order to conserve significant resources for long-term community benefit.
    - **Policy CO-10.1.2:** The Santa Clara River corridor and its major tributaries shall be preserved as open space to accommodate storm water flows and protect critical plant and animal species, as follows: (Guiding Principle #6)
      - Designed to maximize the full range of river amenities, including views and recreational access, while minimizing adverse impacts to the river.
    - **Policy CO-10.1.5:** Maintain open space corridors along canyons and ridgelines as a way of delineating and defining communities and neighborhoods, providing residents with access to natural areas, and preserving scenic beauty.

3.3.2 Rural Outdoor Lighting District Ordinance

Approximately 337,840 acres of the 340,461-acre proposed initiative study area (99.2 percent) are located within the County's Rural Outdoor Lighting District and subject to restrictions in terms of producing sources of light and glare at night.[18] The Rural Outdoor Lighting District Ordinance, adopted in November 2012, is an amendment to Title 22 – Planning and Zoning of the Los Angeles County Code that established a rural outdoor lighting district, a supplemental district for the rural areas of the County within which outdoor lighting is regulated to maintain dark skies at night for the residents and wildlife in the district.[19] The Ordinance also modified the community standards districts located within the district to be consistent with the Ordinance. Under the Ordinance, outdoor lighting shall be fully shielded on properties located in residential, agricultural, open space, or watershed zones. Drop-down lenses, mercury vapor light, ultraviolet lights, searchlights, laser lights, and other lighting that flashes, blinks, alternates, or moves are prohibited within the Rural Outdoor Lighting District. In addition to compliance with the applicable provisions of the Building and Electrical Codes of Los Angeles County, outdoor lighting within the District, other than street lights, is subject to the following requirements under the Ordinance relevant to the proposed initiative:

- For properties located in a residential, agricultural, open space, or watershed zone, outdoor light fixtures installed above 15 feet in height shall have a manufacturer's maximum output rating of no greater than 400 lumens.
- Outdoor lighting shall cause no unacceptable light trespass.
- Outdoor lighting shall be fully shielded.
- The maximum height for an outdoor light fixture, as measured from the finished grade to the top of the fixture, shall be 20 feet for a property located in the Residential, Agricultural, Open Space, or Watershed Zones.

[18] Los Angeles County Department of Regional Planning. N.d. Los Angeles County Rural Outdoor Lighting District. Available online at: http://planning.lacounty.gov/assets/upl/data/map_t07-rural_outdoor_lighting_district.pdf

[19] Los Angeles County Department of Regional Planning. 28 September 2012. Ordinance No. 2012-0047. Available online at: http://planning.lacounty.gov/assets/upl/data/ord_outdoor-lighting.pdf Main website: http://planning.lacounty.gov/view/rural_outdoor_lighting_district_ordinance/

In order to maintain the dark skies characteristic of the Rural Outdoor Lighting District, street lights in the District shall be prohibited except where necessary at urban cross-sections with sidewalks, curbs, and gutters, or at intersections and driveways on County roads, where the Director of Public Works finds that street lights will alleviate traffic hazards, improve traffic flow, and/or promote safety and security of pedestrians and vehicles based on Public Works' highway safety lighting standards. Where street lights are installed in the District, they shall:

1. Be placed at the maximum distance apart, with the minimum lumens allowable pursuant to Public Works' highway safety lighting standards, as determined by the Director of Public Works;
2. Utilize full-cutoff (flat glass lens) luminaries so as to deflect light away from adjacent parcels; and
3. Be designed to prevent off-street illumination and glare.

3.3.3 Community Standards Districts Ordinances

Community standards districts (CSDs) are supplemental districts that are established to provide a means of implementing special development standards for neighborhoods and communities within the unincorporated areas of Los Angeles County or to provide a means of addressing special problems which are unique to certain geographic areas within the County (Ord. 93-0047 § 1, 1993: Ord. 87-0130 § 1, 1987: Ord. 83-0065 § 5, 1983: Ord. 1494 Ch. 9 Art. 5 § 905.1, 1927.).[20] CSD regulations supplement the Countywide zoning and subdivision regulations.[21]

[20] County of Los Angeles Department of Regional Planning. Accessed 17 June 2015. Community Standards Districts. Website. Available online at: http://planning.lacounty.gov/view/community_standards_districts

[21] County of Los Angeles. n.d. Los Angeles County, California, Code of Ordinances: Title 22 – Planning and Zoning: Division 1 – Planning and Zoning: Chapter 22.44 – Supplemental Districts: Part 2 Community Standards Districts. Website. Available online at: https://library.municode.com/HTML/16274/level4/TIT22PLZO_DIV1PLZO_CH22.44SUDI_PT2COSTDI.html#TIT22PLZO_DIV1PLZO_CH22.44SUDI_PT2COSTDI_22.44.126ACCOSTDI

SECTION 4.0
METHODS

This section of the Aesthetics Technical Report describes the methods employed in the characterization and evaluation of aesthetics within the seven subareas of the proposed initiative study area. The study methods were designed to provide the substantial evidence required to address the scope of analysis recommended in Appendix G of the State CEQA Guidelines, as well as the County of Los Angeles General Plan 2035 Update, 2015 Antelope Valley Area Plan – Town & Country, 2012 Santa Clarita Valley Area Plan, California Scenic Highway Program, 1968 National Trails System Act, and 1982 Pacific Crest National Scenic Trail Comprehensive Plan, as established in Section 3.0. This methodology uses GIS proximity analysis and GIS viewshed analysis using station points and aerial imagery to evaluate the visual impacts of the proposed initiative in terms of individual parcels within the extensive proposed initiative study area.

The factors considered for aesthetics include (1) available visual access and visibility, frequency, and duration that the proposed initiative study area is viewed from designated scenic resources, including scenic vistas, roadside rests, scenic drives, scenic highways, significant ridgelines, and scenic water bodies; (2) viewing conditions and how the proposed initiative would dominate the view of the observer and the extent to which the proposed initiative would block the views of existing scenic landscape features; (3) scenic quality of the proposed initiative study area and vicinity; and (4) the resulting contrast of the proposed initiative with the existing visual character. Visibility of the subject parcels from scenic resources was considered from the perspective of pedestrians and motor vehicle drivers, including hikers along the PCT, commuters along scenic road corridors, and residents in existing communities.

4.1 LITERATURE AND MAP REVIEW

The 1968 National Trails System Act;[1] Caltrans Scenic Highway System[2] designations; the Conservation and Natural Resources Element[3] of the Los Angeles County General Plan 2035 Update; the 2015 Antelope Valley Area Plan – Town & Country;[4] the 2012 Santa Clarita Valley Area Plan;[6] and the Los Angeles County Rural Outdoor Lighting District Ordinance[7] were reviewed to identify County-designated scenic vistas, federal- and local-designated scenic resources that have been established as areas of special interest in regard to preservation of visual character and quality, and State-designated and eligible scenic highways from which the scenic corridors need to be protected.

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[1] National Park Service. Website last modified 12 July 2012. The National Trails System Act. Also found in United States Code, Volume 16, Sections 1241-1251. Available online at: http://www.nps.gov/nts/legislation.html

[2] California Department of Transportation. Accessed 17 June 2015. Scenic Highway Program: Eligible (E) and Officially Designated (OD) Routes. Available online at: http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm

[3] Los Angeles County Department of Regional Planning. 25 November 2014. Los Angeles County General Plan: Public Review Draft. Chapter 9: Conservation and Natural Resources Element. Revised draft available online at: http://planning.lacounty.gov/assets/upl/project/gp_2035_redlined-final-20141125.pdf

[4] Los Angeles County Department of Regional Planning. June 16, 2015. Antelope Valley Area Plan – Town & Country. Available online at: http://planning.lacounty.gov/tnc/documents/

[6] Los Angeles County, Santa Clarita Valley Area Plan. 2012. Available online at: http://planning.lacounty.gov/assets/upl/data/pd_santa-clarita-area-plan-2012.pdf

[7] Los Angeles County Department of Regional Planning. 28 September 2012. Ordinance No. 2012-0047. Available online at: http://planning.lacounty.gov/assets/upl/data/ord_outdoor-lighting.pdf Main website: http://planning.lacounty.gov/view/rural_outdoor_lighting_district_ordinance/

4.2 GIS VIEWSHED ANALYSIS

A terrain analysis was completed using ArcGIS to develop a viewshed to determine the visibility of new development on the subject parcels from designated scenic vista points, roadside rest points, and station points spaced at every mile along the PCT, Officially Designated State Scenic Highways, Eligible State Scenic Highways, County-designated Scenic Drives, and City-designated Scenic Highways. Caltrans' visual impact assessment training module for visual character was used to define the viewshed analysis criteria.[8] As for a traveler on a highway, viewsheds are directional (the viewshed for a traveler moving in one direction can be quite different than a traveler moving in the opposite direction on the same highway, and the viewshed for a driver is more constrained by direction than it is for a passenger who has more discretion to look to the side or even backward), a traditional viewshed is static and is defined as what can be seen in 360 degrees from a single view point. What a person can see from a single spot is limited by objects—such as hills, trees, buildings—that obscure what he or she can see. A 5-foot viewer elevation was established to identify the visibility level of potential development on the subject parcels from scenic resources by both pedestrians and vehicle occupants, and a 15-mile buffer was established around each scenic resource to define the atmospheric visual limits of the viewshed. Through the overlay of the subject parcel boundaries with a 20-foot extrusion representing the potential house and hauled water tank heights, terrain model, and designated scenic resources identified from the federal, State, and local regulatory framework described in Section 3.0, the potential visibility level of the subject parcels was calculated on a parcel-by-parcel basis. ArcGIS was then used to intersect the subject parcels with the designated significant ridgelines to identify the degree to which development on the subject parcels would affect the significant ridgelines. Particular emphasis was placed on the proximity of the subject parcels to designated significant ridgelines and within the viewshed of scenic vistas, scenic highway corridors, scenic resources identified in the Antelope Valley Area Plan and Santa Clarita Valley Area Plan, and the PCT. As the viewshed is defined as if the earth had a lunar landscape and only addresses landform, Google Earth was then used to verify the visibility level of the subject parcels using Street View and Ground View to identify major vegetative or development visual obstructions and identify potential visibility between the station points (see Section 4.3).

4.3 GIS PROXIMITY ANALYSIS

An ArcGIS proximity analysis was used to evaluate the potential of the proposed initiative to change the visual character of the area, and increase light and glare from the construction of additional residences and associated street lights in the area, based on proximity of the subject parcels to existing developed areas. GIS proximity analysis for potential changes to visual character was used to identify the subject parcels located more than one mile away from existing development, including, but not limited to residential, commercial, industrial, roadway, and transmission corridors. These existing developed areas were identified from Earth at Night 2012 data, which is a composite of city light data acquired by the SuomiNPP satellite over nine days in April 2012 and 13 days in October 2012.[9] The potential increase in light and glare was determined based on proximity to existing developed areas, with the assumption that locations within one mile

[8] California Department of Transportation. Accessed 3 May 2015. Visual Impact Assessment Training: Module 2: Visual Character. "Lesson 8: Labeling the Landscape." Available at: http://www.dot.ca.gov/hq/LandArch/via_training/mod_2/mod_02_less_08.htm

[9] NASA Earth Observatory/NOAA NGDC. 7 December 2012. Earth at Night 2012. Imagery available from Google Earth Map Gallery.

of existing development already have night lighting. The evaluation of light and glare was evaluated in relation to the potential to conform or conflict with the 2012 Rural Outdoor Lighting District Ordinance, which would require that new single-family residences conform with the Ordinance as a condition for approval but does not apply to the outdoor street lights that would be constructed as a result of the expansion of roads to provide access to the new residences.

4.4 RATING SYSTEM

The resulting aesthetics analysis using the literature review, GIS viewshed analysis and GIS proximity analysis focused on the potential of the proposed initiative to impact scenic vistas, scenic resources within a State scenic highway, visual character or quality (including designated scenic resources), and light and glare within and immediately surrounding the proposed initiative study area. The analysis addressed the visual impacts of increased housing, water tanks, infrastructure, and new unpaved roads.

The level of change to existing aesthetics in regard to (1) scenic vistas, (2) scenic highways, and the scenic resources that affect visual character described below has been evaluated only for the subject parcels that have been identified during GIS viewshed analysis to be located within the viewshed of these scenic resources. The proximity analysis conducted for (3) visual character and (4) light and glare, on the other hand, evaluates all of the parcels in relation to their proximity to development.

The level of change to views from scenic vistas depends on two factors: (1) the visibility of the subject parcels, based on viewshed analysis; and (2) the distance zone of the visible subject parcels, based on whether the subject parcels would be viewed in the foreground, foreground-middleground, middleground, or background.

The level of change to views from scenic highways depends on three factors: (1) the visibility of the subject parcels, based on viewshed analysis; (2) the distance zone of the visible subject parcels, based on whether the subject parcels would be viewed in the foreground, foreground-middleground, middleground, or background; and (3) the length along the scenic highway from which the parcels are visible.

The level of change to visual character and quality depends on: (1) the proximity of the subject parcels to existing development; and (2) the visibility of the subject parcels from PCT, County Scenic Drives, and City Scenic Highways.

The level of change to light and glare depends on two factors: (1) the proximity of the subject parcels to existing development and (2) whether the subject parcels are located within the boundaries of the County Rural Outdoor Lighting District, which restricts nighttime lighting sources.

SECTION 5.0
RESULTS

5.1 BASELINE CONDITIONS

The proposed initiative study area is located entirely within the 5th Supervisorial District in the northern one-third of the County of Los Angeles, including areas located north and east of the San Gabriel Mountains in the Antelope Valley; areas located northeast of the City of Santa Clarita, north and south of California SR-14; areas that are southwest of the City of Palmdale in the communities of Agua Dulce and Acton; and scattered parcels in the Angeles National Forest. The proposed initiative would allow hauled water as the primary source of potable water for new single-family residences on the subject undeveloped parcels where the zoning allows for development of a single-family residence that do not have access to private or public water distribution systems or groundwater. The proposed initiative study area is restricted to parcels in unincorporated Los Angeles County and bounded by the Los Angeles County–Ventura County line to the west, the Los Angeles County–Kern County line to the north, the Los Angeles County–San Bernardino County line to the east, and the southern boundary of the Angeles National Forest and City of Los Angeles to the south. The baseline conditions information below is organized consistent with the Aesthetics Section of Appendix G to the State CEQA Guidelines.

5.1.1 Scenic Vistas

There are no officially designated County scenic vistas in the northern one-third of the County.[1] The County is considering the adoption of a Scenic Resources Ordinance in the 2015 to 2018 timeframe that may include scenic resources from the County's 1965 Regional Recreation Areas Plan.[2] There are three scenic vista points and one roadside rest that were identified in the 1965 Regional Recreation Areas Plan from which the subject parcels within the proposed initiative study area are potentially visible (see Figure 5.1.1-1, *Lake Hughes/Gorman/West of Lancaster Subarea Scenic Resources*; Figure 5.1.1-2, *Lancaster Northeast Subarea, Antelope Valley Northeast Subarea, and Lake Los Angeles/Llano/Valyermo/Littlerock Subarea Scenic Resources*; Figure 5.1.1-3, *Acton Subarea and Castaic/Santa Clarita/Agua Dulce Subarea Scenic Resources*; and Figure 5.1.1-4, *East San Gabriel Mountains Subarea Scenic Resources*, at the end of this section).

Vista Points

- **Reservoir Summit (1965 County Vista Point 12):** this scenic vista point, which was designated by the County for its panorama view of mountain landforms and landscapes, is located approximately 9.6 miles north-northwest of the Castaic/Santa

[1] The County has designated scenic vistas in the Santa Monica Mountains land use plans, which are located over 13 miles south of the nearest parcel within the Castaic/Santa Clarita/Agua Dulce subarea and over 15 miles southwest of the nearest parcel within the East San Gabriel Mountains subarea. As the proposed initiative study area is not located in the vicinity of these scenic vistas, they have not been included in the analysis. Santa Monica Mountains Local Coastal Program map with public viewing areas available at: http://planning.lacounty.gov/assets/upl/project/coastal_adopted-map3.pdf

[2] Los Angeles County Department of Regional Planning. Amended 29 July 1965. Los Angeles County Regional Recreation Areas Plan. A Part of the Recreation Element of the General Plan. PDF available online at: http://planning.lacounty.gov/assets/upl/project/gp_web80-regional-recreation-areas-plan.pdf Main website: http://planning.lacounty.gov/generalplan/existing

Clarita/Agua Dulce subarea and approximately six miles south of the Lake Hughes/Gorman/West of Lancaster subarea.

- **Inspiration Point (1965 County Vista Point 463):** this scenic vista point, which was designated by the County for its panorama view of the San Gabriel River watershed, is located approximately 4.5 miles south of the Lake Los Angeles/Llano/ Valyermo/Littlerock subarea.

- **Big Rock Canyon Vista Point (1965 County Vista Point 464):** this scenic vista point, which was designated by the County for its panorama view of Big Rock Canyon and the Antelope Valley, is located approximately 4.3 miles south of the Lake Los Angeles/Llano/Valyermo/Littlerock subarea.

Roadside Rests

- **State Roadside Rest #8 (379):** this roadside rest is located on Angeles Crest Highway, six miles east of San Gabriel Canyon Road and approximately 4.8 miles south of the Lake Los Angeles/Llano/Valyermo/Littlerock subarea. However, due to topography and existing trees, the nearest visible parcel within the subarea is located approximately seven miles northwest of the roadside rest.

Caltrans has designated one scenic vista point within Los Angeles County, Lamont Odett Vista Point, which is located at Post Mile 57.8 along the northbound side of State Route 14 and overlooks the Aerospace Valley, Lake Palmdale, and the California Aqueduct toward the north and northeast from the Vista Point (see Figures 5.1.1.1, 5.1.1.2, and 5.1.1.3)[3,4] This vista point is located approximately 0.4 mile north of the Acton subarea, approximately 5.2 miles north of the East San Gabriel Mountains subarea, approximately 7.6 miles east of the Castaic/Santa Clarita/Agua Dulce subarea, approximately 9.7 miles south of nearest parcels within the Lake Los Angeles/Llano/Valyermo/Littlerock subarea, approximately 11.4 miles south of the nearest parcels within the Lancaster Northeast subarea, approximately 13.7 miles south of the nearest parcels within the Lake Hughes/Gorman/West of Lancaster subarea, and approximately 25.2 miles southwest of the Antelope Valley Northeast subarea. Although subject parcels within the Acton subarea would be visible from this vista point, they are located to the south of the vista point, opposite the scenic view.

Caltrans has designated another scenic vista point within a 15-mile radius of the proposed initiative study area, Silverwood Lake 2 Scenic Vista Point, which is located at Post Mile 25.3 along the south-eastbound side of State Route 138. This vista point is located approximately 2.8 miles east of the Lake Los Angeles/Llano/Valyermo/Littlerock subarea and approximately 3.1 miles northeast of the East San Gabriel Mountains subarea. Subject parcels within the East San Gabriel Mountains subarea and Lake Los Angeles/Llano/Valyermo/Littlerock subarea would not be visible from this vista point because they are located on slopes opposite the vista point or on flat land on the other side of the community of Pinon Hills.

[3] Male, Laura, Sapphos Environmental, Inc. Pasadena, CA. 3 July 2015. Communication with Daniel Kitowski, Transportation Manager (GIS), California Department of Transportation.

[4] California Department of Transportation. 2014. *2014 Named Freeways, Highways, Structures and other Appurtenances in California*. Available at: http://www.dot.ca.gov/hq/tsip/hseb/products/Named_Freeways_Final.pdf

5.1.2 Scenic Highways

There are four categories of scenic highway designation within the proposed initiative study area: (1) Officially Designated State Scenic Highways, (2) Highways eligible for State Scenic Highway Designation, (3) State-Designated County Scenic Highways, and (4) City-Designated Scenic Highways. The Caltrans website was consulted to determine the location of the nearest designated and eligible proposed scenic highways.[5] Approximately 34,744 of the 42,867 parcels in the proposed initiative study area are potentially visible from designated and eligible State Scenic Highways.

Officially Designated State Scenic Highways

Approximately 34,309 of the 42,867 parcels (80 percent) in the proposed initiative study area are located in the viewshed of officially designated State Scenic Highways. The nearest officially designated State Scenic Highway to the subject parcels is SR-2 (Angeles Crest Highway), a 55-mile stretch of highway located approximately 50 feet south of the nearest parcel within the East San Gabriel Mountains subarea and approximately 3.4 miles south of the southernmost parcels within the Lake Los Angeles/Llano/Valyermo/Littlerock subarea (see Figure 5.1.1-4).[6] The subject parcels within the East San Gabriel Mountains subarea at the western edge of Wrightwood and the eastern edge of the Los Angeles County line are located within the SR-2 scenic corridor.

The second nearest officially designated State Scenic Highway is SR-33, which is located approximately 29.5 miles west of the westernmost parcels within the Castaic/Santa Clarita/Agua Dulce subarea in Ventura County. Due to distance and intervening topography, the subject parcels are not visible from SR-33.

Eligible State Scenic Highways

Approximately 435 of the 42,867 parcels (1 percent) in the proposed initiative study area are located in the viewshed of highways that are eligible for the State Scenic Highway designation. The nearest eligible State Scenic Highways to the subject parcels are:

- **Interstate 5 (I-5):** Interstate 5 is located approximately 0.2 mile southwest of the nearest parcel in the Castaic/Santa Clarita/Agua Dulce subarea (see Figures 5.1.1-1 and 5.1.1-3). The subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea that are located on a County-designated significant ridgeline are within proximity to I-5, and are visible from I-5. These subject parcels contain scenic trees within the I-5 scenic corridor. Although the nearest parcel within the East San Gabriel Mountains subarea is located approximately 6.7 miles east of I-5, the subject parcels within the East San Gabriel Mountains subarea are not visible due to intervening topography (see Figure 5.1.1-4).

- **SR-126:** SR-126 is located approximately 0.7 mile southeast of the nearest parcel within the Castaic/Santa Clarita/Agua Dulce subarea (see Figure 5.1.1-3). The subject parcels that are on a County-designated significant ridgeline within this

[5] California Department of Transportation. Accessed 18 May 2015. *Scenic Highway Program: Eligible (E) and Officially Designated (OD) Routes*. Available online at: http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm

[6] California Department of Transportation. 2014. California Scenic Highway Program. Website. Available online at: http://www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm

subarea and are visible from SR-126. However, no scenic trees, rock outcroppings, or historic buildings are located on these parcels within the SR-126 scenic corridor.

- **SR-210:** SR-210 is located approximately 1.2 miles south of the nearest parcel in the East San Gabriel Mountains subarea and approximately 1.2 miles southeast of the nearest parcel in the Castaic/Santa Clarita/Agua Dulce subarea (see Figures 5.1.1-3 and 5.1.1-4). Subject parcels on the south-facing slope of the San Gabriel Mountains within the East San Gabriel Mountains subarea are visible from SR-210 and contain scenic trees within the SR-210 corridor. The subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea are not visible from SR-210 due to intervening topography.

- **SR-39:** SR-39 is located approximately 660 feet west of the nearest parcel in the East San Gabriel Mountains subarea (see Figure 5.1.1-4). The subject parcels are located on ridgelines and on slopes facing the San Gabriel River near the San Gabriel Reservoir, Morris Reservoir, and within Azusa Canyon at the southern boundary of the Angeles National Forest, and are visible from SR-39. These subject parcels within the East San Gabriel Mountains subarea contain scenic trees within the SR-39 corridor.

Officially State-Designated County Scenic Highways

None of the 42,867 parcels located in the proposed initiative study area are visible from officially State-designated County scenic highways. The nearest officially State-designated County scenic highway, Malibu Canyon-Las Virgenes Road, is located approximately 16.2 miles southwest of the nearest parcel in the Castaic/Santa Clarita/Agua Dulce subarea and approximately 22.0 miles southwest of the nearest parcel in the Kagel Canyon subarea.

5.1.3 Visual Character and Quality

The dominant land use pattern, within and adjacent to a subarea, is a key factor in defining the visual character. In general, open space has a more spacious natural visual character, whereas the visual character of an area becomes increasingly more related to the built environment as development increases from rural/agricultural uses, to suburban, and to urban uses. There are four land use patterns that contribute to the visual character and quality of the landscape in the proposed initiative study area either through the designation of open space resources or planning and design review standards that apply to specified areas: (1) urban, (2) suburban, (3) rural/agricultural, and (4) designated open space. There are also five areas that contribute to the visual character and quality of the landscape in the proposed initiative study area either through the designation of scenic resources or planning and design review standards that apply to specified areas: (1) Pacific Crest Trail, National Scenic Trail designation; (2) Significant Ridgelines; (3) Community Standards Districts; (4) County designated scenic drives; and (5) Santa Clarita Valley Area Plan designated scenic resources within the unincorporated Santa Clarita Valley. The seven subareas vary in visual character from predominantly designated open space in the Antelope Valley Northeast subarea to predominantly suburban land use patterns, with some visual connection to urban areas in the Castaic/Santa Clarita/Agua Dulce subarea (Table 5.1.3-1, *Visual Character in Relation to Land Use Patterns in Vicinity of Subareas*).

TABLE 5.1.3-1
VISUAL CHARACTER IN RELATION TO LAND USE PATTERNS IN VICINITY OF SUBAREAS

Subarea	Urban Land Use Pattern	Suburban Land Use Pattern	Rural/Agricultural Land Use Pattern	Designated Open Space
Acton	No	Adjacent to parcels	Adjacent to parcels	Adjacent to parcels
Antelope Valley Northeast	No	No	No	Adjacent to parcels
Castaic/Santa Clarita/Agua Dulce	At a distance from parcels	Adjacent to parcels	Adjacent to parcels	On and adjacent to parcels
East San Gabriel Mountains	No	Adjacent to parcels	Adjacent to parcels	Surrounding parcels
Lake Hughes/Gorman/West of Lancaster	No	Sparse	On and adjacent to parcels	On and adjacent to parcels
Lake Los Angeles/Llano/ Valyermo/Littlerock	No	No	On and adjacent to parcels	Adjacent to parcels
Lancaster Northeast	No	No	On and adjacent to parcels	Adjacent to parcels

Pacific Crest National Scenic Trail

The Pacific Crest National Scenic Trail (also known as Pacific Crest Trail, or PCT), a trail approximately 2,650 miles long (2,350 miles in 1967) extending from the Mexican-California border northward along the mountain ranges of the West Coast states to the Canadian-Washington border, was designated as a national scenic trail with the original establishment of the National Trails System Act. According to the National Trails System Act, "to the extent practicable, efforts shall be made to avoid activities incompatible with the purposes for which such trails were established."[7] PCT passes through easements between subject parcels and adjacent to subject parcels within the Lake Hughes/Gorman/West of Lancaster subarea, the East San Gabriel Mountains subarea, and the Castaic/Santa Clarita/Agua Dulce subarea (see Figures 5.1.1-1, 5.1.1-3, and 5.1.1-4). This national scenic trail is located approximately 0.5 mile southwest of the nearest parcels within the Acton subarea, approximately 3.1 miles south of the nearest parcels within the Lake Los Angeles/Llano/Valyermo/Littlerock subarea, approximately 20.7 miles south of the Lancaster Northeast subarea, and approximately 26.3 miles south of the Antelope Valley Northeast subarea. Approximately 41,473 of the 42,867 parcels (96.7 percent) in the proposed initiative study area are located within the viewshed of approximately 161.5 miles of the PCT.

Significant Ridgelines

Los Angeles County has designated significant ridgelines that intersect with 423 of the subject parcels: 350 parcels of the Castaic/Santa Clarita/Agua Dulce subarea, four parcels of the East San Gabriel Mountains subarea, and 69 parcels of the Lake Hughes/Gorman/West of Lancaster subarea (see Figures 5.1.1-1, 5.1.1-3, and 5.1.1-4).

[7] National Park Service. Website last modified 12 July 2012. The National Trails System Act. Also found in United States Code, Volume 16, Sections 1241-1251. Available online at: http://www.nps.gov/nts/legislation.html Section 7. [16USC1246](c), Administration and Development.

Community Standards Districts (CSDs)

Approximately 8.6 percent (3,694) of the subject parcels are located within CSDs. The Acton, Agua Dulce, Altadena, Castaic Area, Elizabeth Lake and Lake Hughes, and San Francisquito Canyon CSDs establish grading, building height, and setback standards for preserving significant ridgeline areas within the Castaic/Santa Clarita/Agua Dulce and Lake Hughes/Gorman/West of Lancaster subareas (see Figure 5.1.3-1, *County Rural Outdoor Lighting District and CSD Ordinance Boundaries*, at the end of this section; and Table 5.1.3-2, *Community Standards Districts*). Furthermore, 3,656 of the 3,694 subject parcels within CSDs (99.0 percent) are also located within the Rural Outdoor Lighting District; as a result, the Acton, Agua Dulce, Castaic Area, Elizabeth Lake and Lake Hughes, Juniper Hills, Leona Valley, San Francisquito Canyon, and Southeast Antelope Valley CSDs have established lighting standards requiring compliance with the Rural Outdoor Lighting District Ordinance.

County Designated Scenic Drives

Approximately 40,330 of the 42,867 parcels (94.1 percent) within the proposed initiative study area are located within the viewshed of at least one of the 53 Los Angeles County–designated Priority Scenic Drives identified in the 2015 Antelope Valley Area Plan – Town and Country.[8,9] These scenic drives have been identified in order to ensure that incompatible development is discouraged in designated Scenic Drives by developing and implementing design standards and guidelines for development within identified viewsheds of these routes, in accordance with Town and Country Policy COS 5.7 (Table 5.1.3-3, *County Scenic Drives*; see Figures 5.1.1-1, 5.1.1-2, 5.1.1-3, and 5.1.1-4).

[8] Los Angeles County Department of Regional Planning. June 16, 2015. Antelope Valley Area Plan – Town & Country. Available online at: http://planning.lacounty.gov/tnc/documents/

[9] Los Angeles County Department of Regional Planning. March 31, 2015. Map 4.2: Los Angeles County Town and Country Scenic Drives Map. Available at: http://planning.lacounty.gov/assets/upl/project/tnc_map4-2-20150601.pdf

TABLE 5.1.3-2
COMMUNITY STANDARDS DISTRICTS[1]

Community Standards District (CSD)	Number of Parcels within Subareas	Purpose of CSD	Significant Ridgeline Protection Standards	Street Lighting Standards	Outdoor Lighting Standards
Acton CSD	993 parcels – Acton subarea 158 parcels – Castaic/Santa Clarita/Agua Dulce subarea 42 parcels – East San Gabriel Mountains subarea	Protect and enhance the rural, equestrian and agricultural character of the community and its sensitive features including significant ecological areas, floodplains, hillsides, National Forest, archaeological resources, multipurpose trail system, and Western heritage architectural theme.	Preserve to the greatest extent possible the natural silhouette in significant ridgeline areas. Significant ridgelines are the ridgelines that surround or visually dominate the Acton landscape either through their size in relation to the hillside or mountain terrain of which they are a part, or through their visual dominance as characterized by a silhouetting appearance against the sky, or through their visual dominance due to proximity and view from existing development, freeways and highways designated as Major, Secondary or Limited Secondary on the Highway Plan.	—	Outdoor lighting shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District. Where outdoor lights are required, light fixtures in keeping with the Western frontier architectural style will be required.
Agua Dulce CSD	733 parcels – Castaic/Santa Clarita/Agua Dulce subarea	Preserve the secluded rural nature of the community; protect the equestrian, agricultural, historical, cultural, archaeological, and geological characteristics of the community; protect sensitive resources and areas, including Vasquez Rocks Natural Area, the Santa Clara River, and Angeles National Forest, and the various floodplains, hillsides, ridgelines, rock outcroppings, and significant ecological areas located within the CSD; and minimize the development of urban infrastructure that would alter the rural character of the community, including the development of sewer and water systems, paved local streets, street lights, concrete sidewalks, and concrete flood control systems. Maintain and enhance the pedestrian and equestrian trail system within the CSD, including the Pacific Crest National Scenic Trail.	The highest point of any structure, excluding chimneys, rooftop antennas, amateur radio antennas, roof-mounted solar panels, and wind energy conversion systems, shall be located at least 50 vertical feet and 50 horizontal feet from a significant ridgeline. Any modification to the requirements shall require a conditional use permit, in accordance with the applicable provisions of Part 1 of Chapter 22.56 of the Los Angeles County, California, Code of Ordinances. In approving such conditional use permit, the hearing officer or Commission shall make the following findings, in addition to those required by Section 22.56.090: i. That alternative sites within the project site have been considered and rejected due to documented hazards for potentially greater damage to biota on the alternative sites than on the subject site, as determined by a biologist; and ii. That the overall development is designed so that grading will not occur uniformly across the project area and will be limited to the pads required for individual structures.	Street lights shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District. Where installed, street lights shall be compatible in style and material with the poles on which they are mounted.	Outdoor lighting shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District.

TABLE 5.1.3-2
COMMUNITY STANDARDS DISTRICTS, *Continued*

Community Standards District (CSD)	Number of Parcels within Subareas	Purpose of CSD	Significant Ridgeline Protection Standards	Street Lighting Standards	Outdoor Lighting Standards
Altadena CSD	3 parcels – East San Gabriel Mountains subarea	Ensure that new and expanded structures are compatible in size and scale with the characteristics of surrounding residential neighborhoods, protecting the light, air, and privacy of existing single-family residences from negative impacts. The CSD is also established to minimize the visual and environmental impacts of development in hillside management areas.	i. The highest point of any structure shall be located at least 50 vertical feet and 50 horizontal feet from a significant ridgeline, excluding chimneys, rooftop antennas, amateur radio antennas, roof-mounted solar panels, and wind energy conversion systems. ii. Any modification to the standards set forth in subsection i. shall require a conditional use permit, pursuant to Part 1 of Chapter 22.56. In approving such conditional use permit, the Hearing Officer or Regional Planning Commission shall make the following findings in addition to those required by Section 22.56.090: (A) Alternative sites within the project site have been considered and rejected due to the presence of documented hazards or the potential for greater damage to biota, as determined by a biologist; and (B) The overall development is designed to comply with the development standards provided below: The overall development minimizes visual and environmental impacts to the surrounding area. In making this finding, the Hearing Officer or Regional Planning Commission shall require projects to comply with the following development standards regarding hillside design, where they apply to the project: • Grading is not conducted uniformly across the entirety of the project and is limited to the pads required of individual structures. • Terracing and retention walls, if unshielded by landscaping and visible from downslope, are designed with varied gradients and curvilinear shapes that mimic or blend into surrounding contours. • Structures, retention walls, and graded areas are screened by landscaping and vegetation. • Structures are placed to minimize their visibility from surrounding parcels or public viewpoints downslope. • Structures incorporate articulated surface faces instead of flat blank walls. • Structures incorporate colors, materials, and textures with an average Light Reflectance Value of 35 percent or less. • Where new tree planting occurs, new trees blend with surrounding vegetation. • Existing trail right-of-ways or trailheads within the project, dedicated to the County as of the effective date of the ordinance creating this subsection, are improved if necessary to ensure their ongoing use.	—	—

TABLE 5.1.3-2
COMMUNITY STANDARDS DISTRICTS, *Continued*

Community Standards District (CSD)	Number of Parcels within Subareas	Purpose of CSD	Significant Ridgeline Protection Standards	Street Lighting Standards	Outdoor Lighting Standards
Castaic Area CSD	354 parcels – Castaic/Santa Clarita/Agua Dulce subarea	Protect the rural character, unique appearance, and natural resources of the Castaic Area communities.	For purposes of this CSD, significant ridgelines shall consist of primary and secondary ridgelines. Except as provided below, no development, grading, construction, or improvements shall be allowed on a significant ridgeline within a 50-foot radius from every point on the crest of a primary ridgeline or within a 25-foot radius from every point on the crest of a secondary ridgeline. **Significant Ridgeline Exemptions** Provided an approval is obtained for an exemption as described below, the following structures or uses may be permitted on significant ridgelines, or within the respective 50-foot and 25-foot restricted areas surrounding such significant ridgelines: i. Accessory buildings or structures; ii. Additions and/or modifications to an existing single-family residence; iii. New single-family residences where not more than one such residence is proposed to be built by the same person on contiguous parcels of land; iv. Open spaces, conservation areas, parks, recreation areas, and/or trails; v. Water tanks or transmission facilities; vi. Architecturally superior structures, other than new single-family residences, which maximize the aesthetic appeal of the hillsides and significant ridgelines, and minimize the disturbance of the natural setting; and vii. Roads providing access to any of the structures or uses described above. **Significant Ridgeline Exemption Approval** No exemption shall be allowed unless the applicant obtains: (A) A director's review and approval pursuant to subsection G, below, for structures or uses described in subsection i, ii, and iii; or (B) A conditional use permit, as provided in Part 1, Chapter 22.56, for structures or uses described in subsections iv, v, or vi. The application for the conditional use permit must contain the information either required by or described in Sections 22.56.030, 22.56.040 and, where applicable, subsections D and E of Section 22.56.215. ii. In addition to any information required for the director's approval and the conditional use permit, an application for a significant ridgeline exemption approval shall also demonstrate that the proposed use: (A) Is compatible with adjacent uses, the character of the neighboring community, and the goals and policies of the general plan; (B) Will leave the crest of the significant ridgeline in its natural state; (C) Is designed to minimize the amount of grading necessary and will use landscaping to minimize the visual impact of the project; (D) Will not be materially detrimental to the visual character of the neighborhood or the Castaic communities; (E) Will not impede the normal and orderly development of surrounding properties and will not promote encroachments on significant ridgelines; and (F) Will not degrade the visual integrity of the significant ridgeline, as verified through submission of a precise illustration and depiction.	—	Outdoor lighting shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District.

TABLE 5.1.3-2
COMMUNITY STANDARDS DISTRICTS, *Continued*

Community Standards District (CSD)	Number of Parcels within Subareas	Purpose of CSD	Significant Ridgeline Protection Standards	Street Lighting Standards	Outdoor Lighting Standards
Elizabeth Lake and Lake Hughes CSD	401 parcels – Lake Hughes/Gorman/ West of Lancaster subarea	Enhance the quality of life in these communities by preserving and protecting their rural character and the beauty of their environmental setting.	The highest point of a structure shall be located at least one hundred-fifty (150) vertical feet and one hundred-fifty (150) horizontal feet in a southerly direction from a significant ridgeline, excluding chimneys, rooftop antennas, amateur radio antennas, and wind energy conversion systems. No portion of any structure shall be located less than fifty (50) horizontal feet in a northerly direction from a significant ridgeline, excluding amateur radio antennas, chimneys, rooftop antennas, and wind energy conversion systems. Any modification to the requirements shall require a minor conditional use permit, as provided in Section 22.56.085. In approving such permit, the Hearing Officer or Commission shall make the following findings in addition to those required by Section 22.56.090: i. Alternative sites within the project site have been considered and eliminated from consideration due to their physical infeasibility or their potential for substantial habitat damage or destruction; and ii. The project maintains the maximum view of the applicable significant ridgeline through design features, including, but not limited to, minimized grading; reduced structural height; use of shapes, materials, and colors that blend with the surrounding environment; and/or use of native drought-tolerant landscaping for concealment.	Street lights shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District. Where installed, street lights shall be compatible in style and material with the poles on which they are mounted.	Outdoor lighting shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District.
Juniper Hills CSD	391 parcels – Lake Los Angeles/ Llano/ Valyermo/ Littlerock subarea 29 parcels – East San Gabriel Mountains subarea	Maintain the low densities, secluded rural character, unique desert foothill appearance, and significant natural resources of the community.	—	Street lights shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District. Where installed, street lights shall be compatible in style and material with the poles on which they are mounted.	Outdoor lighting shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District.
Leona Valley CSD	174 parcels – Lake Hughes/Gorman/ West of Lancaster subarea	Protect the community's unique appeal, including its rural agricultural character, the portion of the Ritter Ridge Significant Ecological Area within Leona Valley, and the floodplain and hillside management areas defined by the Antelope Valley Area Plan.	—	—	Outdoor lighting, including street lights, shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District.
San Francisquito Canyon CSD	724 parcels – Castaic/Santa Clarita/Agua Dulce subarea	Protect and enhance the community's secluded rural, equestrian, and agricultural character as well as its natural features, including ridgelines, significant ecological areas, and flood plains.	The highest point of a structure shall be located at fifty (50) vertical feet and fifty (50) horizontal feet from a significant ridgeline, excluding chimneys, rooftop antennas, amateur radio antennas, and wind energy conversion systems. Any modification to the requirements shall require a minor conditional use permit, as provided in Section 22.56.085. In approving such permit, the Director, Hearing Officer, or Commission shall make the following findings in addition to those required by Section 22.56.090 i. Alternative sites within the project have been considered and eliminated from consideration due to their physical infeasibility or their potential for substantial habitat damage or destruction; and ii. The project maintains the maximum view of the applicable significant ridgeline through design features, including, but not limited to, minimized grading; reduced structural height; use of shapes, materials, and colors that blend with the surrounding environment; and/or use of native drought-tolerant landscaping for concealment.	Street lights shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District. Where installed, street lights shall be compatible in style and material with the poles on which they are mounted.	Outdoor lighting shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District.

TABLE 5.1.3-2
COMMUNITY STANDARDS DISTRICTS, *Continued*

Community Standards District (CSD)	Number of Parcels within Subareas	Purpose of CSD	Significant Ridgeline Protection Standards	Street Lighting Standards	Outdoor Lighting Standards
Southeast Antelope Valley CSD	383 parcels – Lake Los Angeles/ Llano/Valyermo/ Littlerock subarea	Protect and enhance the community's rural, equestrian, and agricultural character as well as its natural features, including significant ecological areas, flood plains, and desert terrain.	—	Street lights shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District.	Outdoor lighting shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District.
Stonyvale CSD	9 parcels – East San Gabriel Mountains subarea	Facilitate the construction of single-family residences, accessory structures, fences, and walls in the Stonyvale area affected by the 2009 Station Fire, without endangering the health and safety of residents. This CSD does not modify or waive any other provisions of the County Code or any local, state, and federal laws or regulations.	—	—	—

SOURCE: [1] Municode. Accessed 6 May 2015. Los Angeles County, California, Code of Ordinances > > Title 22 – Planning and Zoning > > Division 1 – Planning and Zoning > > Chapter 22.44 – Supplemental Districts > > Part 2 Community Standards Districts. Available online at: https://library.municode.com/HTML/16274/level4/TIT22PLZO_DIV1PLZO_CH22.44SUDI_PT2COSTDI.html#TIT22PLZO_DIV1PLZO_CH22.44SUDI_PT2COSTDI_22.44.127ALCOSTDI

TABLE 5.1.3-3
COUNTY SCENIC DRIVES[1]

Scenic Drive Number[2,3]	Acton Subarea	Castaic/Santa Clarita/Agua Dulce Subarea	Antelope Valley Northeast Subarea	East San Gabriel Mountains Subarea	Lake Hughes/Gorman/West of Lancaster Subarea	Lake Los Angeles/Llano/ Valyermo/Littlerock Subarea	Lancaster Northeast Subarea
1, 2. Golden State Freeway (I-5) from Lake Hughes Road north to Los Angeles-Kern County line	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
3. Gorman Post Road	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
4. Old Ridge Route Road	Not visible	**Visible**	Not visible	Not visible	**Visible**	Not visible	Not visible
5. West Lancaster Road	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
6. Three Points Road	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
7. Pine Canyon Road	Not visible	Not visible	Not visible	Not visible	**Visible**	Not visible	Not visible
8. Lancaster Road	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
9. Lake Hughes Road	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
10. Munz Ranch Road	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
11. San Francisquito Canyon Road	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
12. Fairmont Neenach Drive	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
13. West Avenue I	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
14. 110th Street West	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
15. Johnson Road	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
16. Elizabeth Lake Road	**Visible**	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	**Visible**	Not visible
17. Spunky Canyon Road	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
18. Bouquet Canyon Road	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
19. Little Tujunga Road	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	Not visible
20. 90th Street West	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible
23. Goode Hill Road West	Not visible	Not visible	Not visible	Not visible	**Visible**	Not visible	Not visible

TABLE 5.1.3-3
COUNTY SCENIC DRIVES, *Continued*

Scenic Drive Number[2,3]	Acton Subarea	Castaic/Santa Clarita/Agua Dulce Subarea	Antelope Valley Northeast Subarea	East San Gabriel Mountains Subarea	Lake Hughes/Gorman/West of Lancaster Subarea	Lake Los Angeles/Llano/ Valyermo/Littlerock Subarea	Lancaster Northeast Subarea
24. Antelope Valley Freeway (SR-14)	**Visible in foreground; passes through subarea**	**Visible in foreground; passes through subarea**	Not visible	Not visible	**Visible**	Not visible	Not visible
25. Soledad Canyon Road	**Visible in foreground; passes through subarea**	**Visible in foreground; passes through subarea**	Not visible	Not visible	Not visible	Not visible	Not visible
27. Big Tujunga Canyon Road	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	Not visible
28. Aliso Canyon Road	**Visible in foreground; passes through subarea**	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	Not visible
29. Angeles Forest Highway	**Visible in foreground; passes through subarea**	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	Not visible
31. Barrel Springs Road	**Visible**	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible
32. Mount Emma Road	**Visible in foreground; passes through subarea**	Not visible	Not visible	**Visible**	Not visible	**Visible in foreground; passes through subarea**	Not visible
33. Upper Big Tujunga Canyon Road	Not visible	Not visible	Not visible	**Visible**	Not visible	Not visible	Not visible
34. Mount Wilson – Red Box Road	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	Not visible
35. Cheseboro Road	Not visible	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible
37. Angeles Crest Highway	**Visible in background**	Not visible	**Visible**	**Visible**	**Visible in background**	**Visible**	**Visible**
38. 82nd Street East	Not visible	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	**Visible in background**
39. 106th Street East	**Visible in background**	Not visible	Not visible	**Visible**	**Visible in background**	**Visible in foreground; passes through subarea**	**Visible in background**
40. Juniper Hills Road	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	**Visible in foreground; passes through subarea**	**Visible in background**
41. Longview Road	Not visible	Not visible	Not visible	**Visible**	Not visible	**Visible in foreground; passes through subarea**	Not visible
42. Pallett Creek Road	Not visible	Not visible	Not visible	**Visible**	Not visible	**Visible in foreground; passes through subarea**	Not visible
43. Devils Punchbowl Road	Not visible	Not visible	Not visible	**Visible**	Not visible	**Visible**	Not visible
44. 200th Street East	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	**Visible in background**	Not visible
45. East Avenue J	Not visible	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	**Visible in foreground; passes through subarea**
46. 150th Street East	Not visible	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	**Visible in foreground; passes through subarea**
47. 165th Street East	Not visible	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	**Visible**
48. Bobs Gap Road	Not visible	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible

TABLE 5.1.3-3
COUNTY SCENIC DRIVES, *Continued*

Scenic Drive Number[2,3]	Acton Subarea	Castaic/Santa Clarita/Agua Dulce Subarea	Antelope Valley Northeast Subarea	East San Gabriel Mountains Subarea	Lake Hughes/Gorman/West of Lancaster Subarea	Lake Los Angeles/Llano/ Valyermo/Littlerock Subarea	Lancaster Northeast Subarea
49. Big Rock Creek Road	**Visible in background**	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	**Visible in foreground; passes through subarea**	Not visible
50. San Gabriel Canyon Road	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	Not visible
51. East Avenue O	Not visible	Not visible	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible
52. Antelope Highway	Not visible	Not visible	Not visible	**Visible**	Not visible	**Visible in foreground; passes through subarea**	Not visible
53. Largo Vista Road	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	**Visible in foreground; passes through subarea**	Not visible
54. Big Pines Highway	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	**Visible**	Not visible
55. East Fork Road	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	Not visible
56. Glendora Mountain Road	Not visible	Not visible	Not visible	**Visible**	Not visible	Not visible	Not visible
57. Glendora Ridge Road	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	Not visible
58. Mount Baldy Road	Not visible	Not visible	Not visible	**Visible in foreground; passes through subarea**	Not visible	Not visible	Not visible
TOTAL VISIBILITY LEVEL OF SUBJECT PARCELS FROM COUNTY SCENIC DRIVES	**Visible from 9 County Scenic Drives (including 5 drives in the foreground)**	**Visible from 7 County Scenic Drives (including 6 drives in the foreground)**	**Visible from 2 County Scenic Drives (including 1 drive in the foreground)**	**Visible from 22 County Scenic Drives (including 13 drives in the foreground)**	**Visible from 22 County Scenic Drives (including 16 drives in the foreground)**	**Visible from 21 County Scenic Drives (including 16 drives in the foreground)**	**Visible from 7 County Scenic Drives (including 2 drives in the foreground)**

NOTES:
[1] Visibility determination is based on Google Earth Street View and Ground View Imagery using KMLs of the parcel boundaries for reference.
[2] Los Angeles County Department of Regional Planning. March 31, 2015. Map 4.2: Los Angeles County Town and Country Scenic Drives Map. Available at: http://planning.lacounty.gov/assets/upl/project/tnc_map4-2-20150601.pdf
[3] The County has removed five road segments from the 58-route Scenic Route List but retained the original numeric designations for the scenic routes.

Santa Clarita Valley Area Plan Designated Scenic Resources

The Conservation Element of the Santa Clarita Valley Area Plan has identified the following scenic resources within the Santa Clarita Valley planning area as significant resources to be maintained to preserve the visual character of the valley (see Figure 5.1.3-2, *Santa Clarita Valley Area Plan Designated Scenic Canyons, Woodlands, and Scenic Water Bodies*, and Figure 5.1.3-3, *Santa Clarita Valley Area Plan Designated Scenic Landmarks, Significant Ridgelines, and Significant Ecological Areas*, at the end of this section):[10]

- **Scenic Canyons,** which have remained undeveloped and support a variety of natural habitats: Five of the seven scenic canyons identified by the Santa Clarita Valley Area Plan are located within the study area for the proposed initiative (see Figure 5.1.3-2):
    - San Francisquito Canyon
    - Placerita Canyon
    - Bouquet Canyon
    - Pico Canyon
    - Tick Canyon

- **Scenic Woodlands,** which contribute to rural and scenic character: The Santa Clarita Valley Area Plan strives to protect existing oak woodland and cottonwood-willow riparian forest areas, several areas of which have been adopted by the County as Significant Ecological Areas (see Figures 5.1.3-2 and 5.1.3-3). The Castaic/Santa Clarita/Agua Dulce subarea includes parcels located within the Santa Clarita Woodlands Park and subject parcels that intersect with a total of approximately 174 acres of southern coast live oak riparian forest and approximately 25 acres of southern cottonwood willow riparian forest plant communities that should be protected in accordance with the Santa Clarita Valley Area Plan.[11]

- **Scenic Water Bodies,** which provide scenic visual relief from urbanization as well as habitat for wildlife: Nine (9) of the 11 scenic water bodies identified by the Santa Clarita Valley Area Plan are located within the study area for the proposed initiative (see Figure 5.1.3-2):
    - Santa Clara River and its major tributaries:
        - San Francisquito Canyon
        - Oak Springs Canyon
        - Bouquet Canyon
        - Placerita Creek
        - Towsley Creek
        - Castaic Creek

[10] Los Angeles County Department of Regional Planning. 25 November 1980. Los Angeles County General Plan Conservation and Open Space Element. Available online at http://planning.lacounty.gov/assets/upl/project/gp_web80-conservation-and-open-space.pdf

[11] California Department of Fish and Wildlife. California Natural Diversity Database (CNDDB). Vegetation Classification and Mapping Program. Spatial data accessed in May 2015. Main website: http://www.dfg.ca.gov/biogeodata/cnddb/

- Sand Canyon
- Mint Canyon

- **Vasquez Rocks Natural Area,** which is both a visual and historic landmark in the community (see Figure 5.1.3-3): The nearest subject parcel within the Castaic/Santa Clarita/Agua Dulce subarea is located within 200 feet of Vasquez Rocks Natural Area. Parcels within the Castaic/Santa Clarita/Agua Dulce subarea and Acton subarea are visible from this park. However, the nearby subject parcels to the north and west of the park are adjacent to existing rural residential development.

- **Significant Ridgelines,** which create a sense of place for each neighborhood (see Figure 5.1.3-3).

City-Designated Scenic Highways

Although the subject parcels are located within unincorporated Los Angeles County, 375 of the 42,867 subject parcels (0.9 percent) within the Castaic/Santa Clarita/Agua Dulce subarea, Lake Hughes/Gorman/West of Lancaster subarea, East San Gabriel Mountains subarea, and Acton subarea are potentially within the visible range of city-designated scenic highways or highway corridors in the adjacent City of Palmdale. The nearby Cities of Santa Clarita and Lancaster have not designated city scenic highway corridors, and the subject parcels within the proposed initiative study area, including the East San Gabriel Mountains subarea and Castaic/Santa Clarita/Agua Dulce subarea, are not visible from any of the nearby City of Los Angeles-designated City scenic highways due to topography and distance (see Figures 5.1.1-1, 5.1.1-2, 5.1.1-3, and 5.1.1-4).[12]

The nearby City of Palmdale has designated eight City scenic highways, which have been designated in order to preserve the existing panoramic vistas of rugged mountains, steep canyon slopes covered with native chaparral, extensive areas of the Mojave Desert, and rural or small-town settings. Development has not yet significantly reduced scenic potential, and the City has identified an opportunity for public investment to ensure the future maintenance of these eight City scenic highways, which would have design implications or development restrictions for single-family residences (Table 5.1.3-4, *Visibility of Subject Parcels from Adjacent City-Designated Scenic Highways*):[13]

Barrel Springs Road: The designated scenic highway portion of Barrel Springs Road within the City of Palmdale is located approximately 0.9 mile north of the nearest parcel within the Acton subarea and approximately 4.3 miles west of the nearest subject parcel within the Lake Los Angeles/Llano/Valyermo/Littlerock subarea (see Figure 5.1.1-2).

Tierra Subida Avenue: The designated scenic highway portion of Tierra Subida Avenue within the City of Palmdale is located approximately 0.5 mile northeast of the nearest parcels within the Acton subarea (see Figure 5.1.1-2).

[12] City of Los Angeles Department of City Planning. Map E: Transportation Element of the General Plan: Scenic Highways in the City of Los Angeles. Website. Available online at: http://cityplanning.lacity.org/

[13] City of Palmdale. January 25, 1993. General Plan. PDF available online at: http://www.cityofpalmdale.org/departments/planning/general_plan/general_plan.pdf

Sierra Highway, South of Avenue S: The designated scenic highway portion of Sierra Highway within the City of Palmdale is located approximately 0.7 mile northeast of the Acton subarea (see Figure 5.1.1-2).

Elizabeth Lake Road: The designated scenic highway portion of Elizabeth Lake Road within the City of Palmdale is located adjacent to the nearest parcel within the Lake Hughes/Gorman/West of Lancaster subarea (see Figure 5.1.1-1).

Pearblossom Highway: The designated scenic highway portion of Pearblossom Highway within the City of Palmdale is located approximately 1.6 miles northwest of the nearest parcel within the Lake Los Angeles/Llano/Valyermo/Littlerock subarea, approximately 1.7 miles northeast of the nearest parcels within the Acton subarea, an approximately 5.1 miles north of the East San Gabriel Mountains subarea (see Figure 5.1.1-2).

Bouquet Canyon Road: The designated scenic highway portion of Bouquet Canyon Road within the City of Palmdale is located adjacent to the nearest parcel within the Lake Hughes/Gorman/West of Lancaster subarea (see Figure 5.1.1-1).

Godde Hill Road: The designated scenic highway portion of Godde Hill Road within the City of Palmdale is located approximately 300 feet south of the nearest parcel within the Lake Hughes/Gorman/West of Lancaster subarea (see Figure 5.1.1-1).

Antelope Valley Freeway, south of Rayburn Road: The designated scenic highway portion of Antelope Valley Freeway (SR 14) within the City of Palmdale is located approximately 1.0 mile east of the nearest parcels within the Acton subarea (see Figure 5.1.1-2).

TABLE 5.1.3-4
VISIBILITY OF SUBJECT PARCELS FROM ADJACENT CITY-DESIGNATED SCENIC HIGHWAYS[1]

Subarea	Barrel Springs Road	Tierra Subida Avenue	Sierra Highway, South of Avenue S	Elizabeth Lake Road	Pearblossom Highway	Bouquet Canyon Road	Godde Hill Road	Antelope Valley Freeway, South of Rayburn Road
Acton	Visible due to hilltop location	Visible due to hilltop location	Visible due to hilltop location	Not visible due to distance, topography, and vegetation in the foreground	Visible due to hilltop location	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Visible due to hilltop location
Antelope Valley Northeast	Not visible	Not visible	Not visible	Not visible	Not visible	Not visible	Not visible	Not visible
Castaic/Santa Clarita/Agua Dulce	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, existing residences, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground
East San Gabriel Mountains	Not visible due to topography, buildings, and vegetation in the foreground	Not visible	Not visible	Not visible	**Barely visible due to topography, buildings, and vegetation in the foreground**	Not visible	Not visible	Not visible
Lake Hughes/Gorman/West of Lancaster	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Visible due to proximity to the designated segment of the road and hilltop location	Not visible due to distance, topography, existing residences, and vegetation in the foreground	Visible due to proximity to the designated segment of the road and hilltop location	Visible due to proximity to the designated segment of the road and hilltop location	Not visible due to distance, topography, and vegetation in the foreground
Lake Los Angeles/Llano/ Valyermo/Littlerock	Not visible due to topography and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Barely visible due to topography and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground
Lancaster Northeast	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, existing residences, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible due to distance, topography, and vegetation in the foreground	Not visible
TOTAL VISIBILITY LEVEL	**Visible from Acton subarea**	**Visible from Acton subarea**	**Visible from Acton subarea**	**Visible from Lake Hughes/Gorman/West of Lancaster subarea**	**Visible from Acton subarea; barely visible from Lake Los Angeles/ Llano/Valyermo/ Littlerock subarea and East San Gabriel Mountains subarea**	**Visible from Lake Hughes/Gorman/West of Lancaster subarea**	**Visible from Lake Hughes/Gorman/West of Lancaster subarea**	**Visible from Acton subarea**

NOTES:
[1]Visibility determination is based on Google Earth Street View and Ground View Imagery using .KML file format spatial GIS data of the parcel boundaries for reference.

5.1.4 Light and Glare

Within Los Angeles County, the major sources of nighttime sky glow are the cities (i.e., Los Angeles, San Fernando, Santa Clarita, Lancaster, and Palmdale), transportation corridors (i.e., Interstate 5 and State Route 14), and the established communities of Gorman, Neenach, Lake Hughes, Elizabeth Lake, Green Valley, Lake Los Angeles, Santa Clarita Valley, Acton, Agua Dulce, and Valyermo. According to Earth at Night 2012 data, a composite of city light data acquired by the SuomiNPP satellite over nine days in April 2012 and 13 days in October 2012,[14] approximately 45.9 percent (19,664 parcels) of the 42,867 subject parcels are located within one mile of an already developed area that currently produces high levels of nighttime skyglow. These parcels are concentrated within the Acton subarea, Castaic/Santa Clarita/Agua Dulce subarea, and the East San Gabriel Mountains subarea within the edges of the Angeles National Forest. Less than half of the subject parcels within the Lake Hughes/Gorman/West of Lancaster subarea, the Lancaster Northeast subarea, and the Lake Los Angeles/Llano/Valyermo/Littlerock subarea are located within one mile of an existing developed area that is a source of nighttime sky glow, and none of the parcels within the Antelope Valley Northeast subarea are located within one mile of an existing developed area (the area is undeveloped and dark at night).

The nighttime light levels in subject parcels within the Antelope Valley Northeast subarea, Lake Los Angeles/Llano/Valyermo/Littlerock subarea, Lake Hughes/Gorman/West of Lancaster subarea, and Lancaster Northeast subarea are very low, while the nighttime light levels in the East San Gabriel Mountains subarea, Castaic/Santa Clarita/Agua Dulce subarea, and Acton subarea are moderate due to the nighttime glare from the adjacent cities of Los Angeles, Santa Clarita, Palmdale, and Lancaster.[15] The relative levels of light and glare are summarized in Table 5.1.4-1, *Relative Levels of Light and Glare*. All of the subject parcels within the Antelope Valley Northeast subarea, East San Gabriel Mountains subarea, Lake Hughes/Gorman/West of Lancaster subarea, Lake Los Angeles/Llano/Valyermo/Littlerock subarea, and Lancaster Northeast subarea, as well as 99.9 percent of the subject parcels within the Acton subarea and 85.4 percent of the subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea, are located within the County's Rural Outdoor Lighting District and subject to restrictions in terms of producing sources of light and glare at night (see Figure 5.1.3-1).

[14] NASA Earth Observatory/NOAA NGDC. 7 December 2012. Earth at Night 2012. Imagery available from Google Earth Map Gallery.

[15] NASA Earth Observatory/NOAA NGDC. April and October 2012. Earth at Night 2012. Available from Google Earth Maps Gallery.

TABLE 5.1.4-1
RELATIVE LEVELS OF LIGHT AND GLARE

Subarea	Nighttime Light Level[1]	Nighttime Glare Level	Daytime Glare Level
Acton	Low to Moderate	Low on parcels near the Angeles National Forest to Moderate near the Antelope Valley Freeway.	Moderate due to the presence of paved roads, residential development and infrastructure, and high vehicle traffic levels on the Antelope Valley Freeway.
Antelope Valley Northeast	Very Low	Very Low throughout the subarea.	Very Low due to the lack of paved roads, absence of large water bodies, low traffic levels, and low level of development and infrastructure.
Castaic/Santa Clarita/Agua Dulce	Moderate to High	Low in isolated rural areas to High near Santa Clarita and major freeways.	Moderate to High due to the presence of paved roads, commercial and residential development and infrastructure, high vehicle traffic levels on major roads and freeways, and reflective water bodies.
East San Gabriel Mountains	Very Low to High	Very low within the Angeles National Forest; moderate within the East Fork of the San Gabriel River and near the communities of Wrightwood, Acton, and San Antonio Heights; and high within the southern foothills of the San Gabriel Mountains near the urban and suburban development of the Los Angeles basin.	Low due to the presence of both paved and dirt roads, sparse development and infrastructure, and trees.
Lake Hughes/ Gorman/West of Lancaster	Very Low	Very Low in rural areas to Low in the communities of Gorman, Lake Hughes, and Leona Valley and near Quartz Hill, Lancaster, and Palmdale.	Low due to the presence of both paved and dirt roads, and sparse development and infrastructure.
Lake Los Angeles/Llano / Valyermo/ Littlerock	Low	Low in rural areas to moderate near the communities of Lake Los Angeles, Littlerock, and Pearblossom and the City of Palmdale.	Low due to the presence of both paved and dirt roads, sparse development and infrastructure, and subgrade location of the aqueduct.
Lancaster Northeast	Low	Low in rural areas to Moderate adjacent to the City of Lancaster.	Low due to the presence of both paved and dirt roads, and sparse development and infrastructure.

NOTE: Relative nighttime light level was qualitatively evaluated based on source and the following criteria:

- **Very Low:** Very few sources of 2012 nighttime sky glow intersect with parcels.
- **Low:** Parcels within subarea are towards the edge of sources of 2012 nighttime sky glow and less than ½ of parcels within subarea intersect with 2012 sources of nighttime sky glow.
- **Moderate:** Approximately ½ of parcels within subareas intersect with sources of 2012 nighttime sky glow.
- **High:** More than half of parcels are located within 2012 nighttime sky glow area.

SOURCE:
[1]NASA Earth Observatory/NOAA NGDC. April and October 2012. Earth at Night 2012. Available from Google Earth Maps Gallery.

5.2 PROPOSED INITIATIVE

5.2.1 Scenic Vistas

According to the GIS viewshed analysis, new homes and hauled water tanks on 33,356 of the 42,867 subject parcels (78 percent) would potentially be visible from 1965 County-designated scenic vistas and roadside rests that have the potential to be designated in the anticipated Scenic Resources Ordinance identified in Chapter 16 of the Los Angeles County General Plan 2035 Update (see Figure 5.2.1-1, *Viewshed Analysis for Proposed Initiative*, at the end of this section; and Table 5.2.1-1, *Proposed Initiative Parcels Visible from Vista Points or Roadside Rests*). However, these are not currently designated as scenic vistas, as of the March 24, 2015, approval of the Los Angeles County General Plan 2035 Update.

TABLE 5.2.1-1
PROPOSED INITIATIVE PARCELS VISIBLE FROM VISTA POINTS OR ROADSIDE RESTS

Subarea	Reservoir Summit Vista Point (#12)	Inspiration Point Vista Point (#463)	Big Rock Canyon Vista Point (#464)	State Roadside Rest #8
Acton	0	0	281* (Not visible)[1]	90* (Not visible)[1]
Antelope Valley Northeast	0	1,307* (Not visible)[1]	1,205* (Not visible)[1]	0
Castaic/Santa Clarita/Agua Dulce	67 (Very Low Visibility)[1]	0	0	2* (Not visible)[1]
East San Gabriel Mountains	0	1 (Low visibility)[1]	41 (Moderate visibility)[1]	2* (Not visible)[1]
Lake Hughes/Gorman/ West of Lancaster	65 (Moderate Visibility)[1]	0	13,487* (Not visible)[1]	202* (Not visible)[1]
Lake Los Angeles/Llano/ Valyermo/Littlerock	0	86 (Low visibility)[1]	11,173 (Moderate visibility)[1]	0
Lancaster Northeast	0	0	6,785* (Not visible)[1]	0
Total	**132 (Very Low to Moderate Visibility)**	**2,124 (Low Visibility**	**11,214 (Moderate Visibility)**	**Not Visible**

NOTES:
*These parcels would be barely visible in the distance because they are located over 15 miles away from the vista point/roadside rest.
[1]Visibility determination is based on Google Earth Street View and Ground View Imagery, using .KML file format spatial GIS data of the parcel boundaries for reference. Existing buildings and infrastructure, trees, and large shrubs in the foreground of vista points are not factors in viewshed analysis; therefore, Google Earth was used to verify visibility.

Additionally, the proposed initiative would not result in impacts to aesthetics in relation to scenic vistas because the subject parcels within the Acton, Lake Hughes/Gorman/West of Lancaster, Lancaster Northeast, and Lake Los Angeles/Llano/Valyermo/Littlerock subareas that have the potential to be visible from the Caltrans-designated Lamont Odett Vista Point are located at a far

enough distance and located to the south of the vista point, which would not affect the intended designated vista from this point of Aerospace Valley, Lake Palmdale, and the California Aqueduct toward the north and northeast. Therefore, the proposed initiative would not obstruct or affect the view of the valley in the foreground or middleground of this foreground-middleground focused vista, and no impacts would occur.

The proposed initiative would be expected to result in no impacts to aesthetics in relation to scenic vistas because the Los Angeles County General Plan 2035 Update refers to more localized planning documents for designation of local scenic resources, such as the significant ridgelines identified in the 2012 Santa Clarita Valley Area Plan and the Priority Scenic Drives identified in the 2015 Antelope Valley Area Plan. No scenic vistas have been designated in the Santa Clarita Valley Area Plan or the Antelope Valley Area Plan.[16] The total anticipated 3,680 single-family residences that would be expected to be developed over the 20-year planning horizon would be a minor increase in the total development in the North County Area. The viewshed from the four scenic vistas and roadside rests designated in the 1965 Regional Recreation Areas Plan would be generally consistent with existing viewsheds characterized by a mix of open space, agricultural and rural residential land uses. Therefore, the proposed initiative would not be expected to result in significant impacts to aesthetics in regard to having a substantial adverse effect on a scenic vista.

5.2.2 Scenic Highways

According to the GIS viewshed analysis, new homes and hauled water tanks on 34,744 of the 42,867 subject parcels (81.1 percent) would potentially be visible from officially designated and eligible State scenic highways (Table 5.2.2-1, *Proposed Initiative Parcels Potentially Visible from State Scenic Highways*). All the parcels are vacant; therefore, the proposed initiative would not affect historic buildings. Rock outcrops are present on subject parcels within the Acton, Castaic/Santa Clarita/Agua Dulce, East San Gabriel Mountains, Lake Hughes/Gorman/West of Lancaster, and Lake Los Angeles/Valyermo/Llano/Littlerock subareas, where there is a potential for rock outcrops to be affected on parcels within State scenic highway viewsheds. Rock outcrops are rare within the Antelope Valley Northeast and Lancaster Northeast subareas. The percentage of parcels containing trees that are potentially visible from State designated and eligible scenic highways ranges from zero percent in the Antelope Valley Northeast subarea to approximately 40.8 percent in the Castaic/Santa Clarita/Agua Dulce subarea.

[16] As of the March 24, 2015 approval of the Los Angeles County General Plan 2035 Update, there are no officially designated County scenic vistas. As the County intends to develop a Scenic Resources Ordinance as part of its implementation program and may include scenic resources from the County's 1965 Regional Recreation Areas Plan, these scenic vistas have been retained in the visual analysis for reference.

TABLE 5.2.2-1
PROPOSED INITIATIVE PARCELS POTENTIALLY VISIBLE FROM STATE SCENIC HIGHWAYS

Subarea	Number of Parcels within Viewshed of Designated State Scenic Highways	Number of Parcels within Viewshed of Eligible State Scenic Highways	Total Parcels within Viewshed of State Scenic Highways	Number of Parcels Containing Trees within Viewshed of Designated and Eligible State Scenic Highways	Percent of Parcels Containing Trees within Viewshed of Designated and Eligible Scenic Highways
Acton	315	92	407	39	9.6%
Antelope Valley Northeast	1,466	0	1,466	0	0.0%
Castaic/Santa Clarita/Agua Dulce	6	249	255	104	40.8%
East San Gabriel Mountains	30	82	112	45	40.2%
Lake Hughes/ Gorman/ West of Lancaster	13,603	12	13,615	219	1.6%
Lake Los Angeles/Llano/ Valyermo/ Littlerock	12,095	0	12,095	1	0.01%
Lancaster Northeast	6,794	0	6,806	29	0.4%
Total	**34,309**	**435**	**34,744**	**437**	**1.3%**

Officially Designated State Scenic Highways

State Route 2

The subject parcels within the East San Gabriel Mountains subarea at the western edge of Wrightwood and the eastern edge of the Los Angeles County line are located within the SR-2 scenic corridor and would be expected to substantially damage scenic resources (trees and rock outcroppings) within a State scenic highway and degrade the rural scenic character of the SR-2 viewshed. The majority of these subject parcels within the East San Gabriel Mountains subarea that are located within the SR-2 viewshed contain several pine trees, and there is a potential for rock outcrops to be located on these parcels as well, that should not be removed in order to preserve the scenic value of the designated scenic highway corridor. Although some of the subject parcels within the Lake Los Angeles/Llano/Valyermo/Littlerock subarea are visible in the distance from portions of SR-2, the parcels within this subarea affected by the proposed initiative do not contain scenic resources that are essential to the scenic character of the SR-2 scenic corridor.

State Route 33

Due to distance (at least 29.5 miles) and intervening topography, any residential or hauled water construction on the subject parcels would not be visible from SR-33 in Ventura County.

Eligible State Scenic Highways

Interstate 5

The subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea are located on a County-designated significant ridgeline, are within proximity to the I-5, and are visible from I-5. These subject parcels contain scenic trees within the I-5 scenic corridor that should not be removed in order to preserve the scenic value of the eligible scenic highway corridor.

State Route 126

The subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea are on a County-designated significant ridgeline and are visible from SR-126. However, no scenic trees, rock outcroppings, or historic buildings are located on these parcels within the SR-126 scenic corridor that would need to be preserved.

State Route 210

Subject parcels on the south-facing slope of the San Gabriel Mountains within the East San Gabriel Mountains subarea are visible from SR-210 and contain scenic trees within the SR-210 corridor that should not be removed in order to preserve the scenic value of the eligible scenic highway corridor. The subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea are not visible from SR-210 due to intervening topography.

State Route 39

The subject parcels located on ridgelines and slopes facing the San Gabriel River within the East San Gabriel Mountains subarea near the San Gabriel Reservoir, Morris Reservoir, and within Azusa Canyon at the southern boundary of the Angeles National Forest are visible from SR-39. These subject parcels within the East San Gabriel Mountains subarea contain scenic trees within the SR-39 corridor that should not be removed in order to preserve the scenic value of the eligible scenic highway corridor.

Officially State-Designated County Scenic Highways

The subject parcels are not visible from the nearest officially State-designated County scenic highway, Malibu Canyon-Las Virgenes Road, due to distance and intervening topography. Trees and rock outcroppings located on subject parcels within the designated SR-2 and eligible SR-210 and SR-39 scenic corridors in the East San Gabriel Mountains subarea are essential to the scenic character of the SR-2, SR-210, and SR-39 scenic corridors. Within the East San Gabriel Mountains subarea, approximately 40.2 percent of the subject parcels within the SR-2, SR-210, and SR-39 viewsheds contain scenic trees, and there is a potential for these parcels to contain scenic rock outcroppings as well. Several of the subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea are also visible from State-eligible portions of I-5 and SR-126. The subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea that are visible from I-5 encompass part of a County-

designated significant ridgeline and approximately 40.8 percent of these parcels contain mature trees that could potentially be removed during the construction of single-family residences. The subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea that are visible from SR-126 are located on a County-designated significant ridgeline. Damage to these scenic resources as a result of construction of single-family residences on these subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea would adversely affect the scenic value of the one officially designated State scenic highway and three State-eligible scenic highway corridors.

5.2.3 Visual Character and Quality

The proposed initiative would be expected to alter the visual character of parcels that are visible from resources designated for the visual quality or character of the surrounding area or designated for special planning and design review standards, including (1) Pacific Crest Trail, National Scenic Trail designation; (2) Significant Ridgelines; (3) Community Standards Districts; (4) County designated scenic drives; and (5) Santa Clarita Valley Area Plan-designated scenic resources. The degree to which the alteration would occur would vary in relation to the proximity of parcels that are potentially eligible for use of hauled water to other existing agricultural, rural, suburban and urban development. A change from in visual character from a less developed to a more developed visual character category was identified as a significant impact.

According to the GIS viewshed analysis, new homes and hauled water tanks on 96.8 percent of the subject parcels would potentially be visible from Pacific Crest National Scenic Trail (PCT); new homes and hauled water tanks on 94.1 percent of the subject parcels would potentially be visible from County-designated scenic drives; and new homes and hauled water tanks on 0.9 percent of the subject parcels would potentially be visible from City-designated scenic highways (Table 5.2.3-1, *Proposed Initiative Parcels Visible from Federal-, County-, and City-Designated Scenic Resources*).

TABLE 5.2.3-1
PROPOSED INITIATIVE PARCELS VISIBLE FROM FEDERAL-, COUNTY-, AND CITY-DESIGNATED SCENIC RESOURCES

Subarea	Total Parcels Visible from PCT	Total Parcels Visible from County-Designated Scenic Drives	Total Parcels Visible from City-Designated Scenic Highways
Acton	1,179	1,045	1
Antelope Valley Northeast	1,933	1,623	0
Castaic/Santa Clarita/Agua Dulce	1,651	723	13
East San Gabriel Mountains	144	287	334
Lake Hughes/Gorman/West of Lancaster	14,982	15,047	27
Lake Los Angeles/Llano/ Valyermo/Littlerock	14,790	14,811	0
Lancaster Northeast	6,794	6,794	0
Total	**41,473**	**40,330**	**375**

Pacific Crest National Scenic Trail (PCT)

The construction of new homes and hauled water tanks on approximately 3,680 of 41,473 of the subject parcels over the 20-year planning horizon would have the potential to affect views from the PCT. Subject parcels within the Lake Hughes/Gorman/West of Lancaster subarea, the Castaic/Santa Clarita/Agua Dulce subarea, the East San Gabriel Mountains subarea, and the Acton subarea are clearly visible in the foreground and would have a high impact on views from the PCT. The subject parcels within the Lake Los Angeles/Llano/Valyermo/Littlerock subarea are visible in the middleground and would have a moderate impact on views from the PCT. The subject parcels within the Lancaster Northeast subarea and Antelope Valley Northeast subarea are visible in the distance/background and would have a low impact on views from the PCT.

County-Designated Scenic Drives

The construction of new homes and hauled water tanks on approximately 3,680 of 40,330 of the subject parcels over the 20-year planning horizon would have the potential to affect views from County-designated scenic drives. Subject parcels within every subarea are clearly visible in the foreground and would have a high impact on views from these priority scenic drives.

City-Designated Scenic Highways

The construction of new homes and hauled water tanks on approximately 3,680 of the subject parcels over the 20-year planning horizon would have the potential to affect views from City-designated scenic highways if these parcels include the approximately 375 of the subject parcels within the viewshed of City-designated scenic highways. Subject parcels within the Acton subarea and Lake Hughes/Gorman/West of Lancaster subarea are clearly visible in the foreground and would have a high impact on views from City-designated scenic highways. Subject parcels within the Lake Los Angeles/Llano/Valyermo/Littlerock subarea are visible in the distance/background and would have a low impact on views from City-designated scenic highways. Subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea, Antelope Valley Northeast subarea, East San Gabriel

Mountains subarea, and Lancaster Northeast subarea are not visible from these highways and would have no impact on views from City-designated scenic highways.

The proposed initiative would be expected to result in significant impacts to aesthetics in relation to substantial degradation of the existing visual character or quality of the site and its surroundings. Due to the presence of several of the subject parcels on County-designated significant ridgelines, adjacent to the PCT, visible from County-designated scenic drives and City-designated scenic highways, and visible from Santa Clarita Valley Area Plan-designated scenic resources, the development of single-family residences on several of the subject parcels would be expected to adversely affect the existing visual character or quality of the area (Table 5.2.3-2, *Visual Character Impacts by Subarea*). The construction of single-family residences on the subject parcels, and related appurtenant structures, such as water tanks, and access roads and driveways, at locations identified as significant ridgelines within the Acton, Agua Dulce, Altadena, Castaic Area, Elizabeth Lake and Lake Hughes, and San Francisquito Canyon CSDs, would be required to conform to the grading, building heights, and setbacks established by the respective community development standards as part of the building permit process. The construction of single-family residences and hauled water tanks on the 131 subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea and the one subject parcel within the East San Gabriel Mountains subarea located on significant ridgelines that are not restricted by the standards of a CSD would have the potential to affect the visual character or quality of the significant ridgelines. The extensive scale of visual impacts from development of a single-family residence, hauled water tank, and access road for all 42,867 parcels in proximity to these designated scenic resources would be expected to result in cumulative impacts to visual character and quality.

TABLE 5.2.3-2
VISUAL CHARACTER IMPACTS BY SUBAREA

Subarea	Visible from Pacific Crest Trail?	Located on County Significant Ridgeline?	Visible from County Scenic Drive?	Located Within County SEAs?[1]	Visible from City Designated Scenic Highway?[2]	Visible from Santa Clarita Valley Area Plan Designated Scenic Resources?
Acton	High visibility	No	Yes	168 parcels in one SEA: SEA #20, Santa Clara River	Yes (5): Barrel Springs Rd, Tierra Subida Ave, Sierra Hwy, Pearblossom Hwy, Antelope Valley Fwy.	Yes; Santa Clara River and Vasquez Rocks Natural Area.
Antelope Valley Northeast	Low visibility	No	Yes	1,355 parcels in one SEA: SEA #3, Antelope Valley	No	No
Castaic/ Santa Clarita/ Agua Dulce	High visibility	350 parcels; 40 within Acton CSD, 70 within Agua Dulce CSD, 103 within Castaic Area CSD, and 137 are not located within a CSD.	Yes	454 parcels in four SEAs: SEA #5, Cruzan Mesa Vernal Pools SEA #20, Santa Clara River SEA #21, Santa Felicia SEA #23, Santa Susana Mountains/Simi Hills	No	Yes; Vasquez Rocks, all Scenic Canyons, Water Bodies, and Woodlands. 377 parcels located within the scenic canyons.
East San Gabriel Mountains	High visibility	4 parcels; 3 located within Altadena CSD and 1 is not located within a CSD.	Yes	51 parcels in five SEAs: SEA #2, Altadena Foothills and Arroyos SEA #3, Antelope Valley SEA #18, San Dimas Canyon/San Antonio Wash SEA #19, San Gabriel Canyon SEA #20, Santa Clara River	Yes (1): Pearblossom Highway	No
Lake Hughes/ Gorman/ West of Lancaster	High visibility	69 parcels; all 69 are located within Elizabeth Lake and Lake Hughes CSD.	Yes	2,223 parcels in two SEAs: SEA #10, Joshua Tree Woodlands SEA #17, San Andreas	Yes (3): Elizabeth Lake Rd, Bouquet Canyon Rd, Godde Hills Rd	No
Lake Los Angeles/ Llano/ Valyermo/Littlerock	Moderate visibility	No	Yes	8,288 parcels in one SEA: SEA #3, Antelope Valley	Yes (1): Pearblossom Hwy.	No
Lancaster Northeast	Low visibility	No	Yes	4,984 parcels in one SEA: SEA #3, Antelope Valley	No	No
TOTAL	**High visibility: 4 subareas; Moderate: 1 subarea; Low: 2 subareas**	**423 parcels located on significant ridgelines; 285 (67%) are located within CSDs[3]**	**All subareas have visible parcels**	**17,523 parcels (within all subareas) are located within County SEAs[4]**	**Up to 375 parcels in Acton, Lake Hughes/Gorman/West of Lancaster, and Lake Los Angeles/Llano/ Valyermo/ Littlerock subareas potentially visible**	**Parcels within the Acton and Castaic/Santa Clarita/Agua Dulce subareas are visible**

NOTES:
[1] SEA = Significant Ecological Area. The Conservation and Natural Resources Element of the County General Plan contains a planning overlay component called the SEA Program that designates ecologically important land and water systems to preserve valuable habitat for rare, threatened, or endangered plant and animal species and conserve biological diversity in Los Angeles County and limits development in unincorporated regions of the County through requirement of a SEA Cconditional Uuse permit for project review by biologists on the SEA Technical Advisory Committee (SEATAC; Los Angeles County Department of Regional Planning. 9 July 2013. "SEA Program". Last updated 2009. Website. Available at: http://planning.lacounty.gov/sea). Development has the potential to degrade the existing visual character on sites within designated SEAs because they are environmentally sensitive areas that support valuable plant species.
[2] City of Palmdale Designated Scenic Highway
[3] CSD = Community standards district. CSDs can establish development standards such as grading, building height, and setback standards for preserving the visual character of a community, including significant ridgeline areas.
[4] SOURCE: Los Angeles County Department of Regional Planning. February 2015. Figure 9.3: Significant Ecological Areas and Coastal Resource Areas Policy Map. Available at: http://planning.lacounty.gov/assets/upl/project/tnc_significant_ecological_areas_UPD.pdf

5.2.4 Light and Glare

According to the GIS proximity analysis, approximately 45.9 percent (19,664 parcels) of the 42,867 subject parcels are located within one mile of an already developed area that currently produces high levels of nighttime skyglow (see Figure 5.2.4-1, *Nighttime Sky Glow, Proposed Initiative Study Area*, at the end of this section). These parcels are concentrated within the Acton subarea, Castaic/Santa Clarita/Agua Dulce subarea, and the East San Gabriel Mountains subarea within the edges of the Angeles National Forest. Less than half of the subject parcels within the Lake Hughes/Gorman/West of Lancaster subarea, the Lancaster Northeast subarea, and the Lake Los Angeles/Llano/Valyermo/Littlerock subarea are located within one mile of an existing developed area that is a source of nighttime sky glow, and none of the parcels within the Antelope Valley Northeast subarea are located within one mile of an existing developed area (the area is undeveloped and dark at night).

The construction of new homes and hauled water tanks on approximately 3,680 of the subject parcels over the 20-year planning horizon would have the potential to create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the proposed initiative study area.

As approximately 99.2 percent of the 42,867 subject parcels are located within the County's Rural Outdoor Lighting District, which regulates outdoor lighting to maintain dark skies at night for residents and wildlife, four of the seven subareas have an existing very low level of nighttime light that is expected to be affected by the development of single-family residences and street lights in association with the development of the residences (see Figure 5.2.4-1). Pursuant to the 2012 Rural Outdoor Lighting District Ordinance, outdoor lighting must be fully shielded on properties located in residential zones, and drop-down lenses, mercury vapor light, ultraviolet lights, searchlights, laser lights, and other lighting that flashes, blinks, alternates, or moves are prohibited within the Rural Outdoor Lighting District.[17] The Rural Outdoor Lighting District Ordinance also limits outdoor lighting fixtures installed above 15 feet high to a manufacturer's maximum output rating or no greater than 400 lumens, restricts the maximum height for an outdoor light fixture to 20 feet from the finished grade, and establishes that outdoor lighting shall cause no unacceptable light trespass. Additionally, the Rural Outdoor Lighting District Ordinance prohibits street lights within the District, except where deemed necessary at urban cross sections by the Director of Public Works, and establishes standards to prevent off-street illumination and glare. Therefore, outdoor lighting on the subject parcels for single-family residences that would be constructed as a result of the proposed initiative would be required as part of the building permit process to reduce the levels of nighttime light and glare on the property to below the level of significance.

However, the Rural Outdoor Lighting District Ordinance and the building permit process do not restrict the use of reflective building materials, such as large spans of glass or metallic surfaces, which would have the potential to contribute to a source of daytime glare. The proposed initiative would have the potential to result in an indirect impact on daytime glare as a result of the construction of new single-family residences. Metal hauled water tanks, in particular, have the potential to become an elevated source of daytime glare on the subject parcels. Therefore, the development of new single-family residences that could occur as a result of the proposed initiative has the potential to result in significant impacts to aesthetics related to the creation of a new source

[17] Los Angeles County Department of Regional Planning. 28 September 2012. Ordinance No. 2012-0047. PDF available online at: http://planning.lacounty.gov/assets/upl/data/ord_outdoor-lighting.pdf Main website: http://planning.lacounty.gov/view/rural_outdoor_lighting_district_ordinance/

of substantial light or glare that would adversely affect daytime or nighttime views in the proposed project area.

5.3 ALTERNATIVE 1: HAULED WATER INITIATIVE FOR PARCELS THAT ARE 0.5 ACRES OR GREATER IN SIZE

Alternative 1 would result in equal impacts to aesthetics when compared to the proposed initiative. Alternative 1 would only reduce the number of eligible parcels by 2,056 parcels (4.8 percent reduction) scattered throughout northern Los Angeles County (Figure 5.3-1, *Viewshed Analysis for Alternative 1*, at the end of this section).

5.3.1 Scenic Vistas

As with the proposed initiative, Alternative 1 would not result in impacts to scenic vistas because there are no currently designated County scenic vista points.

5.3.2 Scenic Highways

As Alternative 1 would only reduce the number of eligible parcels by 4.8 percent and would still include the parcels within the SR-2 (designated), I-5 (eligible), SR-210 (eligible), and SR-39 (eligible) State scenic highway corridors, the same impacts to scenic resources within a State scenic highway corridor would occur as for the proposed initiative.

5.3.3 Visual Character and Quality

As Alternative 1 would only reduce the number of eligible parcels by 4.8 percent scattered throughout northern Los Angeles County, similar impacts to visual character and quality would occur as for the proposed initiative. Alternative 1 would reduce the number of eligible parcels that intersect with designated significant ridgelines by 13 parcels, with only 338 subject parcels within the Castaic/Santa Clarita/Agua Dulce subarea instead of 350 for the proposed initiative (96.6 percent), and three subject parcels within the East San Gabriel Mountains subarea instead of four for the proposed initiative (75 percent).

5.3.4 Light and Glare

Alternative 1 would be expected to result in a similar level of impact to nighttime light and daytime glare in comparison to the proposed initiative because it would only reduce the number of eligible parcels by 4.8 percent, which would not substantially alter the overall potential for daytime glare. Alternative 1 would reduce the number of eligible parcels located farther than one mile from a current source of nighttime skyglow by 417 parcels (1.8 percent) (see Figure 5.3.4-1, *Nighttime Sky Glow, Alternative 1 Study Area*, at the end of this section). As with the proposed initiative, the majority (99.2 percent) of the subject parcels are located within the Rural Outdoor Lighting District and subject to the provisions of the Rural Outdoor Lighting District Ordinance that reduce nighttime sky glow through limited lighting and shielded outdoor light fixtures.

5.4 ALTERNATIVE 2: HAULED WATER INITIATIVE FOR PARCELS THAT ARE 2.5 ACRES OR GREATER IN SIZE

Alternative 2 would result in fewer impacts to aesthetics when compared to the proposed initiative. Alternative 2 would reduce the number of eligible parcels by 13,173 parcels (30.7 percent reduction) scattered throughout northern Los Angeles County (see Figure 5.4-1, *Viewshed Analysis for Alternative 2*, at the end of this section).

5.4.1 Scenic Vistas

As with the proposed initiative, Alternative 2 would not result in impacts to scenic vistas because there are no currently designated County scenic vista points.

5.4.2 Scenic Highways

As Alternative 2 would still include the parcels within the SR-2 (designated), I-5 (eligible), SR-210 (eligible), and SR-39 (eligible) State scenic highway corridors, the same impacts to scenic resources within a State scenic highway corridor would occur as for the proposed initiative.

5.4.3 Visual Character and Quality

As Alternative 2 would reduce the number of eligible parcels by 30.7 percent scattered throughout northern Los Angeles County, including the reduction of eligible parcels that intersect with designated significant ridgelines by 30 parcels, lesser impacts to visual character and quality would occur as for the proposed initiative. Alternative 2 would include only 322 subject parcels that intersect with designated significant ridgelines within the Castaic/Santa Clarita/Agua Dulce subarea instead of 350 for the proposed initiative (92 percent), three subject parcels within the East San Gabriel Mountains subarea instead of four for the proposed initiative (75 percent), and 68 subject parcels within the Lake Hughes/Gorman/West of Lancaster subarea instead of 69 for the proposed initiative (92.9 percent).

5.4.4 Light and Glare

Alternative 2 would be expected to result in less impact to nighttime light and daytime glare in comparison to the proposed initiative because it would reduce the number of eligible parcels by 30.7 percent, which would reduce the overall potential for daytime glare. Alternative 2 would also reduce the number of eligible parcels located farther than one mile from a current source of nighttime skyglow by 5,746 parcels (24.8 percent) (see Figure 5.4.4-1, *Nighttime Sky Glow, Alternative 2 Study Area*, at the end of this section). As with the proposed initiative, over 99 percent of the subject parcels are located within the Rural Outdoor Lighting District and subject to the provisions of the Rural Outdoor Lighting District Ordinance that reduce nighttime sky glow through limited lighting and shielded outdoor light fixtures.

5.5 ALTERNATIVE 3: HAULED WATER INITIATIVE FOR PARCELS THAT ARE LOCATED WITHIN 12-MINUTE RESPONSE TIME OF EMERGENCY RESPONSE UNIT

Alternative 3 would result in fewer impacts to aesthetics when compared to the proposed initiative. Alternative 3 would reduce the number of eligible parcels by 12,262 parcels (28.6 percent reduction) near the rural western side of the Lake Hughes/Gorman/West of Lancaster subarea (including parcels surrounding PCT and along four County-designated scenic drives); near Castaic Lake, Pico Canyon, and Santa Clarita Woodlands Park at the northwestern and southwestern edges of the Castaic/Santa Clarita/Agua Dulce subarea; on the northeastern portion of the Lancaster Northeast subarea; within the middle of the Angeles National Forest in the East San Gabriel Mountains subarea (including the subject parcels within the SR-2 and SR-39 scenic corridors); on the southeastern portion of the Lake Los Angeles/Llano/Valyermo/Littlerock subarea; and the entire Antelope Valley Northeast subarea (see Figure 5.5-1, *Viewshed Analysis for Alternative 3*, at the end of this section).

5.5.1 Scenic Vistas

As with the proposed initiative, Alternative 3 would not result in impacts to scenic vistas because there are no currently designated County scenic vista points.

5.5.2 Scenic Highways

As Alternative 3 would not include the parcels within the SR-2 (designated), SR-210 (eligible), and SR-39 (eligible) State scenic highway corridors, it would be expected to result in fewer impacts to scenic resources within a State scenic highway corridor compared to the proposed initiative.

5.5.3 Visual Character and Quality

As Alternative 3 would reduce the number of eligible parcels by 28.6 percent near scenic resources (PCT, County-designated scenic drives, SR-2, SR-210, and SR-39), including the reduction of eligible parcels that intersect with designated significant ridgelines by 19 parcels, it would be expected to result in less impact to visual character and quality when compared to the proposed initiative. Alternative 3 would include only 331 subject parcels that intersect with designated significant ridgelines within the Castaic/Santa Clarita/Agua Dulce subarea instead of 350 for the proposed initiative (94.6 percent) and the same number of subject parcels for the East San Gabriel Mountains subarea and Lake Hughes/Gorman/West of Lancaster subarea as the proposed initiative.

5.5.4 Light and Glare

Alternative 3 would be expected to result in less impact to nighttime light and daytime glare in comparison to the proposed initiative because several parcels within the Lancaster Northwest subarea and Lake Los Angeles/Llano/Valyermo/Littlerock subarea and all of the subject parcels within the Antelope Valley Northeast subarea would no longer be considered eligible for hauled water if no groundwater is discovered through well tests (see Figure 5.5.4-1, *Nighttime Sky Glow, Alternative 3 Study Area*, at the end of this section). Under Alternative 3, the northeastern portion of Los Angeles County would remain predominantly dark at night and undeveloped, with dirt roads and car traffic that could produce daytime glare. Alternative 3 would also reduce the number of eligible parcels located farther than one mile from a current source of nighttime skyglow by 10,084 parcels (43.5 percent). As with the proposed initiative, the majority of the subject parcels are located within the Rural Outdoor Lighting District and subject to the provisions of the Rural

Outdoor Lighting District Ordinance that reduce nighttime sky glow through limited lighting and shielded outdoor light fixtures.

5.6 ALTERNATIVE 4: HAULED WATER INITIATIVE FOR PARCELS LOCATED WITHIN 200 FEET OF AN EXISTING ROAD

Alternative 4 would result in fewer impacts to aesthetics when compared to the proposed initiative. Alternative 4 would reduce the number of eligible parcels by 18,904 parcels (44.1 percent reduction) scattered throughout northern Los Angeles County, including parcels near Pico Canyon, Santa Clarita Woodlands Park, and Agua Dulce at the southwestern and southeastern edges of the Castaic/Santa Clarita/Agua Dulce subarea, as well as some of the parcels near the State scenic Angeles Crest Highway (SR-2) and the Foothill Freeway (SR-210) (see Figure 5.6-1, *Viewshed Analysis for Alternative 4*, at the end of this section).

5.6.1 Scenic Vistas

As with the proposed initiative, Alternative 4 would not result in impacts to scenic vistas because there are no currently designated County scenic vista points.

5.6.2 Scenic Highways

As Alternative 4 would include fewer parcels within the SR-2 (designated) and SR-210 (eligible) State scenic highway corridors, it would be expected to result in fewer impacts to scenic resources within a State scenic highway corridor compared to the proposed initiative.

5.6.3 Visual Character and Quality

As Alternative 4 would reduce the number of eligible parcels by 44.1 percent near scenic resources (County-designated scenic drive corridors, SR-2 scenic corridor, and SR-210 scenic corridor), including the reduction of eligible parcels that intersect with designated significant ridgelines by 184 parcels, it would be expected to result in less impact to visual character and quality compared to the proposed initiative.

Alternative 4 would include only 182 subject parcels that intersect with designated significant ridgelines within the Castaic/Santa Clarita/Agua Dulce subarea instead of 350 for the proposed initiative (53.8 percent), two subject parcels within the East San Gabriel Mountains subarea instead of four for the proposed initiative (50 percent), and 42 subject parcels within the Lake Hughes/Gorman/West of Lancaster subarea instead of 69 for the proposed initiative (60.9 percent).

5.6.4 Light and Glare

Alternative 4 would be expected to result in less impact to nighttime light and daytime glare in comparison to the proposed initiative because some of the parcels within the Castaic/Santa Clarita/Agua Dulce subarea and some of the parcels within the Lake Hughes/Gorman/West of Lancaster subarea that are outside a one-mile buffer of existing developed areas would no longer be considered eligible for hauled water if no groundwater is discovered through well tests (see Figure 5.6.4-1, *Nighttime Sky Glow, Alternative 4 Study Area*, at the end of this section). Under Alternative 4, scattered parcels in northern Los Angeles County would remain predominantly dark at night and undeveloped, with fewer new roads and new car traffic in more rural areas of the County that could produce daytime glare. Alternative 4 would also reduce the number of eligible

parcels located farther than one mile from a current source of nighttime skyglow by 10,706 parcels (46.1 percent). As with the proposed initiative, over 99 percent of the subject parcels are located within the Rural Outdoor Lighting District and subject to the provisions of the Rural Outdoor Lighting District Ordinance that reduce nighttime sky glow through limited lighting and shielded outdoor light fixtures.

5.7 ALTERNATIVE 5: HAULED WATER INITIATIVE FOR PARCELS THAT ARE 2.5 ACRES OR GREATER IN SIZE, WITH AN AVERAGE SLOPE OF 25 PERCENT OR LESS, LOCATED WITHIN 12-MINUTE RESPONSE TIME OF A FIRE DEPARTMENT EMERGENCY RESPONSE UNIT

Alternative 5 would result in fewer impacts to aesthetics when compared to the proposed initiative. Alternative 5 would reduce the number of eligible parcels by 31,866 parcels (74.3 percent reduction) scattered throughout northern Los Angeles County, including (see Figure 5.7-1, *Viewshed Analysis for Alternative 5*, at the end of this section):

- Several parcels along Lancaster Road, Pine Canyon Road, 3 Points Road, and near PCT within the Lake Hughes/Gorman/West of Lancaster subarea
- Several parcels near Castaic Lake, Pico Canyon, Santa Clarita Woodland Park, Agua Dulce, within scenic canyons, and the northwestern edge of the Castaic/Santa Clarita/Agua Dulce subarea
- Several parcels scattered throughout the Acton subarea
- Several parcels on the northeastern portion of the Lancaster Northeast subarea
- Several parcels on the northwestern and southeastern portions of the Lake Los Angeles/Llano/Valyermo/Littlerock subarea
- The entire Antelope Valley Northeast subarea
- Several parcels within the middle of the Angeles National Forest in the East San Gabriel Mountains subarea, including the subject parcels within the state designated and eligible scenic highway corridors

By screening out parcels that are small in size, more remote, and less accessible to emergency response services, Alternative 5 would preserve scenic designated open space surrounding State-designated and County-designated scenic resources.

5.7.1 Scenic Vistas

As with the proposed initiative, Alternative 5 would not result in impacts to scenic vistas because there are no currently designated County scenic vista points.

5.7.2 Scenic Highways

As Alternative 5 would not include the parcels within the SR-2 (designated) and SR-39 (eligible) State scenic highway corridors and would only include three parcels within the SR-210 (eligible) State scenic highway corridor, it would be expected to result in less impact to scenic resources within a State scenic highway corridor compared to the proposed initiative.

5.7.3 Visual Character and Quality

As Alternative 5 would reduce the number of eligible parcels by 74.3 percent near scenic resources (PCT, County-designated scenic drives, and State scenic highways), including the reduction of eligible parcels that intersect with designated significant ridgelines by 205 parcels, it would be expected to result in less impact to visual character and quality compared to the proposed initiative. Alternative 5 would include only 176 subject parcels that intersect with designated significant ridgelines within the Castaic/Santa Clarita/Agua Dulce subarea instead of 350 for the proposed initiative (50.3 percent), one subject parcel within the East San Gabriel Mountains subarea instead of four for the proposed initiative (25 percent), and 41 subject parcels within the Lake Hughes/Gorman/West of Lancaster subarea instead of 69 for the proposed initiative (59.4 percent).

5.7.4 Light and Glare

Alternative 5 would be expected to result in less impact to nighttime light and daytime glare compared to the proposed initiative because several of the parcels within each subarea and all of the parcels within Antelope Valley Northeast subarea that are outside a one-mile buffer of existing developed areas would no longer be considered eligible for hauled water if no groundwater is discovered through well tests (see Figure 5.7.4-1, *Nighttime Sky Glow, Alternative 5 Study Area*, at the end of this section). Under Alternative 5, several scattered parcels in northern Los Angeles County would remain predominantly dark at night and undeveloped, with fewer new roads and new car traffic in more rural areas of the County that could produce daytime glare. Alternative 5 would also reduce the number of eligible parcels located farther than one mile from a current source of nighttime skyglow by 18,046 parcels (77.8 percent). As with the proposed initiative, over 99 percent of the subject parcels are located within the Rural Outdoor Lighting District and subject to the provisions of the Rural Outdoor Lighting District Ordinance that reduce nighttime sky glow through limited lighting and shielded outdoor light fixtures.

5.8 ALTERNATIVE 6: NO PROJECT ALTERNATIVE

The No Project Alternative would involve no preparation or adoption of the proposed initiative. In accordance with the existing rules for approval of a building permit, any property that is not within the jurisdiction of a water purveyor and cannot meet the well test requirements for groundwater on the property will not be allowed to be built upon. No single-family residences would be permitted or constructed on properties that are not located within a water district or directly above a groundwater source. No potable water would be hauled to properties, and no storage tanks or infrastructure would be constructed to support the regular delivery of hauled water to parcels in unincorporated Los Angeles County.

This alternative would require that the 42,867 of parcels that are located outside of a public or private water district to demonstrate that they have adequate access to groundwater, consistent the provisions of the County of Los Angeles Building Permit Application. In the worst-case scenario, 42,867 parcels where development of a single-family residence is an allowable use pursuant to the land use designation and the zoning, would potentially not be able to demonstrate a satisfactory source of potable water to allow issuance of a building permit.

5.8.1 Scenic Vistas

As with the proposed initiative, the No Project Alternative would not result in impacts to scenic vistas because there are no currently designated County scenic vista points. Additionally, the No Project Alternative would preclude the development of parcels in the County not served by a water purveyor where adequate groundwater is determined not to be available through the drilling of wells, including parcels visible from three scenic vistas and one roadside rest that were historically designated as scenic vistas under the 1965 Regional Recreation Areas Plan and have the potential to be considered in the County's future scenic resources ordinance.

5.8.2 Scenic Highways

The No Project Alternative would result in less impact to scenic resources within a State scenic highway corridor compared to the proposed initiative. The No Project Alternative would preclude the residential development of parcels in the County not served by a water purveyor where adequate groundwater is determined not to be available through the drilling of wells, including the eligible parcels under the proposed initiative that are located within the scenic corridor of Officially Designated State Scenic Highway SR-2 (Angeles Crest Highway) and State-eligible scenic highways SR-39, SR-210, and I-5.

5.8.3 Visual Character and Quality

The No Project Alternative would result in less impact to visual character and quality compared to the proposed initiative. The No Project Alternative would preclude the residential development of parcels in the County not served by a water purveyor where adequate groundwater is determined not to be available through the drilling of wells, including the eligible parcels under the proposed initiative that are located within the scenic corridor of County-designated scenic drives, City-designated scenic highways, on County-designated significant ridgelines, within the viewshed of the PCT, within scenic resources identified in the Santa Clarita Valley Area Plan, within CSDs, or within the rural communities identified in Chapter 7 of the Antelope Valley Area Plan. The rural visual character of the subject vacant lots would remain where adequate groundwater is not available.

5.8.4 Light and Glare

The No Project Alternative would result in less impact to nighttime light and daytime glare compared to the proposed initiative due to the limited number of residences that would be allowed to develop in rural northern Los Angeles County.

5.9 CONCLUSIONS

The visual character of the proposed initiative study area consists of vacant parcels in rural agricultural to suburban communities in northern Los Angeles County surrounded by several scenic and recreational resources, including the PCT, Antelope Valley California Poppy Preserve, the Angeles National Forest, State-designated and eligible scenic highways, County-designated scenic drives, City-designated scenic highways, County-designated significant ridgelines, and rural communities that have established in Chapter 7 of the Antelope Valley Area Plan the intent to retain their rural character. The construction of new homes and hauled water tanks on subject parcels outside the jurisdiction of a water purveyor where adequate groundwater is not available would not be expected to impact scenic vistas as there are currently no designated scenic vistas in

northern unincorporated Los Angeles County. The proposed initiative and five action alternatives would be expected to result in significant impacts to scenic resources within a state scenic highway, significant impacts to visual character and quality, and significant impacts to aesthetics in regard to daytime light and glare. The proposed initiative and alternatives would not be expected to significantly affect nighttime light in Los Angeles County because 99.2 percent of the parcels are subject to the County's Rural Outdoor Lighting District Ordinance, which restricts outdoor lighting to maintain dark skies at night. Of the proposed initiative and the five action alternatives, Alternative 5 would be expected to result in the least impact to aesthetics, as it would reduce the potential for impacts to scenic resources within state scenic highway corridors and reduce the potential for impacts to visual character from development of a rural area in the vicinity of the PCT or the rural communities within the Antelope Valley Area Plan area.

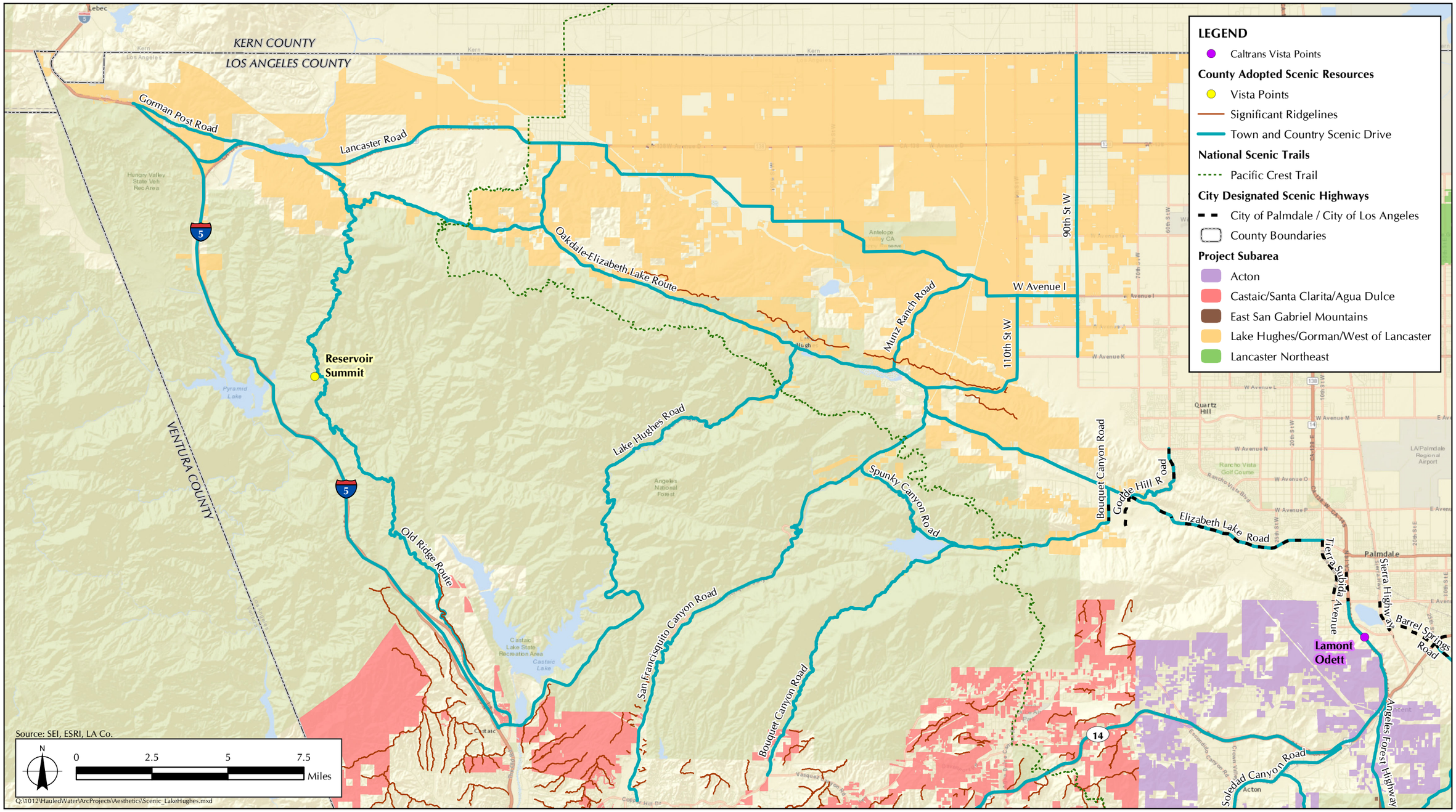

FIGURE 5.1.1-1

Lake Hughes/Gorman/West of Lancaster Subarea Scenic Resources

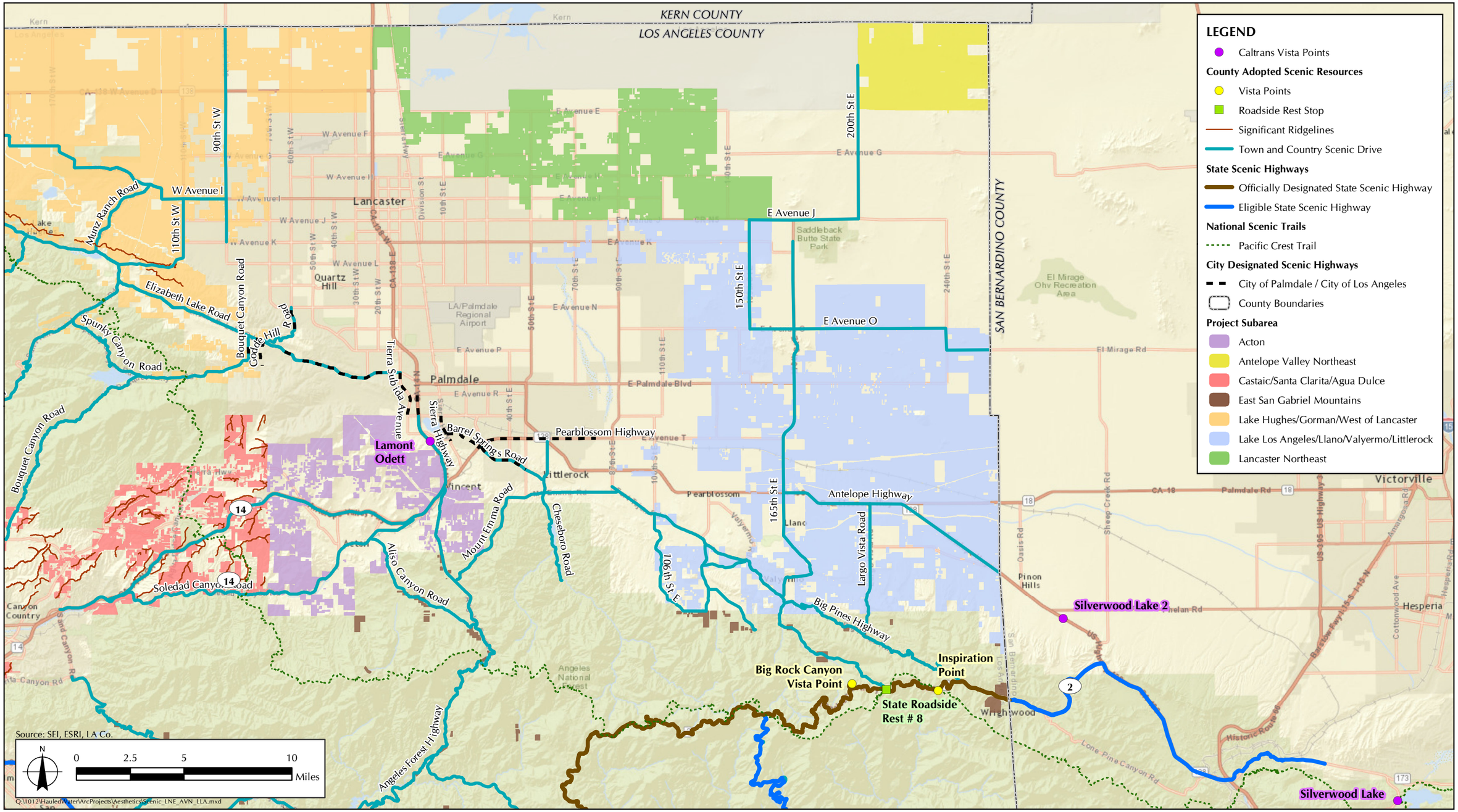

FIGURE 5.1.1-2

Lancaster Northeast Subarea, Antelope Valley Northeast Subarea, and Lake Los Angeles/Llano/Valyermo/Littlerock Subarea Scenic Resources

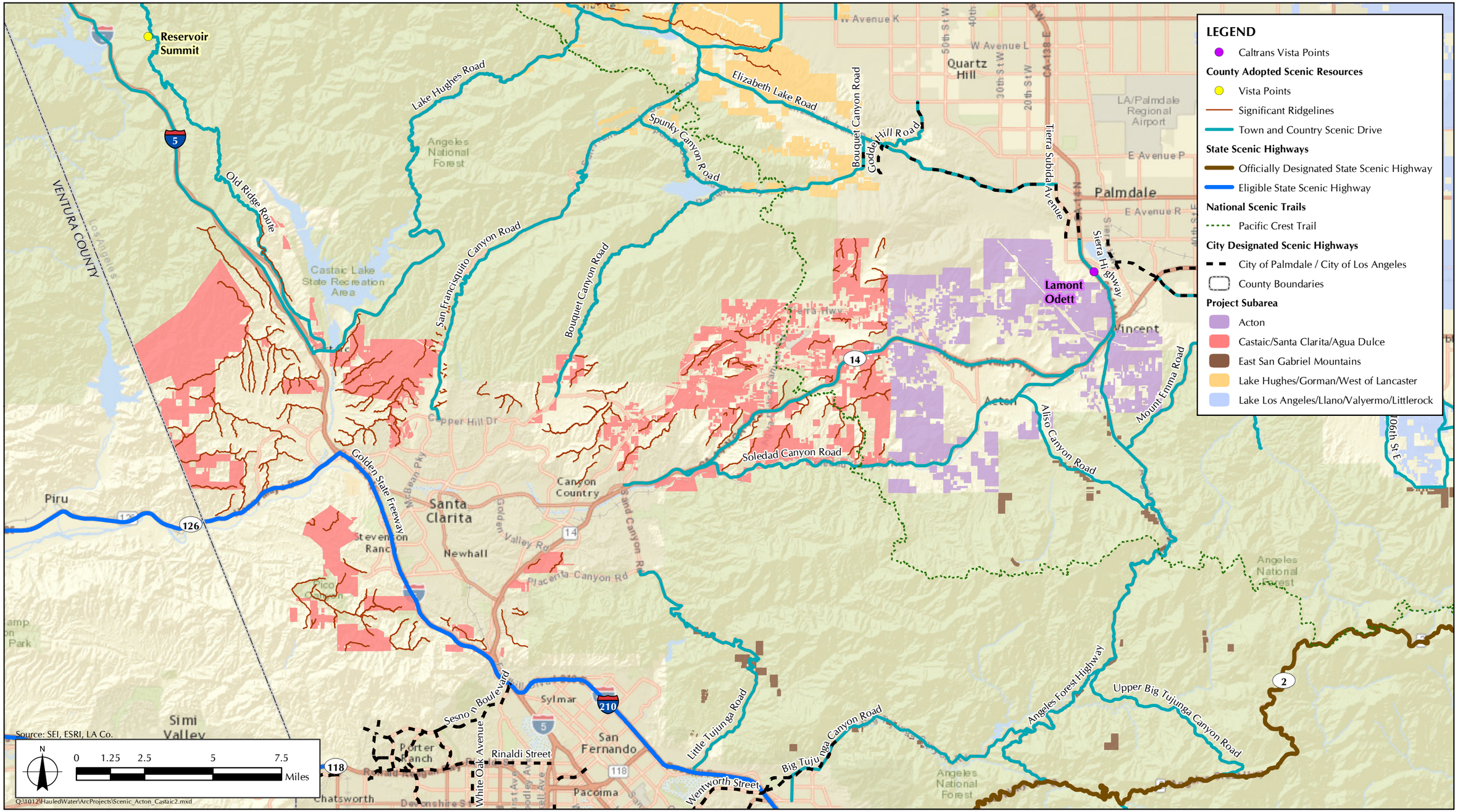

FIGURE 5.1.1-3

Acton Subarea and Castaic/Santa Clarita/Agua Dulce Subarea Scenic Resources

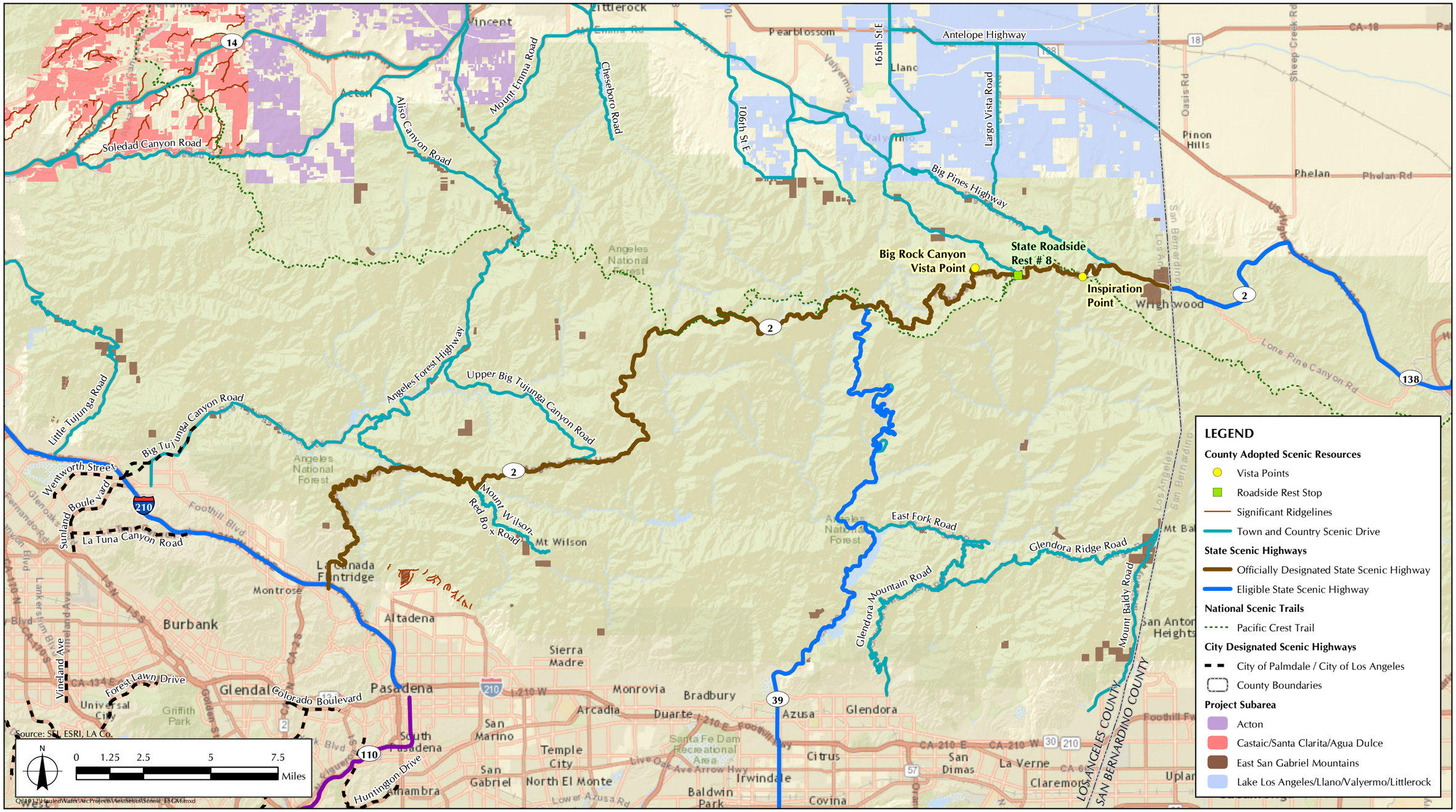

FIGURE 5.1.1-4

East San Gabriel Mountains Subarea Scenic Resources

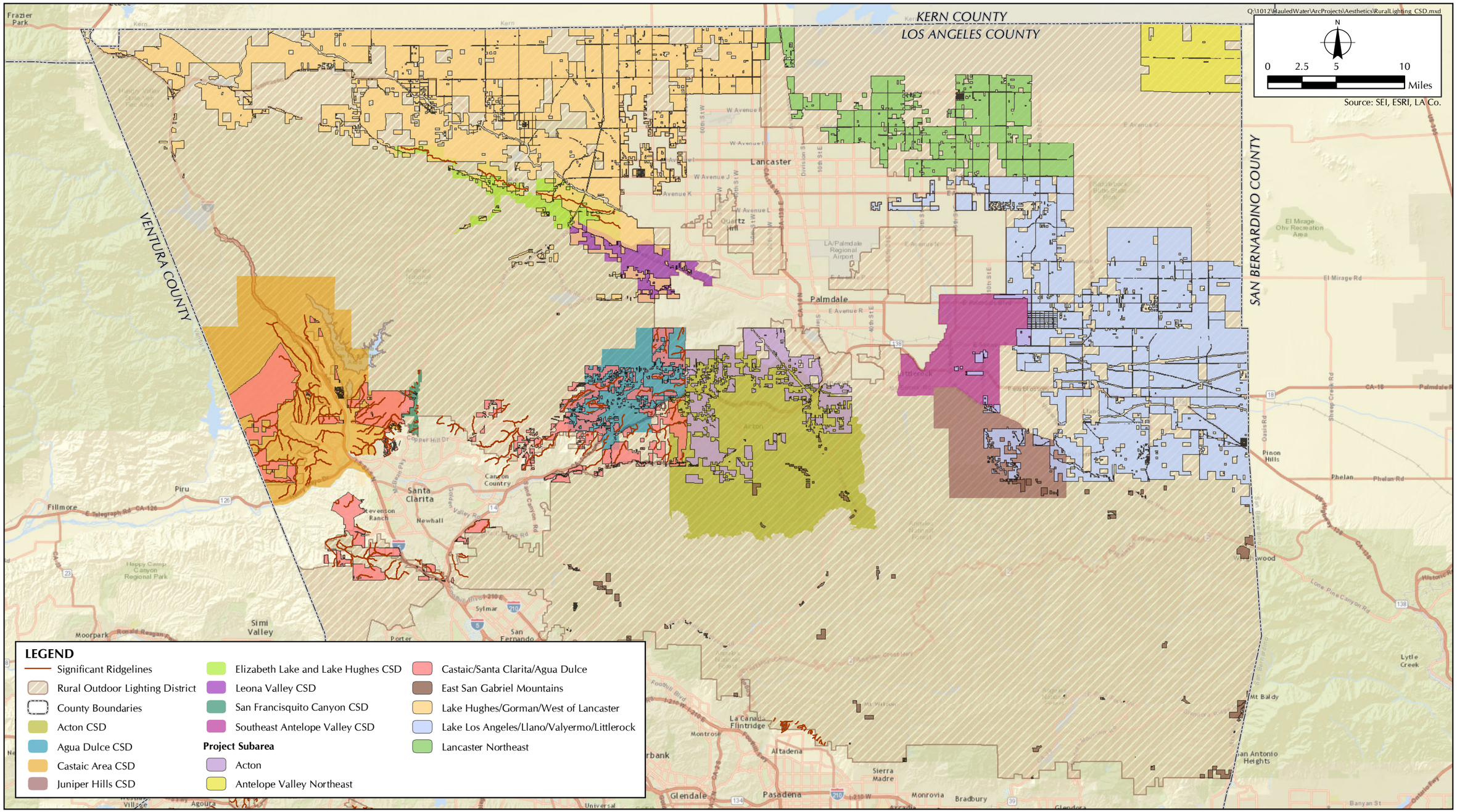

FIGURE 5.1.3-1

County Rural Outdoor Lighting District and CSD Ordinance Boundaries

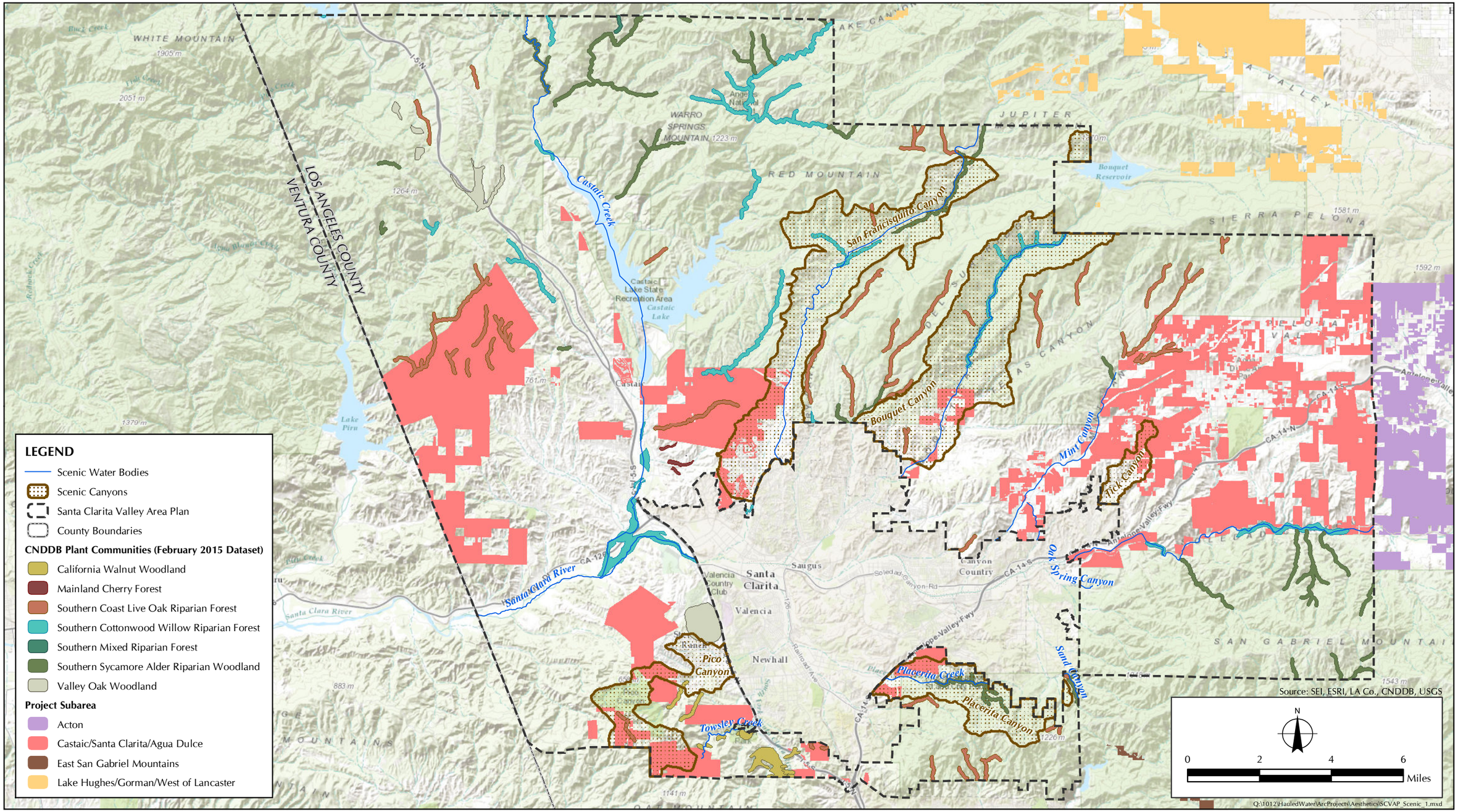

FIGURE 5.1.3-2

Santa Clarita Valley Area Plan Designated Scenic Canyons, Woodlands, and Scenic Water Bodies

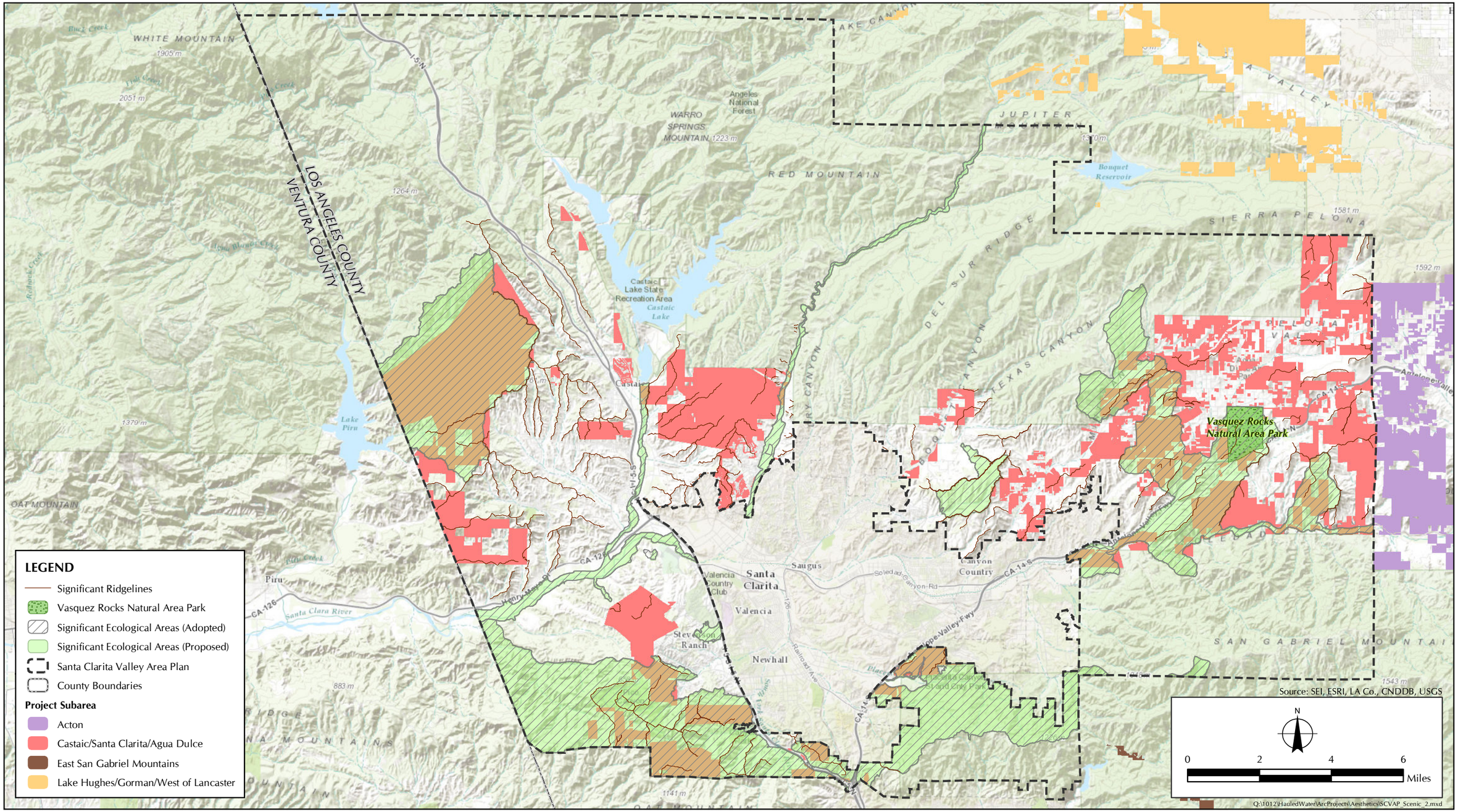

FIGURE 5.1.3-3

Santa Clarita Valley Area Plan Designated Scenic Landmarks, Significant Ridgelines, and Significant Ecological Areas

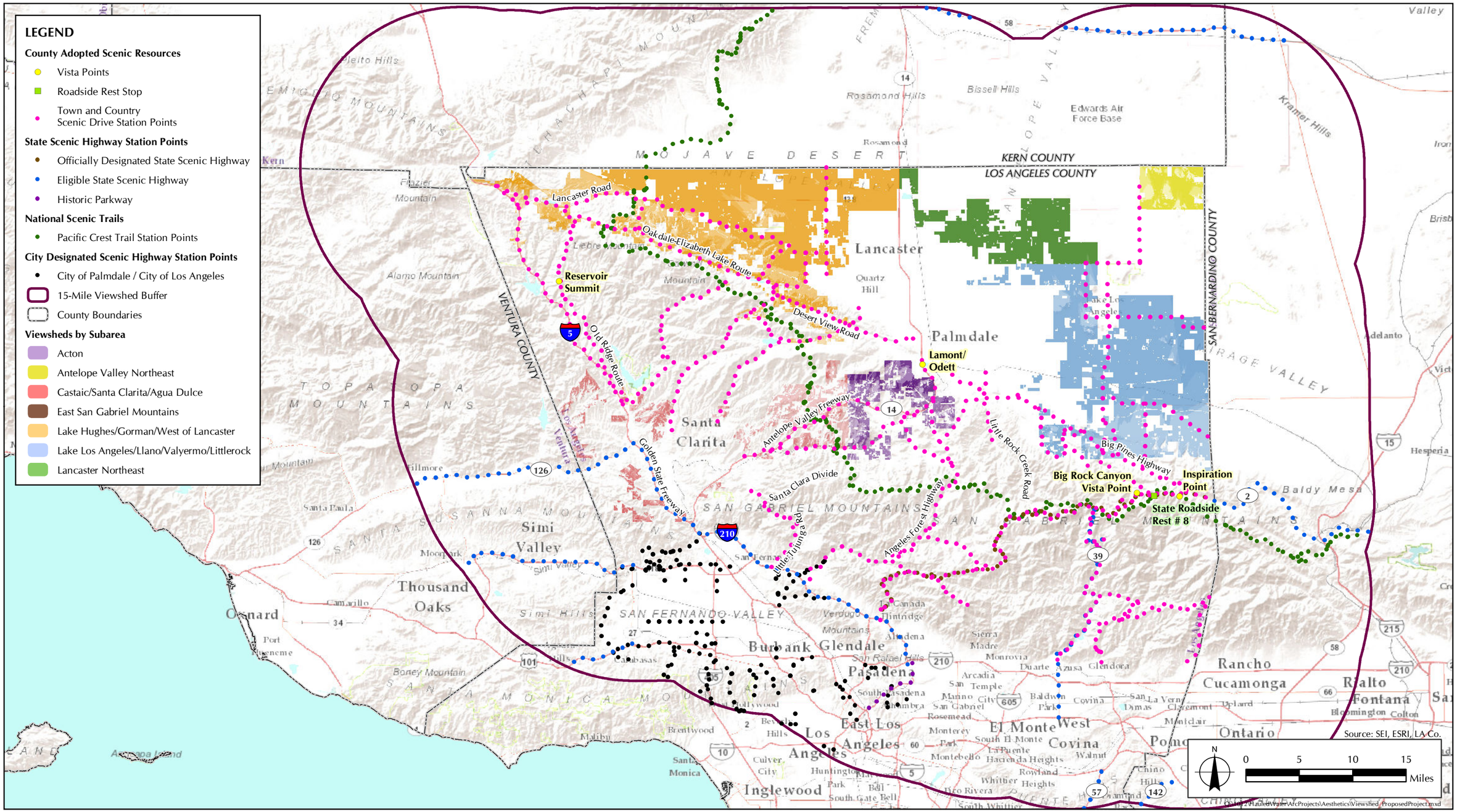

FIGURE 5.2.1-1

Viewshed Analysis for Proposed Initiative

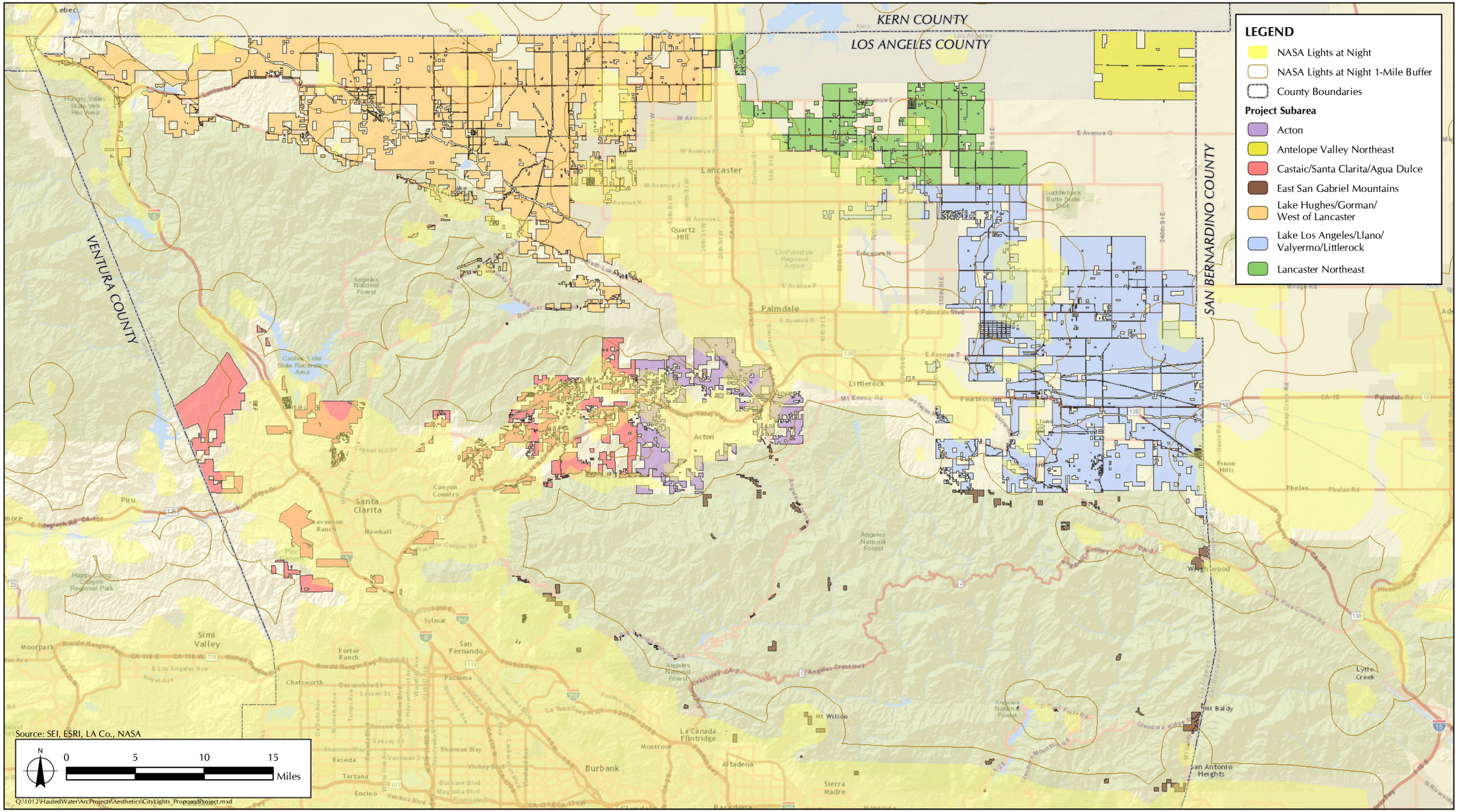

FIGURE 5.2.4-1

Nighttime Sky Glow, Proposed Initiative Study Area

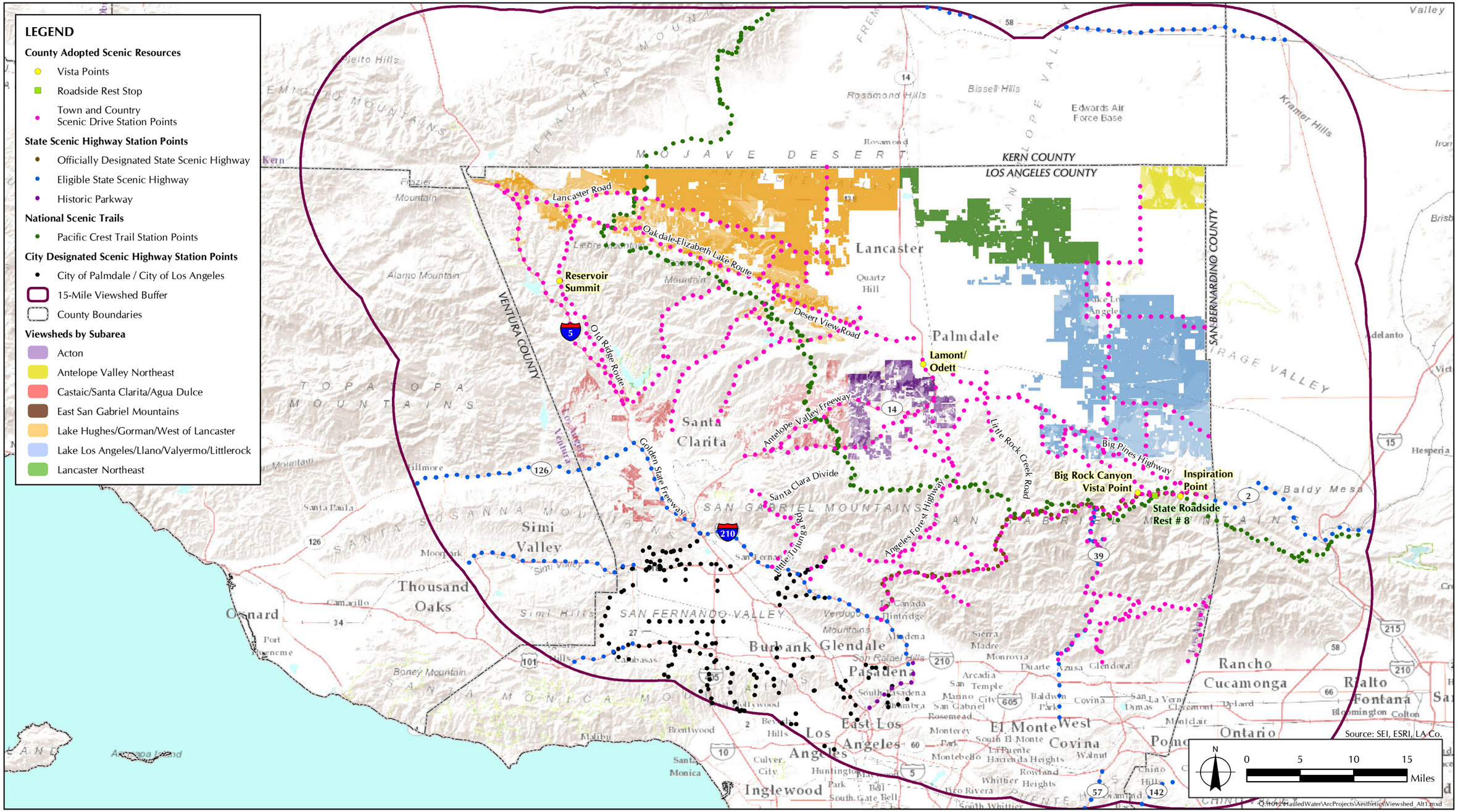

FIGURE 5.3-1

Viewshed Analysis for Alternative 1

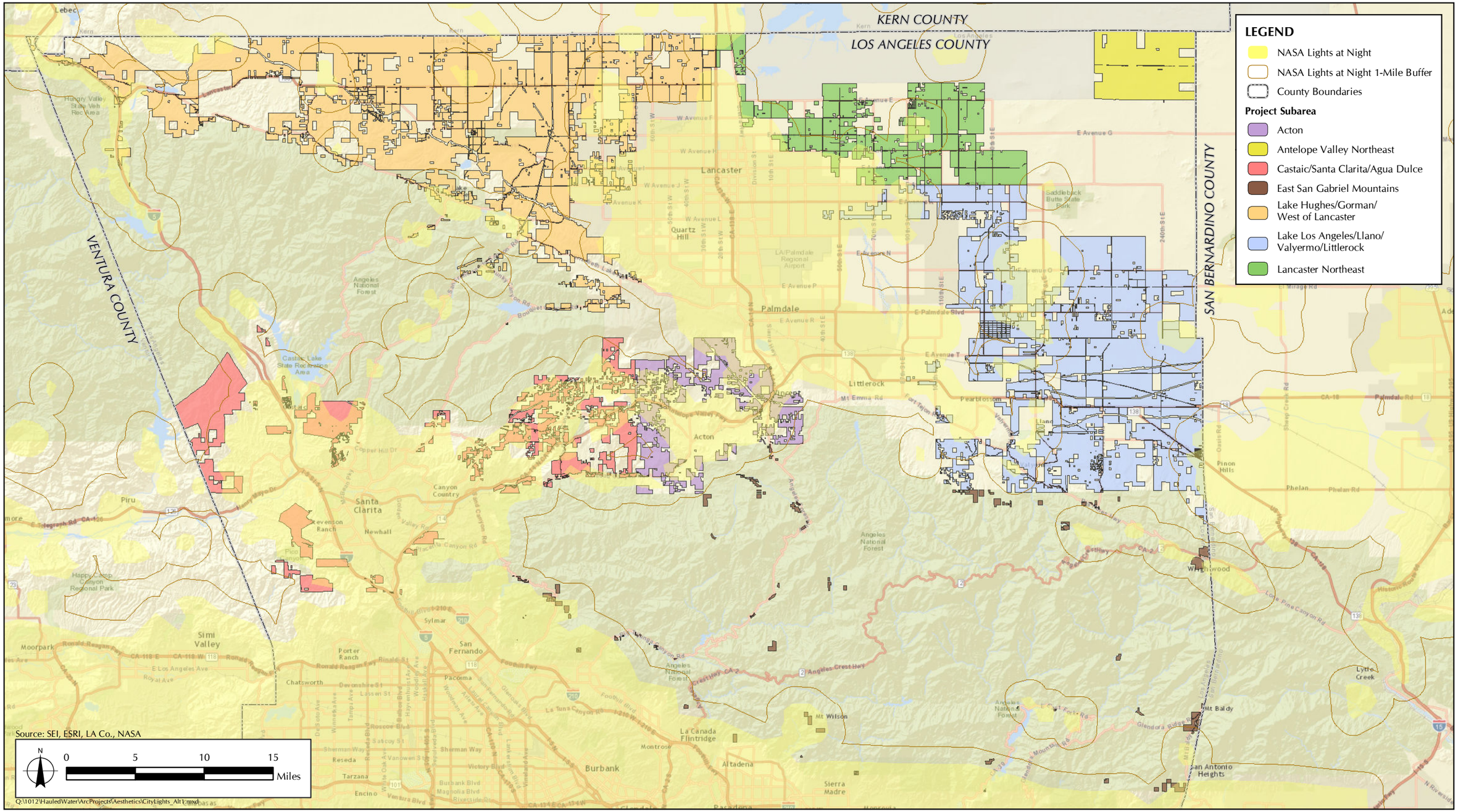

FIGURE 5.3.4-1

Nighttime Sky Glow, Alternative 1 Study Area

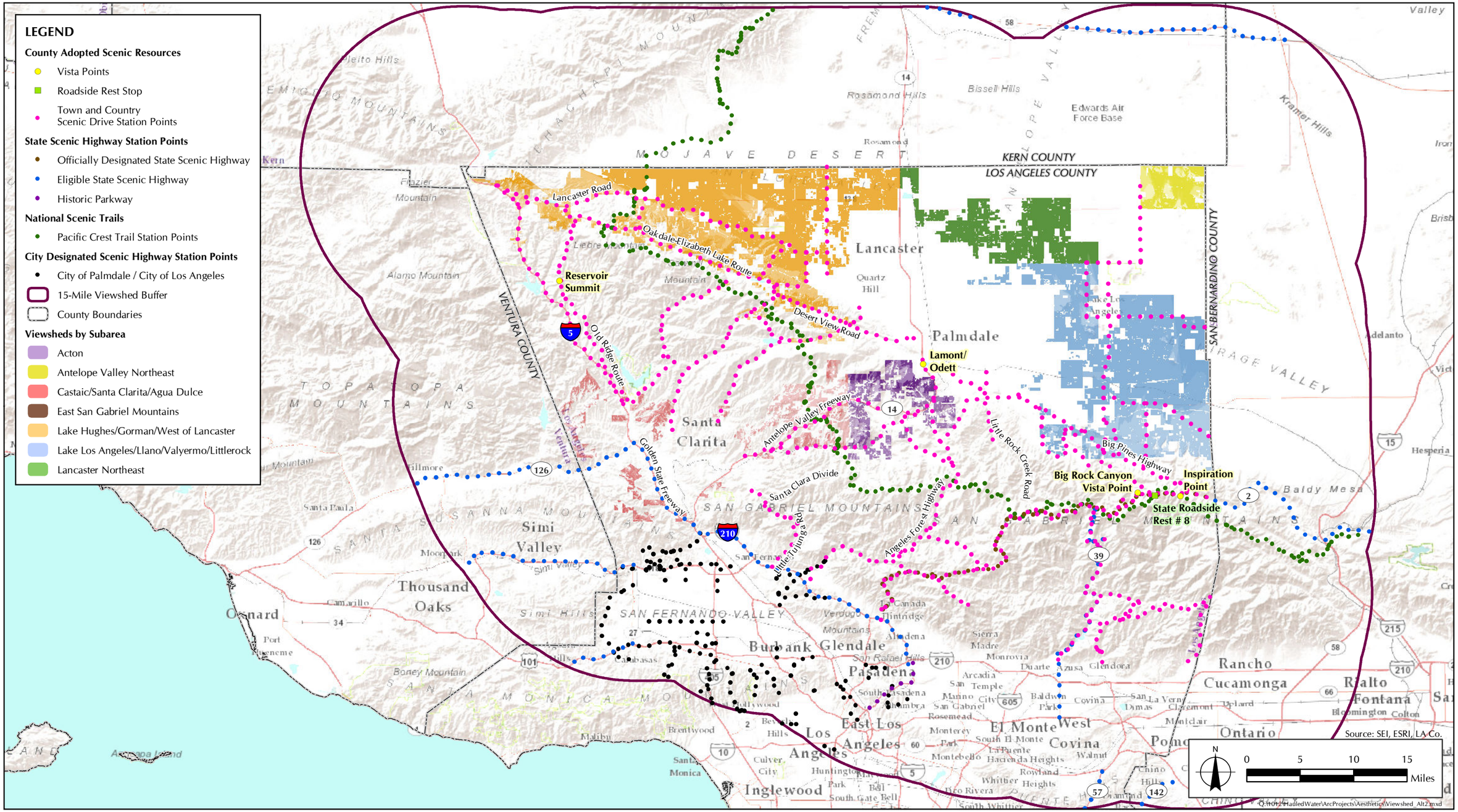

FIGURE 5.4-1

Viewshed Analysis for Alternative 2

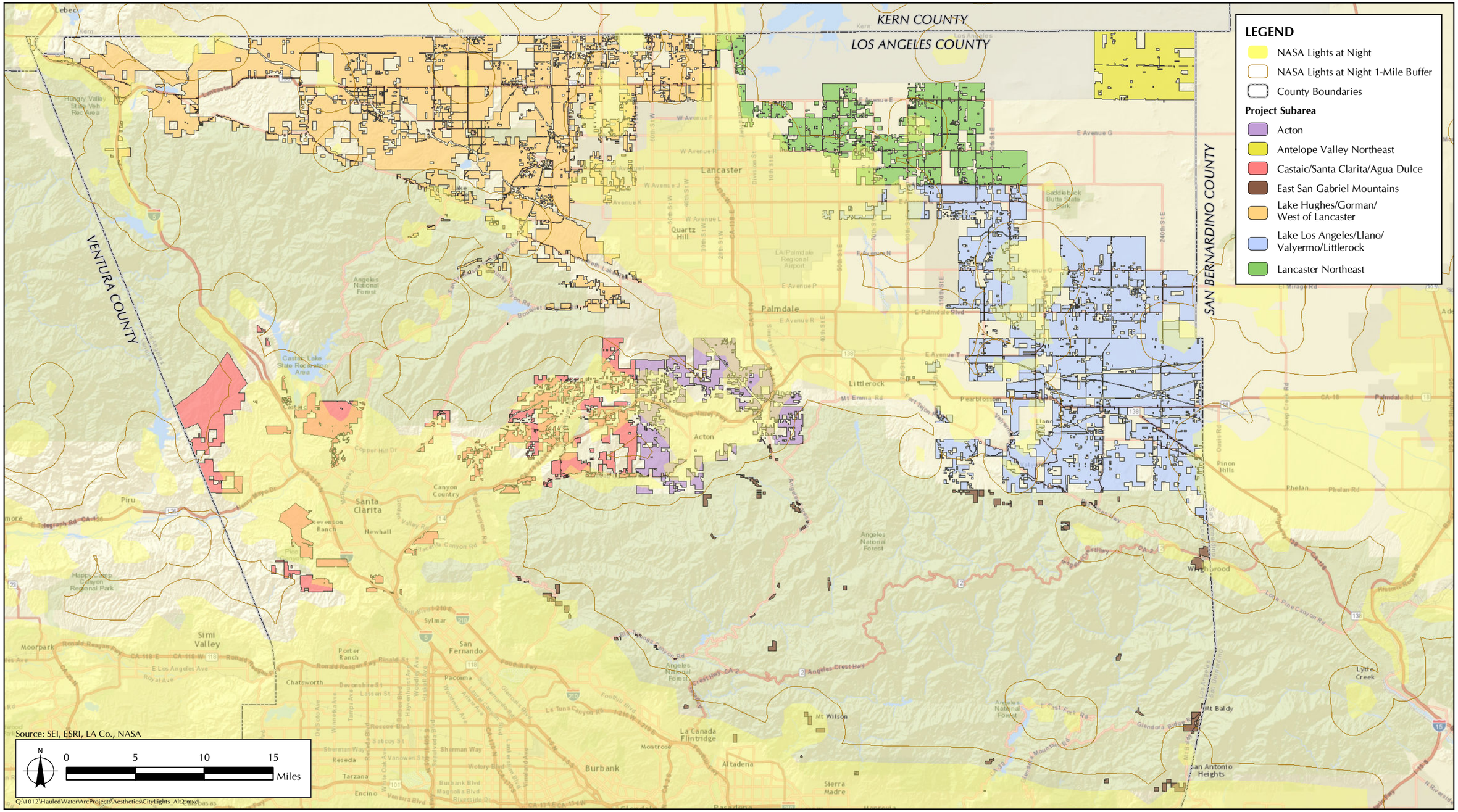

FIGURE 5.4.4-1

Nighttime Sky Glow, Alternative 2 Study Area

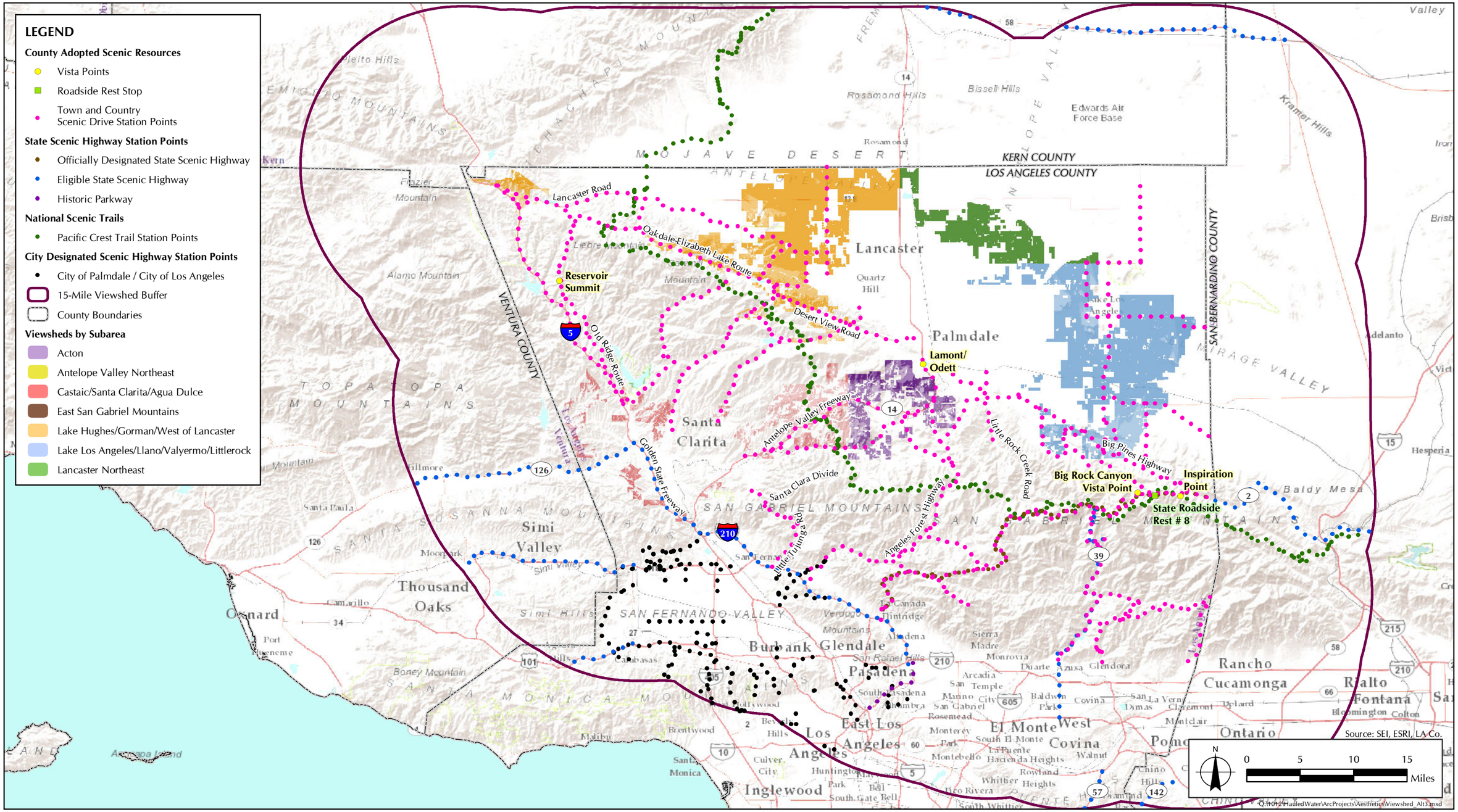

FIGURE 5.5-1

Viewshed Analysis for Alternative 3

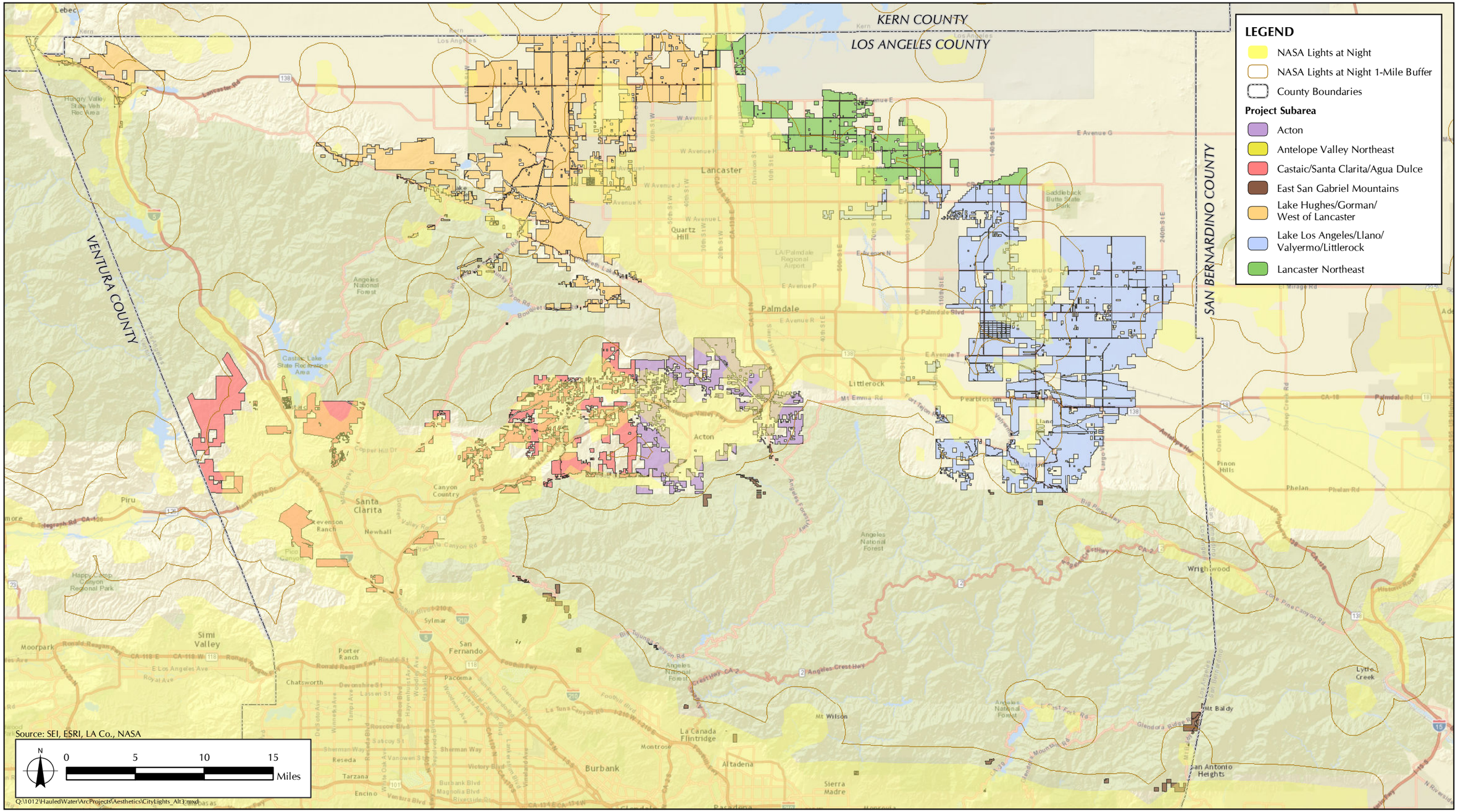

FIGURE 5.5.4-1

Nighttime Sky Glow, Alternative 3 Study Area

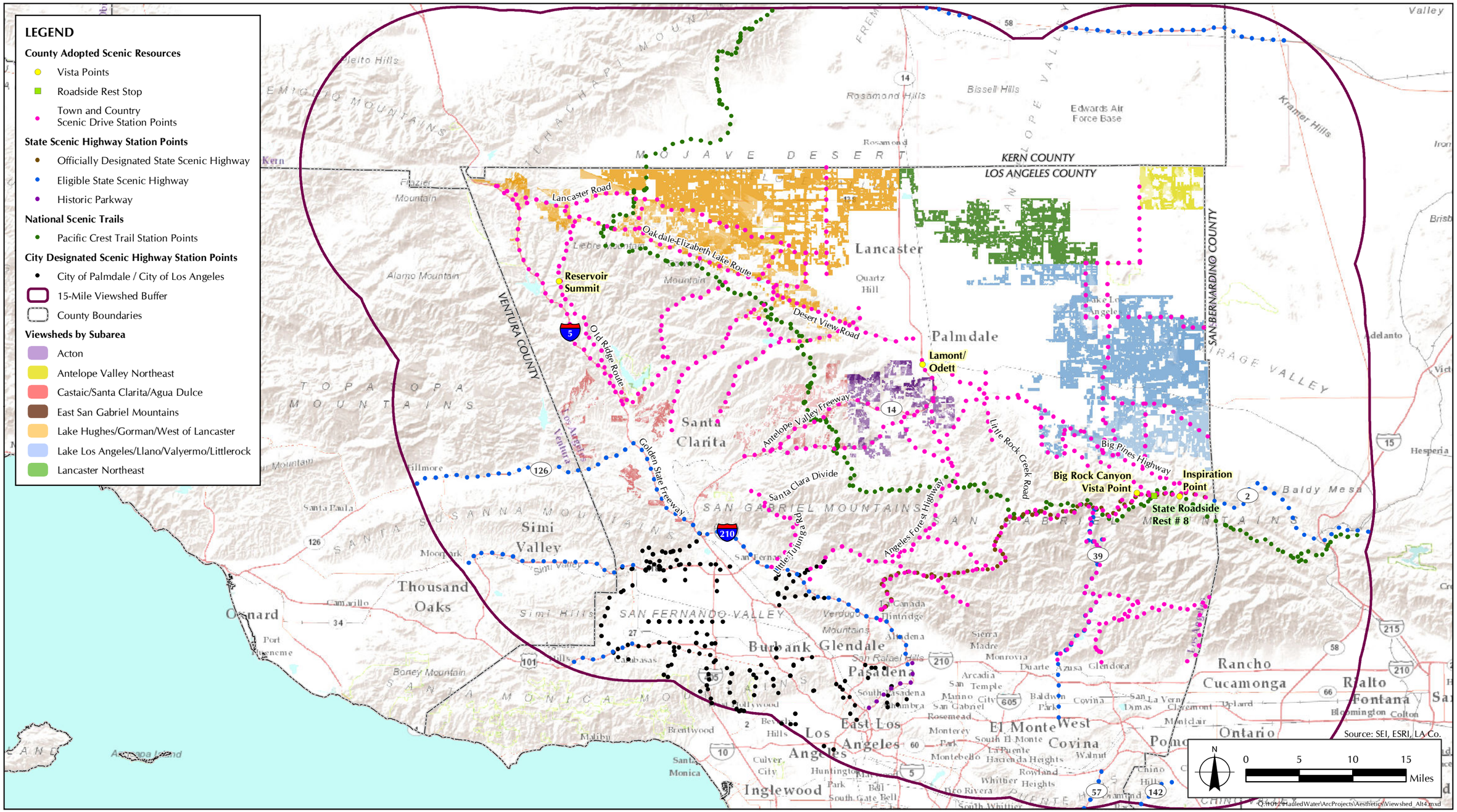

FIGURE 5.6-1

Viewshed Analysis for Alternative 4

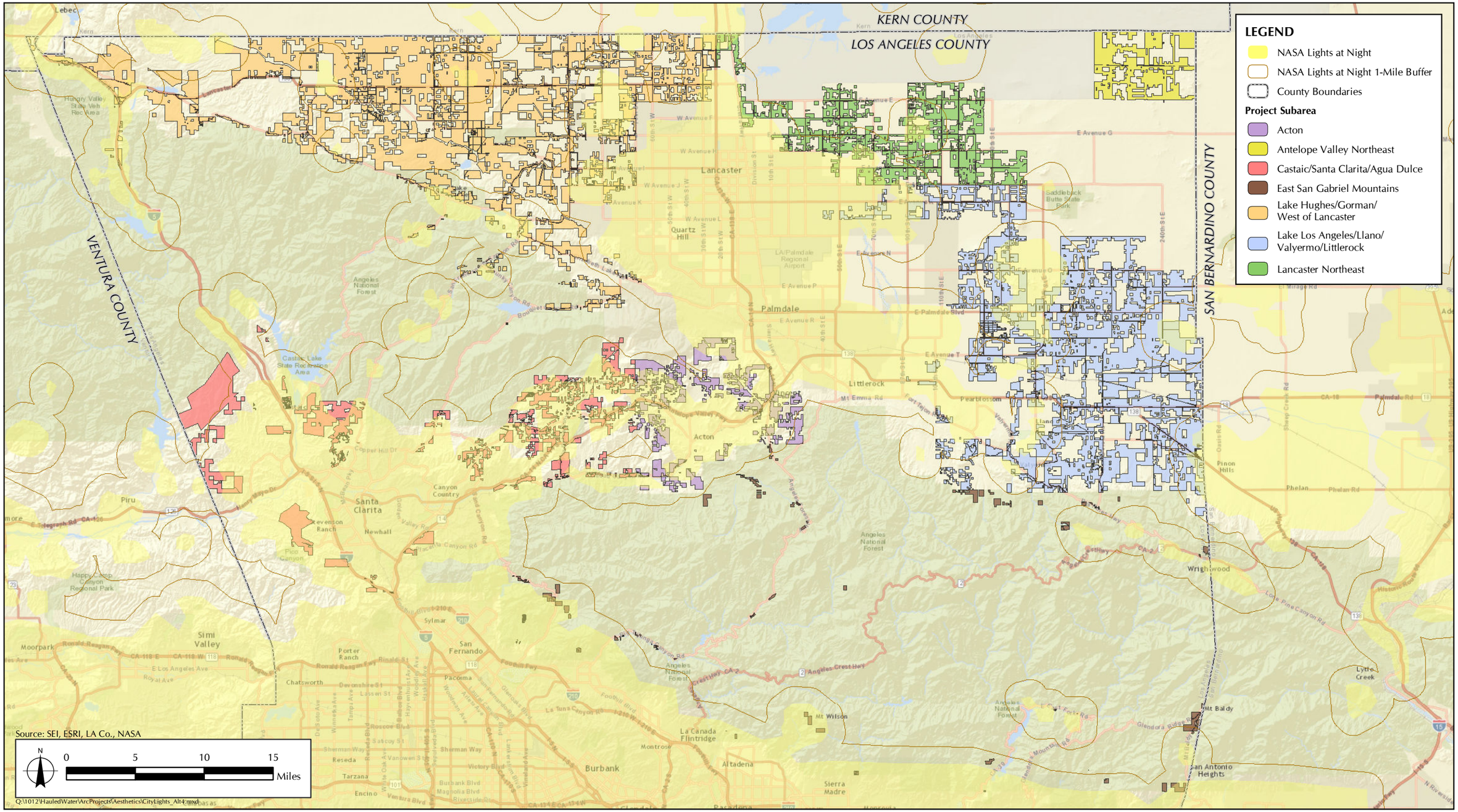

FIGURE 5.6.4-1

Nighttime Sky Glow, Alternative 4 Study Area

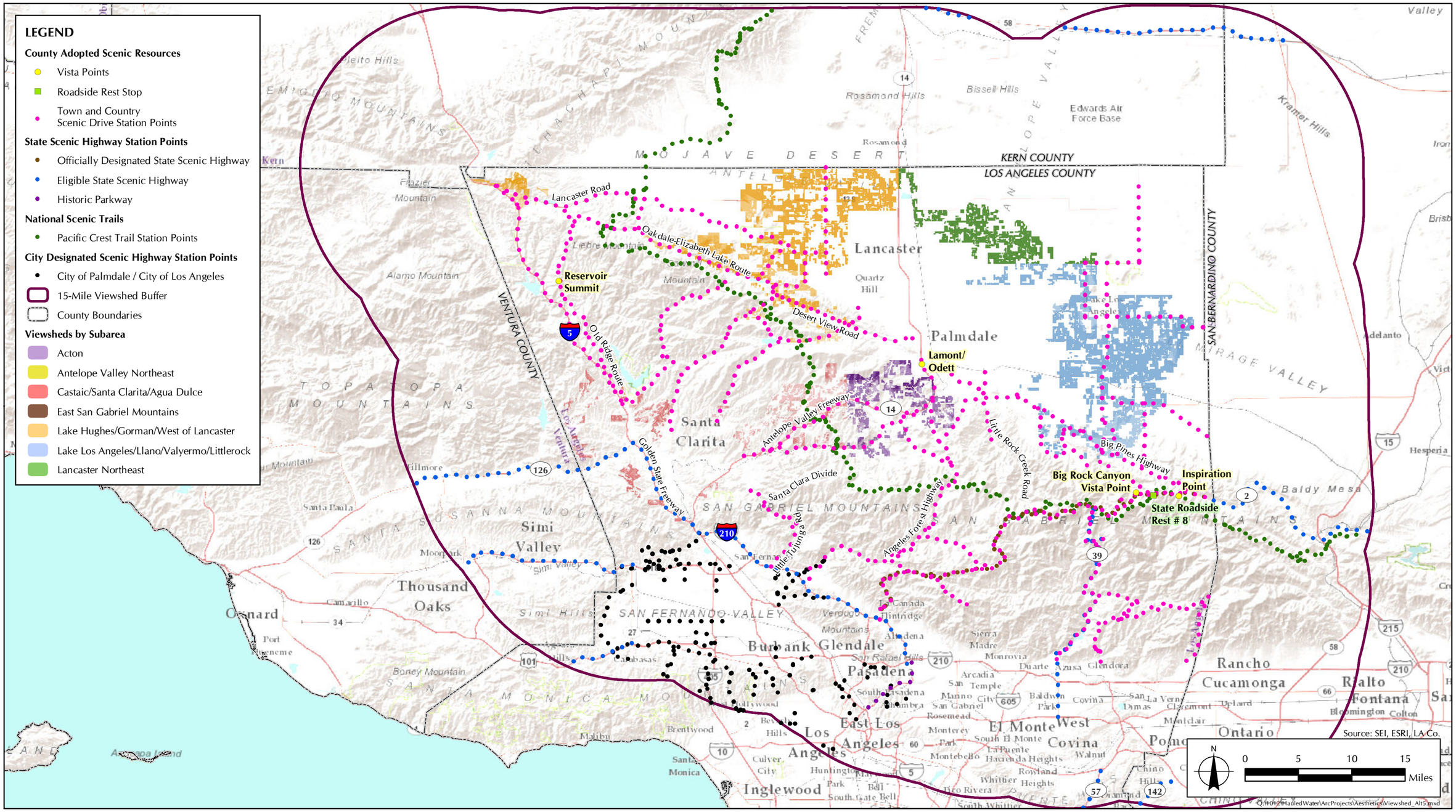

FIGURE 5.7-1

Viewshed Analysis for Alternative 5

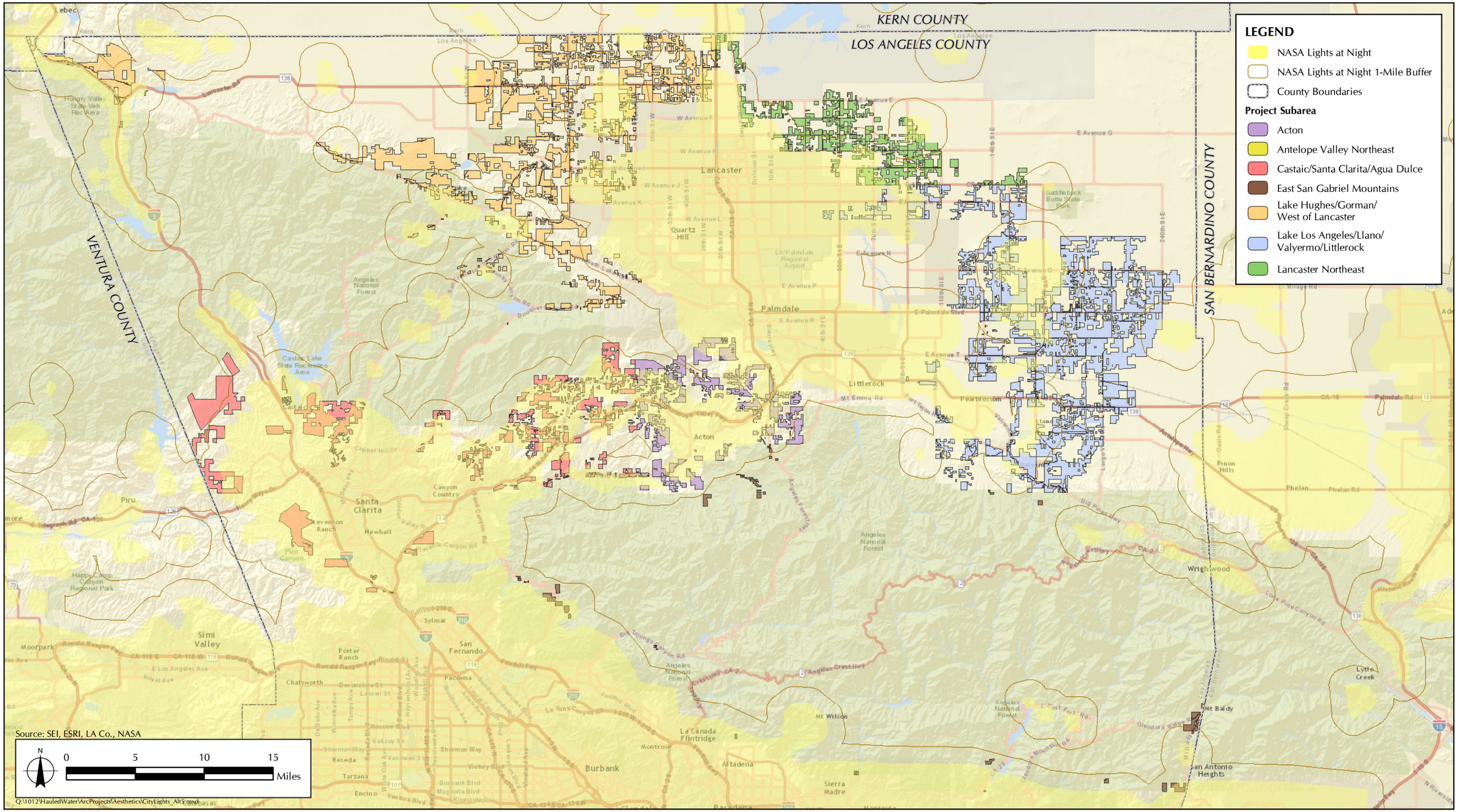

FIGURE 5.7.4-1

Nighttime Sky Glow, Alternative 5 Study Area

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Appendix H

Air Quality and Greenhouse Gas Emissions
Technical Report

SINGLE-FAMILY RESIDENTIAL HAULED WATER INITIATIVE FOR NEW DEVELOPMENT

AIR QUALITY AND GREENHOUSE GAS EMISSIONS TECHNICAL REPORT

Prepared for:

Los Angeles County Hauled Water Task Force
900 South Fremont Avenue, 11th Floor
Alhambra, California 91803-1331

Prepared by:

Sapphos Environmental, Inc.
430 North Halstead Street
Pasadena, California 91107

June 24, 2015

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APPENDIX

A CalEEMod Output for the Proposed Project

SECTION ES
EXECUTIVE SUMMARY

This Air Quality and Greenhouse Gas Emissions Technical Report was undertaken by Sapphos Environmental, Inc. for the County of Los Angeles (County), to evaluate the proposed Single-Family Residential Hauled Water Initiative for New Development (proposed initiative), in the unincorporated territory of Los Angeles County. The proposed initiative would allow hauled water as the primary source of potable water for new development of single-family residences on existing vacant legal lots, or lots that are eligible for a certificate of compliance, where the property owner has demonstrated that there is no other feasible source of private or municipal potable water, or capability of developing an on-site well to provide potable water to the property, and only if the property lies outside of the boundaries of the local private and municipal water districts and is not eligible for service by the nearest public-community water purveyor.

As a result of the technical analysis undertaken in this report, the proposed initiative was determined to result in significant impacts to VOCs, NO_x, CO, PM_{10}, $PM_{2.5}$, and greenhouse gas emissions (Table ES-1, *Summary of Findings*).

TABLE ES-1
SUMMARY OF FINDINGS

	Daily Impacts	Emissions					
		VOCs	NO_x	CO	SO_x	$PM_{2.5}$	PM_{10}
Significant Impact?	Construction	Yes	Yes	Yes	No	Yes	No
	Operation	Yes	Yes	Yes	No	Yes	Yes
	Cumulative construction	Yes	Yes	Yes	No	Yes	No
	Cumulative operation	Yes	Yes	Yes	No	Yes	Yes
		Other Emission Impacts					
	Impacts to sensitive receptors	No					
	Toxic air contaminants	No					
	Odor	No					
	Greenhouse gas emissions	Yes					

The proposed initiative would result in significant impact to air quality, as a result of conflicts with the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP), adopted in 2012, which demonstrates attainment of the federal 24-hour $PM_{2.5}$ standard by 2014 and implements the adopted 8-hour O_3 control plan, and the Antelope Valley Air Quality Management District (AVAQMD) Federal 8-hour Ozone Attainment Plan that was adopted in 2008.

The construction of the single-family homes and the hauled water trips to service the homes would cause a violation to the air quality standards. During the construction phase, the air quality impacts from constructing 184 single-family residences per year across Los Angeles County will contribute substantially to the amounts of O_3 precursors, CO, $PM_{2.5}$ (in SCAQMD), and NO_x emissions standard. For operations, the increased truck traffic from delivering hauled water and the additional passenger car trips would substantially increase the amounts of O_3 precursors, PM_{10}, $PM_{2.5}$, CO, and NO_x above the emissions standards.

When considered in conjunction with the four related projects (the Centennial Project, the High Desert Corridor Project, the Newhall Ranch Specific Plan, and the Northlake Specific Plan) the cumulative impacts of the proposed initiative to air quality would be expected to substantially increase the amounts of O_3 precursors (VOC), PM_{10}, $PM_{2.5}$, CO, and NO_x; constituting a significant impact in relation to SCAQMD and AVAQMD.

Based on the suggested 25,000 metric ton CO_{2e} threshold proposed by California Air Pollution Control Officer's Association (CAPCOA), greenhouse gas (GHG) emissions in the vicinity of the subareas would be expected to exceed this value during both construction and occupancy (supported by delivery of hauled water by truck) of single-family residences facilitated by the proposed initiative.

The proposed initiative is in conflict with the Community Climate Action Plan, which aims to reduce GHG emissions within the unincorporated areas of Los Angeles County. The proposed initiative would allow development in low density housing areas away from employment and transit and increase fuel use and transportation emissions above SCAQMD and AVAQMD significance thresholds from passenger car trips and hauled water truck trips. This would constitute a significant impact in relation to GHG emissions and violate the Plan since the proposed initiative is not aligned with the goals and policies of the Plan. The proposed initiative would also significantly contribute to the energy and water use by the County through the addition of approximately 3,680 new single-family residences.

In conclusion, construction-related air quality impacts would be significant even with the incorporation of mitigation measures. Compliance with SCAQMD Rule 403, *Fugitive Dust*, and Tier 4 emission standards for heavy construction equipment would help avoid and reduce construction-related emissions, but the cumulative impact is still significant. By 2035, impacts from the operation of the proposed initiative would be above the level of significance from the 588,000 additional passenger car vehicle miles traveled (VMT) and 4,300 water hauling truck VMT per day.

SECTION 1.0
INTRODUCTION

1.1 PURPOSE AND SCOPE

This Air Quality and Greenhouse Gas Emissions Technical Report was undertaken by Sapphos Environmental, Inc. for the County of Los Angeles (County), for the Single-Family Residential Hauled Water Initiative for New Development (proposed initiative). This technical report identifies relevant regulatory framework, baseline conditions in the proposed initiative study area as they relate to air quality, the potential for the proposed initiative to result in substantial adverse direct, indirect, and cumulative impacts on air quality and greenhouse gas (GHG) emissions from construction and occupancy of single-family residences facilitated by the approval of building permits relying on the use of hauled water as the primary source of potable water and the associated transport of hauled water, and measures or alternatives that would avoid or reduce significant impacts on air quality and greenhouse gas (GHG) emissions.

1.2 PROJECT LOCATION

The area that would be subject to the proposed initiative consists of 42,867 parcels in the unincorporated territory of Los Angeles County (see Figure 1.2-1, *Regional Vicinity Map*; and Figure 1.2-2, *Proposed Initiative Study Area Map*, at the end of this section).[1] The combined proposed initiative study area consists of approximately 340,461 acres or approximately 532 square miles.

Although this is a Countywide initiative, the parcels that would potentially be affected by the proposed initiative are located entirely within the 5th Supervisorial District in the northern one-third of the County, including areas located in the San Gabriel Mountains; in the Antelope Valley; areas located northeast of the City of Santa Clarita, north and south of California State Route 14; and, areas that are southwest of the City of Palmdale in the communities of Agua Dulce and Acton. The subject parcels have been categorized into seven subareas:

1. **Lake Hughes/Gorman/West of Lancaster:** The Lake Hughes/Gorman/West of Lancaster subarea is located in an area generally located west of State Highway 14 and north of the Angeles National Forest. This subarea consists of 15,166 parcels and encompasses approximately 195.4 square miles (125,041.4 acres). State Highway 138 bisects the subarea in an east-west direction, and State Highway 14 forms the eastern boundary of this subarea. This subarea is adjacent to the northwestern edge of the incorporated City of Lancaster.

2. **Lancaster Northeast:** The Lancaster Northeast subarea is located in an area generally east of State Highway 14 and north of East Avenue J. This subarea consists of 6,794 parcels and encompasses approximately 55.2 square miles (35,324.90 acres). State Highway 14 forms the western boundary and East Avenue J forms the southern boundary of this subarea. Edwards Air Force Base is located north of the study area. This subarea is adjacent to the northeastern edge of the incorporated City of Lancaster.

[1] Assessor's Parcels Numbers for the referenced parcels are on file at the Los Angeles County Department of Regional Planning.

3. **Antelope Valley Northeast:** The Antelope Valley Northeast subarea is located in an area generally located north of East Avenue E and east of 165th Street East in the far northeastern portion of Los Angeles County. This subarea consists of 1,938 parcels and encompasses approximately 22.7 square miles (14,528.23 acres). This subarea is relatively isolated and is located in the northeastern area of Los Angeles County. This subarea is located approximately 10.9 miles northeast of the incorporated City of Palmdale and approximately 11.3 miles northeast of the incorporated City of Lancaster.

4. **Lake Los Angeles/Llano/Valyermo/Littlerock:** The Lake Los Angeles/Llano/ Valyermo/Littlerock subarea is located in an area generally south of East Avenue J, east of 47th Street East. This subarea consists of 14,822 parcels and encompasses approximately 168.8 square miles (108,067.33 acres). Avenue J forms the northern boundary, the Cities of Palmdale and Lancaster form the western boundary, and the San Bernardino County line forms the eastern boundary of this subarea. This subarea is adjacent to the eastern edge of the incorporated City of Palmdale.

5. **Acton:** The Acton subarea is located in an area generally east of Hubbard Road and West of 47th Street East. This subarea consists of 1,246 parcels and encompasses approximately 28.2 square miles (18,067.22 acres). The Angeles National Forest is located to the north and south of the subarea. This subarea is adjacent to the southwestern edge of the incorporated City of Palmdale.

6. **Castaic/Santa Clarita/Agua Dulce:** The Castaic/Santa Clarita/Agua Dulce subarea is located generally west of Hubbard Road and north of the 210 Freeway excluding Kagel Canyon. This subarea consists of 2,243 parcels and encompasses approximately 55.2 square miles (35,340.2 acres). This subarea is adjacent to the northern, western, and southern edges of the incorporated City of Santa Clarita and the northern edge of the incorporated City of Los Angeles.

7. **East San Gabriel Mountains:** The East San Gabriel Mountains subarea consists of parcels generally located within the Angeles National Forest east of State Highway 14, north of the 210 Freeway, south of the Pearblossom Highway, and west of the San Bernardino County line. This subarea consists of 658 parcels and encompasses approximately 6.4 square miles (4,092.26 acres). This subarea is adjacent to the northern edges of the San Gabriel and San Fernando Valleys.

The proposed initiative study area is located within 53 USGS 7.5-minute quadrangle maps (see Figure 1.2-3, *USGS 7.5-Minute Quadrangle Index*, at the end of this section):

- Acton
- Adobe Mountain
- Agua Dulce
- Alpine Butte
- Azusa
- Black Mountain
- Burnt Peak
- Chilao Flat
- Condor Peak
- Crystal Lake
- Del Sur
- El Mirage
- Fairmont Butte
- Frazier Mountain
- Glendora
- Green Valley
- Hi Vista
- Jackrabbit Hill
- Juniper Hills
- La Liebre Ranch
- Lake Hughes
- Lancaster East
- Lancaster West
- Lebec
- Liebre Mountain
- Little Buttes
- Littlerock
- Lovejoy Buttes
- Mescal Creek
- Mint Canyon
- Mount Baldy
- Mount San Antonio
- Mount Wilson
- Neenach School
- Newhall
- Oat Mountain
- Pacifico Mountain
- Palmdale
- Pasadena
- Redman
- Ritter Ridge
- Rogers Lake South
- Rosamond
- Rosamond Lake
- San Fernando
- Simi Valley East
- Sleepy Valley
- Sunland
- Val Verde
- Valyermo
- Warm Springs Mountain
- Waterman Mountain
- Whitaker Peak

The elevation of the overall proposed initiative study area ranges from 7,409 feet above sea level in the East San Gabriel Mountains subarea to 862 feet above sea level also in the East San Gabriel Mountains subarea (Figure 1.2-3).

1.3 PROJECT DESCRIPTION

The Los Angeles County Board of Supervisors has directed the consideration of a proposed initiative that would allow hauled water as the primary source of potable water for new development of single-family residences on existing vacant legal lots, or lots that are eligible for a certificate of compliance, where the property owner has demonstrated that there is no other feasible source of private or municipal potable water, or capability of developing an on-site well to provide potable water to the property, and only if the property lies outside of the boundaries of the local private and municipal water districts. The proposed initiative is proposed for parcels that are larger than 2,000 square feet in size, with slopes under 50 percent (26.6 degrees). The term vacant is used as identified by the County Assessor.

In order to determine which areas would be subject to the proposed initiative, the Los Angeles County Department of Regional Planning developed a geographic information system (GIS) suitability model in 2012 based on five criteria defined by the Task Force:

- Parcels located in the unincorporated territory of Los Angeles County
- Vacant parcels
- Parcels located in areas where there is no designated water purveyor
- Zoning and General Plan designation that allow for development of a single-family residence
- Parcel size greater than 2,000 square feet with slopes under 50 percent (26.6 degrees)

The model was re-run in 2015 to incorporate the recently adopted Antelope Valley Town and Country Plan and General Plan amendment.[2] From this process and refinements, 42,867 parcels were identified as subject to the proposed initiative.

1.3.1 Construction Scenario

Given the initiative as proposed, 42,867 parcels would become eligible to develop single-family residences on their properties as a consequence of being able to supply water through the use of water hauling trucks. Construction on the specific parcels would be at the parcel owner's discretion, as well as on their schedule, providing a significant challenge in attempting to accurately estimate a construction scenario for the proposed initiative.

Historical development trends from 1997 to 2014 and an anticipated growth factor of 25 percent were used to estimate the average number of building permits per year.[3] Of the eligible 42,867 parcels, the estimated parcel size is approximately four acres with an anticipated disturbance of 36 percent of the parcel. The reasonable worst-case scenario assumes the annual average rate of issuance of building permits over the 20-year 2015 to 2035 planning horizon would be approximately 32 per year in the Santa Clarita Valley and approximately 152 per year in the Antelope Valley for a total of 184 permits per year for both areas. The total anticipated building permits over the 20-year 2015 to 2035 planning horizon would be approximately 3,680. As a result, it is anticipated that the disturbance area for the single-family residences constructed on these parcels would be approximately 5,295 acres.

Construction of residences within the proposed initiative would require approximately 14 months. Approximately 20 workers would be expected to be on-site during peak construction activity periods. Approximately five workers would be expected to be on-site during non-peak construction activity periods. Site preparation and construction of the proposed initiative would be undertaken in accordance with all federal, State, and County building codes. Construction would be scheduled in compliance with County regulations.

The construction scenario is assumed as part of compliance with Los Angeles County Municipal Code regulations and standard practices for construction and development. Construction

[2] Los Angeles County. November 2014. Available at: http://planning.lacounty.gov/assets/upl/project/tnc_draft-20141103.pdf

[3] Southern California Association of Governments. 12 March 2012. 2012 Adopted RTP Growth Forecast. PDF available at: http://www.scag.ca.gov/Documents/2012AdoptedGrowthForecastPDF.pdf Main website: http://www.scag.ca.gov/DataAndTools/Pages/GrowthForecasting.aspx

equipment would be turned off when not in use. The construction contractor would be required to ensure that all construction, demolition, and grading equipment are properly maintained. All vehicles and compressors would utilize exhaust mufflers and engine enclosure covers (as designed by the manufacturer) at all times. All grading and earthwork would be performed under the observation of a geotechnical engineer to ensure proper subgrade preparation, selection of satisfactory materials, and placement and compaction of structural fills. Any unanticipated adverse conditions encountered would be evaluated by the project engineering geologist and the soils engineer, and the appropriate recommendation made and implemented.

1.3.2 Operations

According to the Traffic Impact Study conducted by Fehr & Peers Transportation Consultants, it is estimated that the proposed initiative in the operational phase will generate approximately 588,000 net passenger car VMT and approximately 4,300 net hauled water truck VMT per average day at full build-out of 3,680 parcels.[4] These estimates are likely to be a worst-case scenario, operating under the assumption of 5,000 gallons of water per residence per week for domestic use and 5,000 gallons of water per residence per year for fire supply.[5] At full build-out, the proposed initiative would result in 4,300 water truck VMT per day with 134 trucks traveling on average 31.8 miles round trip. It is assumed one truck could visit up to four parcels in a day, which equates to 134 trucks in operation daily to serve all 3,680 parcels. The residents on each parcel are estimated to take on average 10 daily trips of approximately 16 miles roundtrip in length for an additional 588,000 passenger car VMT daily.

1.4 DEFINITIONS

AAQS: Ambient air quality standards (AAQS) define the maximum amounts of a pollutant that can be present in outdoor air without causing harm to the public's health, as established by a public agency. This analysis references both the National AAQS (NAAQS) established pursuant to the federal Clean Air Act and the State of California (CAAQS) established pursuant to the State Clean Air Act.

AVAQMD: The Antelope Valley Air Quality Management District (AVAQMD) is the local agency with the primary responsibility for the control of non-vehicular sources of air pollution through the Antelope Valley.

CAPCOA: California Air Pollution Control Officer's Association (CAPCOA) is a nonprofit association of the air pollution control officers from all 35 local air quality agencies throughout California.

CARB: California Air Resources Board (CARB) is a part of the California Environmental Protection Agency and is responsible for attaining and maintaining healthy air quality, conducting air pollution research, and systematically solving air quality issues throughout the State.

CEQ: The Council on Environmental Quality (CEQ) is a division of the Executive Office of the President that coordinates federal environmental efforts in the United States and works closely with

[4] Fehr & Peers. June 2015. *Single-Family Residential Hauled Water Initiative for New Development: Traffic Analysis*. Prepared for: Los Angeles County Hauled Water Task Force.

[5] Fehr & Peers. June 2015. *Single-Family Residential Hauled Water Initiative for New Development: Traffic Analysis*. Prepared for: Los Angeles County Hauled Water Task Force.

agencies and other White House offices in the development of environmental and energy policies and initiatives.

CO: Carbon monoxide (CO) is a colorless, odorless gas formed by the incomplete combustion of fossil fuels.

CO_2: Carbon dioxide (CO_2) is a colorless, odorless, and nonflammable gas that is the most abundant greenhouse gas in the Earth's atmosphere after water vapor.

GHG: Greenhouse gases trap heat in the Earth's atmosphere, leading to an increase in global warming.
GWP: Global warming potential (GWP) is a relative measure of how much heat a greenhouse gas traps in the atmosphere.

H_2S: Hydrogen sulfide (H_2S) is a colorless gas with the foul characteristic odor of rotten eggs, and is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations.

IPCC: Intergovernmental Panel on Climate Change (IPCC) produces reports that support the United Nations Framework Convention on Climate Change (UNFCCC), which is the main international treaty on climate change.

MDAB: The Mojave Desert Air Basin (MDAB) is one of several geopolitical regional air basin areas designated by the state government of California, for the purpose of air quality management and air pollution control in Southern California. The MDAB is comprised of four air districts: the Kern County Air Pollution Control District, the Antelope Valley Air Quality Management District, the Mojave Desert Air Quality Management District, and the eastern portion of the South Coast Air Quality Management District.

N_2O: Nitrous oxide (N_2O) is a clear, colorless gas with a slightly sweet odor that is primarily produced by agricultural soil management including soil cultivation practices, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, and production of adipic and nitric acids.

NO_2: Nitrogen dioxide (NO_2) is a highly reactive, brownish-red gas that plays a major role in the formation of ground-level ozone and acid rain.

O_3: Ozone (O_3) is a colorless gas that is formed in the atmosphere when reactive organic gases react in the atmosphere in the presence of ultraviolet sunlight and is one of the main components of photochemical smog in urban areas.

$PM_{2.5}$: Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) with primary sources that include fuel combustion from motor vehicles, power generation, industrial facilities, residential fireplaces, and wood stoves.

PM_{10}: Particulate matter less than 10 microns in diameter (PM_{10}) with primary sources that include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning activities; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

Pb: Lead (Pb) in the atmosphere occurs as particulate matter with primary sources that include leaded gasoline, battery manufacture, paint, ink, ceramics, ammunition, and secondary Pb smelters.

ROG: Reactive organic gases (ROGs), also known as volatile organic compounds (VOCs) are emitted from incomplete combustion of hydrocarbons or other carbon-based fuels.

SCAB: The Southern California Air Basin (SCAB) is one of several geopolitical regional air basin areas designated by the state government of California, for the purpose of air quality management and air pollution control in Southern California. The SCAB district was created in 1969 and includes all of Orange County and the non-desert regions of Los Angeles, Riverside, and San Bernardino Counties.

SCAG: The Southern California Association of Governments (SCAG) is the nation's largest metropolitan planning organization, representing six counties, 191 cities, and more than 18 million residents. SCAG undertakes a variety of planning and policy initiatives to encourage a more sustainable Southern California now and in the future.

SCAQMD: South Coast Air Quality Management District (SCAQMD) is the air pollution agency responsible for regulating stationary sources of air pollution in the South Coast Air Basin. The SCAQMD develops, adopts and implements an Air Quality Management Plan for bringing the area into compliance with the clean air standards established by national and State governmental legislation.

SO_2: Sulfur dioxide (SO_2) is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Generally, the highest levels of SO_2 are found near large industrial complexes where coal and oil are used in power plants and industries.

SO_4^{-2}: Sulfates (SO_4^{-2}) are particulate products of combustion of sulfur-containing fossil fuels.

TACs: Toxic air contaminants (TACs) are airborne pollutants that potentially pose a hazard to human health or may be expected to result in an increased rate of mortality or serious illness.

VOC: Volatile organic compounds (VOCs), also known as reactive organic gases (ROGs), are emitted from incomplete combustion of hydrocarbons or other carbon-based fuels.

U.S. EPA: U.S. Environmental Protection Agency (U.S. EPA) is an agency of the U.S. federal government that was created for the purpose of protecting human health and the environment by writing and enforcing regulations based on laws passed by Congress. The Clean Air Act requires the U.S. EPA to establish national ambient air quality standards for certain common and widespread pollutants based on the latest science.

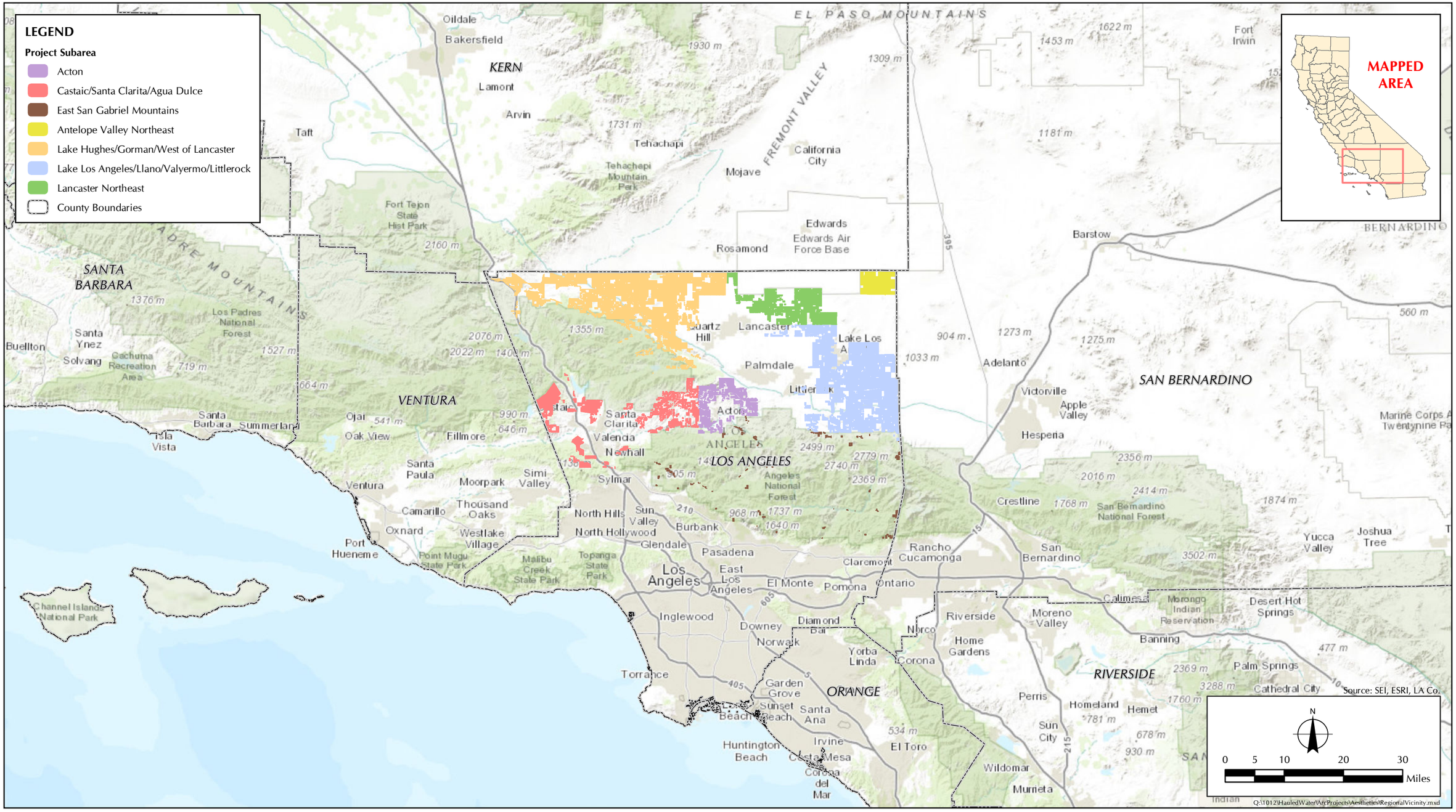

FIGURE 1.2-1

Regional Vicinity Map

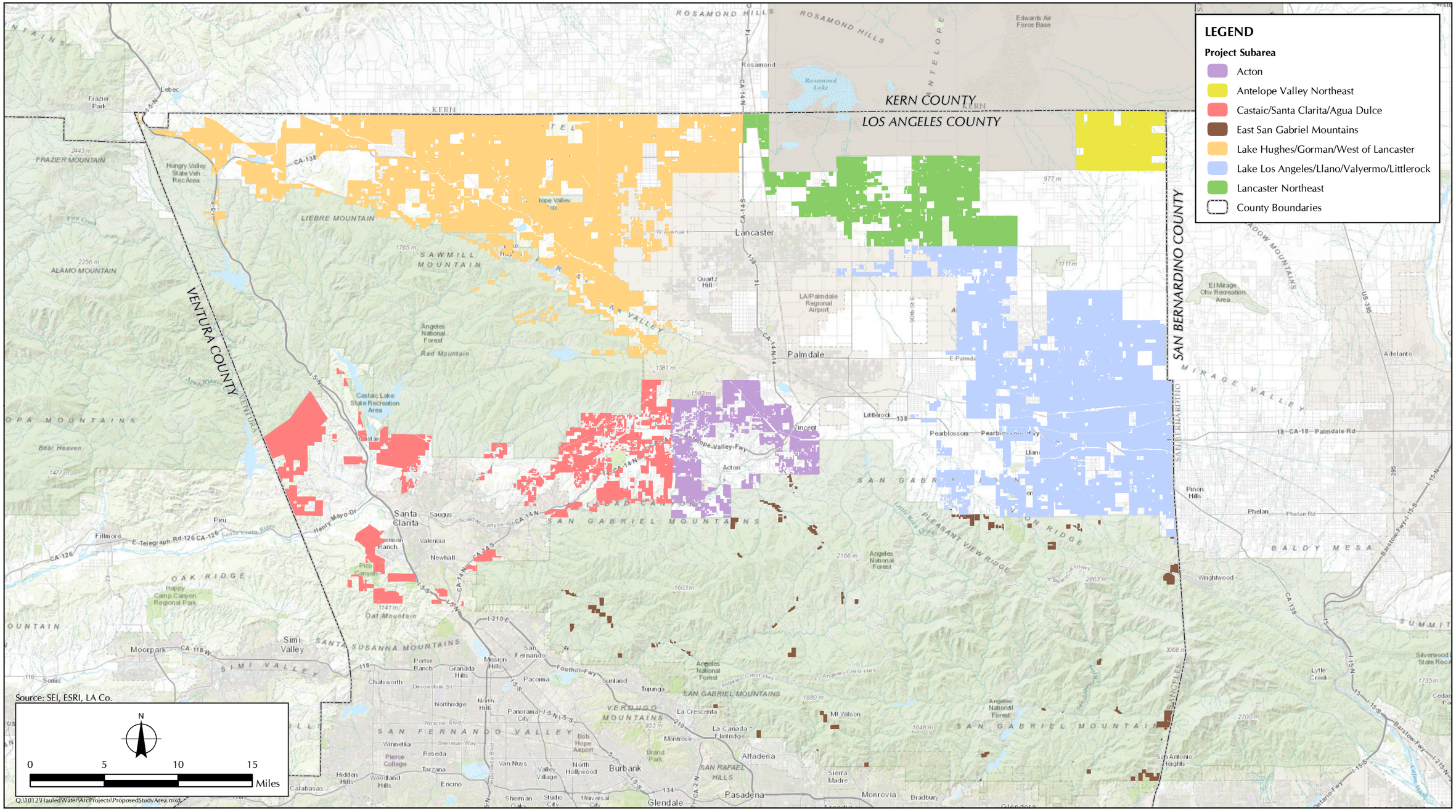

FIGURE 1.2-2

Proposed Initiative Study Area

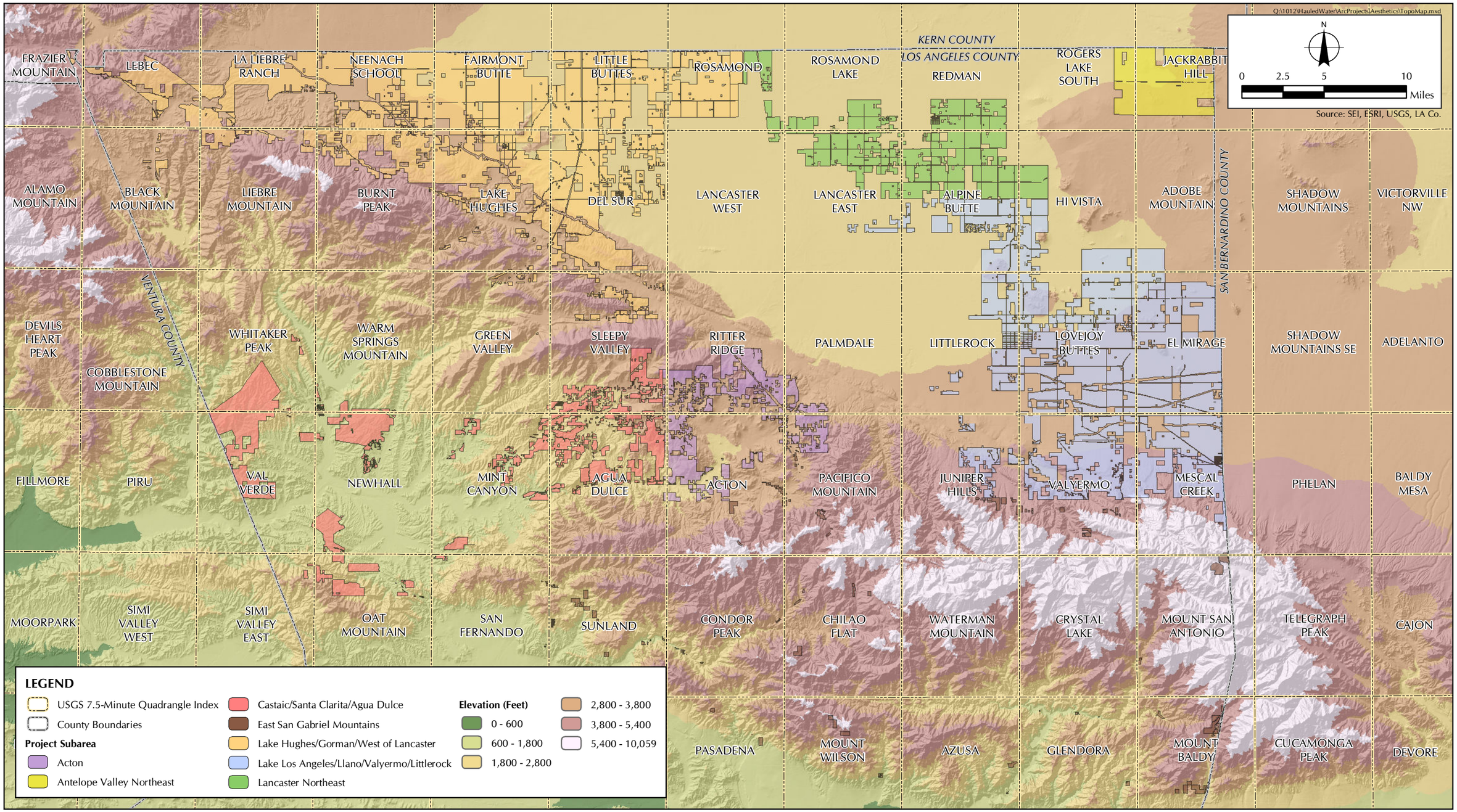

FIGURE 1.2-3

USGS 7.5-Minute Quadrangle Index

SECTION 2.0
BACKGROUND

The air quality and greenhouse gas (GHG) analysis provided in this section evaluates the air quality and GHG emissions impact level of significance associated with the construction, operation, and maintenance activities of the proposed Single-Family Residential Hauled Water Initiative (proposed initiative). The analysis contained herein focuses on GHG emissions and criteria pollutants designated by the federal Clean Air Act (CAA). Relevant regulatory framework is used to determine the consistency of the proposed initiative with federal and State laws that govern the regulation of air quality and to determine the level of significance of the proposed initiative's impacts to air quality. Mitigation measures are subsequently provided to reduce air quality impacts identified to be potentially significant. The information used in this analysis is based on a review of relevant literature and technical reports (see Section 3.0, *References*, for a list of reference materials consulted). The conclusion of this analysis is supported by air quality modeling results (Appendix A, *CalEEMod Output for the Proposed Initiative*).

2.1 POLLUTANTS AND THEIR EFFECTS

The analysis contained herein reviews criteria pollutants designated by the federal and California CAAs. Criteria air pollutants are defined as pollutants that are hazardous to human health and are regulated by federal and State ambient air quality standards or criteria for outdoor concentrations. The federal and State standards have been set at levels above which concentrations would be harmful to human health and are designed to protect the most sensitive persons from illness or discomfort. Criteria pollutants of concern include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb). As defined by the federal CAA, "hazardous air pollutants" refers to a variety of pollutants generated or emitted by industrial production activities. Called toxic air contaminants (TACs) under the California CAA, 10 pollutants have been identified through ambient air quality data as posing the most substantial health risk in California. On April 2, 2007, the Supreme Court in *Massachusetts, et al. v. Environmental Protection Agency, et al.* (549 U.S. 1438; 127 S. Ct. 1438) ruled that the CAA gives the U.S. Environmental Protection Agency (EPA) the authority to regulate emissions of GHGs, including carbon dioxide (CO_2); methane (CH_4); nitrous oxide (N_2O); and fluorinated gases, such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride,[1] thereby legitimizing GHGs as air pollutants under the CAA.

GHGs trap energy from the sun and help maintain the temperature of the Earth's surface, creating a process known as the greenhouse effect. The sun emits solar radiation, providing energy to Earth. Six percent of the solar radiation emitted by the sun is reflected back by the atmosphere surrounding the Earth, 20 percent of the solar radiation is scattered and reflected by clouds, 19 percent of the solar radiation is absorbed by the atmosphere and clouds, 4 percent of the solar radiation is reflected back to the atmosphere by the Earth's surface, and 51 percent of the solar energy is absorbed by the Earth's surface. GHGs such as CO_2 and CH_4 are naturally present in the atmosphere. The presence of these gases prevents outgoing infrared radiation from escaping the Earth's surface and lower atmosphere, resulting in a warmer atmospheric layer known as the troposphere. Without these GHGs, Earth would be too cold to be habitable; however, an excess of GHGs in the atmosphere can result in global climate change by raising the Earth's mean

[1] U.S. Supreme Court. 2 April 2007. Massachusetts, et al. v. Environmental Protection Agency, et al. 549 U.S. 1438; 127 S. Ct. 1438. Washington, D.C.

temperature, resulting in environmental consequences related to snowpack losses, flood hazards, sea level rises, and fire hazards.

Global climate change results from a combination of three factors: (1) natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun; (2) natural processes within the Earth's climate system, such as changes in ocean circulation; and (3) anthropogenic activities, such as fossil fuel combustion, deforestation, reforestation, urbanization, and desertification, that alter the composition of atmospheric gases. In its 2007 climate change synthesis report to policymakers, the Intergovernmental Panel on Climate Change (IPCC) concluded, "global GHG emissions due to human activities have grown since pre-industrial times, with an increase of 70 percent between 1970 and 2004."[2] Therefore, significant attention is being given to the anthropogenic causes of the increased GHG emissions level. In the review of regulatory publications from California Air Pollution Control Officers Association (CAPCOA),[3] California Air Resources Board (CARB),[4] the California Attorney General,[5] and the Governor's Office of Planning and Research (OPR),[6] there exists a consensus on the close association between fossil fuel combustion, in conjunction with other human activities, and GHG emissions. In California, GHG emissions are largely contributed by the transportation sector, which was determined responsible for 35 percent of 1990 and 38 percent of 2004 GHG emissions statewide. After transportation followed the electricity generation sector, which was responsible for 25 percent of statewide emissions in both 1990 and 2004; the industrial sector, which was responsible for 24 percent of 1990 and 20 percent of 2004 statewide GHG emissions; and the commercial sector, which was responsible for three percent of statewide emissions in both 1990 and 2004.[7]

A detailed description of the characteristics and effects of criteria pollutants and GHGs are provided below to contextualize the analysis.

2.1.1 Carbon Monoxide

Carbon Monoxide (CO) is a colorless, odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircrafts, and trains. In urban areas, automobile exhaust accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, including wind speed, topography, and atmospheric stability. CO produced by motor vehicle exhaust can be locally concentrated when surface-based temperature inversions are combined with calm

[2] Intergovernmental Panel on Climate Change. Approved 12–17 November 2007. Climate Change 2007: Synthesis Report, Summary for Policymakers, p. 5. Valencia, Spain. Available online at: http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf

[3] California Air Pollution Control Officers Association. January 2008. CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. Sacramento, CA.

[4] California Air Resources Board. 24 October 2008. Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act. Available online at: http://www.opr.ca.gov/ceqa/pdfs/Prelim_Draft_Staff_Proposal_10-24-08.pdf

[5] California Department of Justice, Office of the Attorney General. Updated 9 December 2008. The California Environmental Quality Act Addressing Global Warming Impacts at the Local Agency Level. Sacramento, CA.

[6] California Governor's Office of Planning and Research. 19 June 2008. CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review. Technical Advisory. Sacramento, CA.

[7] California Air Resources Board. 16 November 2007. California 1990 Greenhouse Gas Emissions Level and 2020 Limit. Sacramento, CA.

atmospheric conditions, such as situations at dusk in urban areas between November and February.[8] The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. CO has a higher binding affinity to hemoglobin than oxygen (O_2), so it can replace O_2 in the blood, reducing the blood's ability to transport O_2 to vital organs. Low CO concentrations can cause fatigue in healthy persons and chest pain in persons with heart disease. At moderate concentrations, CO can cause angina, impaired vision, and reduced brain function. At high concentrations, CO can cause impaired vision and coordination, headaches, dizziness, confusion, and nausea. At very high concentrations, CO exposure can be fatal.

2.1.2 Reactive Organic Gases and Volatile Organic Compounds

Volatile organic compounds (VOCs), also known as reactive organic gases (ROGs), include any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. Additionally, there is a list of excluded organic compounds considered to be non-reactive or low-reactive organic gases that are not held to be precursors to the formation of atmospheric ozone. The U.S. EPA and CARB maintain separate but similar lists of organic gases that are excluded as regulated VOCs, or ROGs, as termed by CARB.[9] VOCs are emitted from incomplete combustion of hydrocarbons or other carbon-based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of hydrocarbons. The evaporation of petroleum fuels, solvents, dry-cleaning solutions, and paint presents another potential source of hydrocarbons.

The primary health effects of hydrocarbons result from the formation of ozone and its related health effects (see Section 2.1.3, *Ozone*). High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate federal or California ambient air quality standards for VOCs. Carcinogenic forms of VOCs are considered TACs. One example is benzene, a known carcinogen. The health effects of individual VOCs are described in Section 2.1.16.

2.1.3 Ozone

Ozone (O_3) is a colorless gas that is formed in the atmosphere when ROGs, which include VOCs and nitrogen oxides (NO_x), react in the atmosphere in the presence of ultraviolet sunlight. The primary sources of VOCs and NO_x are automobile exhaust emissions and industrial emissions. Ideal conditions for O_3 formation occur during summer and early fall on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 is one of the main components of photochemical smog in urban areas. Health effects associated with exposure to O_3 include increased respiratory and cardiovascular disease; increased symptoms of respiratory illness, such as a cough, phlegm, and wheeze; decreased lung function; increased bronchodilator usage; and increased daily mortalities.

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[8] Inversion is an atmospheric condition in which a layer of warm air traps cooler air near the surface of the earth, preventing the normal rising of surface air.

[9] California Air Resources Board, Planning and Technical Support Division, Emission Inventory Branch. Revised January 2009. "Definitions of VOC and ROG." Sacramento, CA. Available online at: http://www.arb.ca.gov/ei/speciate/voc_rog_dfn_1_09.pdf

2.1.4 Nitrogen Dioxide

Nitrogen Dioxide (NO_2) is a highly reactive, brownish-red gas that plays a major role in the formation of ground-level O_3 and acid rain. NO_2 is produced in the atmosphere from the reaction of atmospheric oxygen (O_2) with nitric oxide (NO). NO_x collectively refers to both NO and NO_2. The main sources of NO_2 include fuel combustion in industry and in motor vehicles. High concentrations of NO_2 can cause breathing difficulties and can result in a brownish-red cast to the atmosphere with reduced visibility. NO_2 is toxic to various animals and to humans because it can react with water to form nitric acid in the eyes, lungs, mucus membranes, and skin. Epidemiological studies have shown associations between NO_2 concentrations and chronic pulmonary fibrosis and daily mortalities from respiratory and cardiovascular causes. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 parts per million (ppm).

2.1.5 Sulfur Dioxide

Sulfur Dioxide (SO_2) is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Generally, the highest levels of SO_2 are found near large industrial complexes where coal and oil are used in power plants and industries. In recent years, SO_2 concentrations have been reduced due to the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 causes its irritant effects by stimulating nerves in the lining of the nose and throat and the lungs' airways. This causes a reflex cough, irritation, and a feeling of chest tightness, which may lead to narrowing of the airways. Acute respiratory symptoms and diminished ventilator function in children can be caused by SO_2 emissions, which can also damage plants and erode metals. When SO_2 and NO_x react with water, oxygen, and oxidants, they form acidic compounds that can be deposited as dry particulate matter or in the wet form as acid rain, snow, or fog. Acid rain harms lakes, streams, trees, crops, and historic buildings and monuments.[10]

2.1.6 Particulate Matter

Particulate Matter (PM) consists of very small liquid and solid particles suspended in air, which can include smoke, soot, dust, salts, acids, and metals. PM can be formed when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. Fine particulate matter ($PM_{2.5}$) refers to particles that are 2.5 microns or less in diameter, which is roughly 1/28th the diameter of a human hair. PM_{10} refers to particles that are 10 microns or less in diameter, which is about 1/7th the thickness of a human hair. Primary sources of $PM_{2.5}$ emissions include fuel combustion from motor vehicles, power generation, industrial facilities, residential fireplaces, and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as SO_2, NO_x, and VOCs. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning activities; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-sized particles pose. When inhaled, small particles can penetrate the natural defenses of the human respiratory system and damage the respiratory tract. Elevated particulate levels have been strongly linked to premature deaths, hospital

[10] U.S. Environmental Protection Agency. Updated 11 June 2013. "Sulfur Dioxide (SO_2)—NAAQS Implementation." Washington, DC. Available online at: http://www.epa.gov/ttn/naaqs/so2/index.html

admissions, emergency room visits, and asthma attacks;[11] particulate matter inhalations can also significantly reduce development of lung function in children.[12] Components of particulate matter can include substances such as lead (Pb), sulfates (SO_4), and nitrates (NO_x), which can cause lung damage directly and can be absorbed into the blood stream and cause damage elsewhere in the body. Moreover, these substances can transport absorbed gases, such as chlorides or ammonium, into the lungs and cause injury. PM_{10} tends to collect in the upper portion of the respiratory system, whereas $PM_{2.5}$ can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle and produce haze in the atmosphere that reduces regional visibility.

2.1.7 Lead

Lead (Pb) in the atmosphere occurs as PM. Main sources of Pb emissions include leaded gasoline, battery manufacture, paint, ink, ceramics, ammunition, and secondary Pb smelters. Prior to 1978, mobile emissions were the primary source of atmospheric Pb. After the phase-out of leaded gasoline between 1978 and 1987, secondary Pb smelters, battery recycling, and manufacturing facilities became Pb emission sources of greater concern. Prolonged exposure to atmospheric Pb poses a serious threat to human health, effects of which include gastrointestinal disturbances, anemia, kidney disease, and, in severe cases, neuromuscular and neurological dysfunction. Infants and young children are particularly sensitive even to very low levels of Pb, and such exposure could result in decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth.

2.1.8 Sulfates

Sulfates (SO_4^{-2}) are particulate products of combustion of sulfur-containing fossil fuels. When SO or SO_2 are exposed to oxygen they precipitate out into sulfates (SO_3 or SO_4). Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (that is, gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO_2) during the combustion process and is subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place relatively rapidly and completely in urban areas of California due to regional meteorological features. CARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in respiratory function, aggravation of asthmatic symptoms, and an increased risk of cardiopulmonary disease. Sulfates are particularly effective in degrading visibility, and, because they are usually acidic, can harm ecosystems and damage materials and property.[13]

2.1.9 Hydrogen Sulfide

Hydrogen sulfide (H_2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Exposure to low concentrations of H_2S may irritate the eyes, nose, and throat. It may also cause difficulty in breathing for some

[11] California Air Resources Board. November 2007. Recent Research Findings: Health Effects of Particulate Matter and Ozone Air Pollution, November 2007. Available online at: http://www.arb.ca.gov/research/health/fs/pm_ozone-fs.pdf

[12] California Air Resources Board. November 2007. Recent Research Findings: Health Effects of Particulate Matter and Ozone Air Pollution, November 2007. Available online at: http://www.arb.ca.gov/research/health/fs/pm_ozone-fs.pdf

[13] California Air Resources Board. Updated 24 November 2009. "History of Sulfates Air Quality Standard." Web site. Available online at: http://www.arb.ca.gov/research/aaqs/caaqs/sulf-1/sulf-1.htm

asthmatics. Exposure to higher concentrations (above 100 ppm) of H_2S can cause olfactory fatigue, respiratory paralysis, and death. Brief exposures to high concentrations of H_2S (greater than 500 ppm) can cause a loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. However, in many individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory, and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of H_2S (0.00011 to 0.00033 ppm). Deaths due to inhaling large amounts of H_2S have been reported in a variety of different work settings, including sewers, animal processing plants, waste dumps, sludge plants, oil and gas well drilling sites, and tanks and cesspools.

2.1.10 Visibility-reducing Particles

This standard is a measure of visibility. Visibility is often characterized by visual range (VR). VR is the maximum distance at which a person can barely perceive a dark object. The ability to perceive an object is determined by the difference in contrast between the object and the background. A two-percent contrast is considered barely perceptible, but typically at least a five-percent change in contrast is needed. The less water vapor, sea salt particulate, and pollutants in the air, the greater the VR. VRs of up to about 150 miles (240 kilometers) can occur in clean desert areas where there is very low relative humidity. In coastal regions, the occurrence of sea salt particulate and water vapor can significantly reduce the maximum VR that could occur. The CARB does not yet have a measurement method that is accurate or precise enough to designate areas in the state as being in attainment or nonattainment. The entire state is unclassified.

2.1.11 Vinyl Chloride

Vinyl chloride monomer is a sweet smelling, colorless gas at ambient temperature. Landfills, publicly owned treatment works, and polyvinyl chloride (PVC) production are the major identified sources of vinyl chloride emissions in California. PVC can be fabricated into several products, such as pipes, pipefittings, and plastics. In humans, epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of liver angiosarcoma, which is a rare cancer, and have suggested a relationship between exposure and cancers of the lung and brain. There are currently no adopted ambient air standards for vinyl chloride.

Acute exposure of humans to high levels of vinyl chloride via inhalation in humans has resulted in effects on the central nervous system, such as dizziness, drowsiness, headaches, and giddiness. Vinyl chloride is reported to be slightly irritating to the eyes and respiratory tract in humans. Acute exposure to extremely high levels of vinyl chloride has caused loss of consciousness, irritation to the lungs and kidneys, and inhibition of blood clotting in humans and cardiac arrhythmias in animals. Tests involving acute exposure of mice to vinyl chloride have shown a high acute toxicity from inhalation exposure to the substance. Long-term exposure to vinyl chloride concentrations has been linked with chronic health effects:[14,15]

- Liver damage may result in humans from chronic exposure to vinyl chloride, through both inhalation and oral exposure.

[14] Agency for Toxic Substances and Disease Registry. Updated 2006. "Toxicological Profile for Vinyl Chloride."

[15] U.S. Environmental Protection Agency. Updated 6 November 2007. Technology Transfer Network Air Toxics Web Site: "Vinyl Chloride." Available online at: http://www.epa.gov/ttn/atw/hlthef/vinylchl.html

- A small percentage of individuals occupationally exposed to high levels of vinyl chloride in air have developed a set of symptoms termed *vinyl chloride disease*, which is characterized by Raynaud's phenomenon (fingers blanch and numbness and discomfort are experienced upon exposure to the cold), changes in the bones at the end of the fingers, joint and muscle pain, and scleroderma-like skin changes (thickening of the skin, decreased elasticity, and slight edema).

- Central nervous system effects (including dizziness, drowsiness, fatigue, headache, visual and/or hearing disturbances, memory loss, and sleep disturbances), as well as peripheral nervous system symptoms (peripheral neuropathy, tingling, numbness, weakness, and pain in fingers) have also been reported in workers exposed to vinyl chloride.

Several reproductive/developmental health effects from vinyl chloride exposure have been identified:[16,17]

- Several case reports suggest that male sexual performance may be affected by vinyl chloride. However, these studies are limited by lack of quantitative exposure information and possible co-occurring exposure to other chemicals.

- Several epidemiological studies have reported an association between vinyl chloride exposure in pregnant women and an increased incidence of birth defects, while other studies have not reported similar findings.

- Epidemiological studies have suggested an association between men occupationally exposed to vinyl chloride and miscarriages in their wives' pregnancies, although other studies have not supported these findings.

- Long-term exposure to vinyl chloride has also been identified as a cancer risk:

  - Inhaled vinyl chloride has been shown to increase the risk of a rare form of liver cancer (angiosarcoma of the liver) in humans.

  - Animal studies have shown that vinyl chloride, via inhalation, increases the incidence of angiosarcoma of the liver and cancer of the liver.

2.1.12 Carbon Dioxide

Carbon Dioxide (CO_2) is a colorless, odorless, and nonflammable gas that is the most abundant GHG in the Earth's atmosphere after water vapor. CO_2 enters the atmosphere through natural processes, such as respiration and forest fires, and through human activities such as the burning of fossil fuels (oils, natural gas, and coal) and solid waste, deforestation, and industrial processes. CO_2 absorbs terrestrial infrared radiation that would otherwise escape to space and, therefore, plays an important role in atmospheric warming. CO_2 has an atmospheric lifetime of up to 200 years and, therefore, is a more important GHG than water vapor, which has an atmospheric residence time of

[16] Agency for Toxic Substances and Disease Registry. Updated 2006. "Toxicological Profile for Vinyl Chloride."

[17] U.S. Environmental Protection Agency. Updated 6 November 2007. Technology Transfer Network Air Toxics Web Site: "Vinyl Chloride." Available online at: http://www.epa.gov/ttn/atw/hlthef/vinylchl.html

only a few days. CO_2 provides the reference point for the global warming potential (GWP) of other gases; thus, the GWP of CO_2 is equal to one. Global warming potential (GWP) is a relative measure of how much heat a greenhouse gas traps in the atmosphere.

2.1.13 Methane

Methane (CH_4) is a principal component of natural gas and consists of a single carbon atom bonded to four hydrogen atoms. It is formed and released to the atmosphere by biological processes from livestock and other agricultural practices and by the decay of organic waste in anaerobic environments such as municipal solid waste landfills. CH_4 is also emitted during the production and transport of coal, natural gas, and oil. CH_4 is about 21 times more powerful at warming the atmosphere than CO_2 (a GWP of 21).

The chemical lifetime of CH_4 in the atmosphere is approximately 12 years. The relatively short atmospheric lifetime of CH_4, coupled with its potency as a GHG, makes it a candidate for mitigating global warming over the short term. CH_4 can be removed from the atmosphere by a variety of processes, such as the oxidation reaction with hydroxyl radicals (OH), microbial uptake in soils, and reaction with chlorine (Cl) atoms in the marine boundary layer.

2.1.14 Nitrous Oxide

Nitrous Oxide (N_2O) is a transparent, colorless gas with a slightly sweet odor. N_2O has a long atmospheric lifetime (approximately 120 years) and heat-trapping effects about 310 times more powerful than CO_2 on a per molecule basis (a GWP of 310). N_2O is produced by both natural and human-related sources. The primary anthropogenic sources of N_2O are agricultural soil management like soil cultivation practices, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, and production of adipic and nitric acids. The natural process of producing N_2O ranges from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.

2.1.15 Fluorinated Gases

Hydrofluorocarbons (HFCs), perfluorocarbons, and sulfur hexafluoride are synthetic, powerful GHGs that are emitted from a variety of industrial processes, including aluminum production, semiconductor manufacturing, electric power transmission, magnesium production and processing, and the production of HCFC-22. Fluorinated gases are being used as substitutes for ozone-depleting chlorofluorocarbons (CFCs). Fluorinated gases are typically emitted in small quantities; however, they have high GWPs of between 140 and 23,900.[18]

2.1.16 Toxic Air Contaminants

Toxic Air Contaminants (TACs) are airborne pollutants that potentially pose a hazard to human health or may be expected to result in an increased rate of mortality or serious illness. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to brain and nervous system, and respiratory disorders. In addition, effects from TACs may be both chronic and acute on human health. Acute health effects are attributable to sudden exposure to high quantities of air toxics. These effects include nausea, skin irritation, respiratory illness, and, in some cases,

[18] California Climate Action Registry. January 2009. California Climate Action Registry General Reporting Protocol, Version 3.1. Los Angeles, CA.

death. Chronic health effects can result from low-dose, long-term exposure from routine releases of air toxics. The effect of major concern for this type of exposure is cancer, which requires a period of 10–30 years after exposure to develop.[19]

Hazardous air pollutants is a term used by the federal CAA that includes a variety of pollutants generated or emitted by industrial production activities. Called TACs under the CAA, 10 pollutants have been identified in the Toxic Air Contaminant Identification List through ambient air quality data as posing the most substantial health risk in California.[20] In 1998, California identified diesel engine PM (diesel PM or soot) as a TAC based on its potential to cause cancer, premature death, and other health problems.[21] Sources for diesel PM include exhaust from vehicles, diesel engines, and diesel-powered portable equipment. According to the CARB, diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the federal Hazardous Air Pollutants programs. California has adopted a comprehensive diesel risk reduction program. The U.S. EPA has adopted low-sulfur diesel fuel standards that will reduce diesel particulate matter substantially. These programs went into effect in June 2006.

In 1991, the District Board made a policy decision to make the State Air Toxics "Hot Spots" Information and Assessment Act (Act; AB 2588, 1987),[22] which is a state law requiring sources of toxics to do plans, inventories, source tests, and reports, a low priority for staff enforcement.[23]

TACs do not have ambient air quality standards since no safe levels of TACs can be determined. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Act apply to facilities that use, produce, or emit toxic chemicals. Facilities that are subject to the toxic emission inventory requirements of the Act must prepare and submit toxic emission inventory plans and reports and periodically update those reports.

2.1.16.1 Health Effects and Risks of Toxic Air Contaminants

Acetaldehyde. Acetaldehyde is classified as a federal hazardous air pollutant and as a California TAC. Acetaldehyde is a carcinogen that also causes chronic non-cancer toxicity in the respiratory system. Symptoms of chronic intoxication of acetaldehyde in humans resemble those of alcoholism.

The primary acute effect of inhalation exposure to acetaldehyde is irritation of the eyes, skin, and respiratory tract in humans. At higher exposure levels, erythema, coughing, pulmonary edema, and necrosis may also occur. Acute inhalation of acetaldehyde resulted in a depressed respiratory rate

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[19] California Air Resources Board. Updated 30 March 2012. Air Quality Analysis Guidance Handbook. Sacramento, CA. Available online at: http://www.aqmd.gov/ceqa/hdbk.html

[20] California Air Resources Board. 18 July 2011. Toxic Air Contaminant Identification List. Sacramento, CA. Available online at: http://www.arb.ca.gov/toxics/id/taclist.htm

[21] California Air Resources Board. 25 January 2010. Diesel Programs and Activities. Sacramento, CA. Available online at: http://www.arb.ca.gov/diesel/diesel.htm

[22] California Air Resources Board. 25 April 2011. AB 2588 Air Toxics "Hot Spots" Program. Sacramento, CA. Available online at: http://www.arb.ca.gov/ab2588/ab2588.htm

[23] Great Basin Unified Air Pollution District. Accessed 4 January 2012. Major Past Policy Decisions. Bishop, CA. Available online at: http://www.gbuapcd.org/background.htm

and elevated blood pressure in experimental animals. Tests involving acute exposure of rats, rabbits, and hamsters have demonstrated acetaldehyde to have low acute toxicity from inhalation and moderate acute toxicity from oral or dermal exposure.[24]

Benzene. Benzene is highly carcinogenic and occurs throughout California. Benzene also has non-cancer–related health effects. Brief inhalation exposure to high concentrations can cause central nervous system depression. Acute effects include central nervous system symptoms of nausea, tremors, drowsiness, dizziness, headache, intoxication, and unconsciousness.[25]

Neurological symptoms of inhalation exposure to benzene include drowsiness, dizziness, headaches, and unconsciousness in humans. Ingestion of large amounts of benzene may result in vomiting, dizziness, and convulsions in humans. Exposure to benzene in liquid and vapor form may irritate the skin, eyes, and upper respiratory tract in humans. Redness and blisters may result from dermal exposure to benzene.

Chronic inhalation of certain levels of benzene causes blood disorders in humans; specifically, benzene affects bone marrow (the tissues that produce blood cells). Aplastic anemia, excessive bleeding, and damage to the immune system (by changes in blood levels of antibodies and loss of white blood cells) may develop. Increased incidence of leukemia (cancer of the tissues that form white blood cells) has been observed in humans who have been occupationally exposed to benzene.[26]

1,3-Butadiene. 1,3-butadiene has been identified as a carcinogen in California. At very high levels, butadiene vapors cause neurological effects, such as blurred vision, fatigue, headache, and vertigo. Dermal exposure of humans to 1,3-butadiene causes a sensation of cold, followed by a burning sensation, which may lead to frostbite.[27]

One epidemiological study reported that chronic (long-term) exposure to 1,3-butadiene by inhalation resulted in an increase in cardiovascular diseases, such as rheumatic and arteriosclerotic heart diseases, while other human studies have reported effects on the blood. A large epidemiological study of synthetic rubber industry workers demonstrated a consistent association between 1,3-butadiene exposure and occurrence of leukemia. Several epidemiological studies of workers in styrenebutadiene rubber factories have shown an increased incidence of respiratory, bladder, stomach, and lymphato-hematopoietic cancers. However, these studies are not sufficient to determine a causal association between 1,3-butadiene exposure and cancer, due to possible exposure to other chemicals and other confounding factors.[28]

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[24] U.S. Environmental Protection Agency. Revised January 2000. Technology Transfer Network Air Toxics Web Site: "Acetaldehyde." Available online at: http://www.epa.gov/ttn/atw/hlthef/acetalde.html

[25] U.S. Environmental Protection Agency. Revised January 2000. Technology Transfer Network Air Toxics Web Site: "Benzene." Available online at: http://www.epa.gov/ttn/atw/hlthef/benzene.html

[26] U.S. Environmental Protection Agency. Revised January 2000. Technology Transfer Network Air Toxics Web Site: "Benzene." Available online at: http://www.epa.gov/ttn/atw/hlthef/benzene.html

[27] U.S. Environmental Protection Agency. Revised March 2009. Technology Transfer Network Air Toxics Web Site: "1,3-butadiene." Available online at: http://www.epa.gov/ttn/atw/hlthef/butadien.html

[28] U.S. Environmental Protection Agency. Revised March 2009. Technology Transfer Network Air Toxics Web Site: "1,3-butadiene." Available online at: http://www.epa.gov/ttn/atw/hlthef/butadien.html

Carbon Tetrachloride. Carbon tetrachloride is a central nervous system depressant, which the U.S. EPA has classified as a Group B2, a probable human carcinogen.[29]

Acute inhalation and oral exposures to high levels of carbon tetrachloride have been observed primarily to damage the liver (swollen, tender liver, changes in enzyme levels, and jaundice) and kidneys (nephritis, nephrosis, and proteinurea) of humans. Depression of the central nervous system has also been reported. Symptoms of acute exposure in humans include headache, weakness, lethargy, nausea, and vomiting. Delayed pulmonary edema (fluid in lungs) has been observed in humans who have been exposed to high levels of carbon tetrachloride by inhalation and ingestion, but this is believed to be due to injury to the kidney rather than direct action of carbon tetrachloride on the lung. Chronic inhalation or oral exposure to carbon tetrachloride produces liver and kidney damage in humans and animals.[30]

Chromium, Hexavalent. In California, hexavalent chromium has been identified as a carcinogen. Epidemiological evidence suggests that exposure to inhaled hexavalent chromium may result in lung cancer.

The respiratory tract is the major target organ for chromium (VI) following inhalation exposure in humans. Other effects noted from acute inhalation exposure to very high concentrations of chromium (VI) include gastrointestinal and neurological effects, while dermal exposure causes skin burns in humans. Chronic inhalation exposure to chromium (VI) in humans results in effects on the respiratory tract, with perforations and ulcerations of the septum, bronchitis, decreased pulmonary function, pneumonia, asthma, and nasal itching and soreness reported. Chronic human exposure to high levels of chromium (VI) by inhalation or oral exposure may produce effects on the liver, kidney, gastrointestinal and immune systems, and possibly the blood.[31]

Para-dichlorobenzene. In California, para-dichlorobenzene has been identified as a carcinogen. Acute exposure to 1,4-dichlorobenzene via inhalation in humans results in irritation to the eyes, skin, and throat. In addition, long-term inhalation exposure may affect the liver, skin, and central nervous system in humans (for example, cerebellar ataxia, dysarthria, weakness in limbs, and hyporeflexia).[32]

Formaldehyde. The major toxic effects caused by acute formaldehyde exposure via inhalation are eye, nose, and throat irritation and effects on the nasal cavity. Other effects seen from exposure to high levels of formaldehyde in humans are coughing, wheezing, chest pains, and bronchitis. Chronic exposure to formaldehyde by inhalation in humans has been associated with respiratory symptoms and irritation of the eye, nose, and throat. Animal studies have reported effects on the nasal respiratory epithelium and lesions in the respiratory system from chronic inhalation exposure to formaldehyde.

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[29] U.S. Environmental Protection Agency. Revised January 2000. Technology Transfer Network Air Toxics Web Site: "Carbon Tetrachloride." Available online at: http://www.epa.gov/ttn/atw/hlthef/carbonte.html

[30] United States Environmental Protection Agency. Revised January 2000. Technology Transfer Network Air Toxics Web Site: Carbon Tetrachloride. Available online at: http://www.epa.gov/ttn/atw/hlthef/carbonte.html

[31] United States Environmental Protection Agency. Revised January 2000. Technology Transfer Network Air Toxics Web Site: Chromium Compounds. Available online at: http://www.epa.gov/ttn/atw/hlthef/chromium.html#ref1

[32] United States Environmental Protection Agency. Revised January 2000. Technology Transfer Network Air Toxics Web Site: 1,4-Dichlorobenzene (para-Dichlorobenzene). Available online at: http://www.epa.gov/ttn/atw/hlthef/dich-ben.html

Occupational studies have noted statistically significant associations between exposure to formaldehyde and increased incidence of lung and nasopharyngeal cancer. This evidence is considered to be "limited," rather than "sufficient," due to possible exposure to other agents that may have contributed to the excess cancers. U.S. EPA considers formaldehyde to be a probable human carcinogen and has ranked it in the U.S. EPA's Group B1.[33] In California, formaldehyde has been identified as a carcinogen.

Methylene Chloride. Case studies of methylene chloride poisoning during paint stripping operations have demonstrated that inhalation exposure to extremely high levels of methylene chloride can be fatal to humans. Acute inhalation exposure to high levels of methylene chloride in humans has affected the central nervous system including decreased visual, auditory, and psychomotor functions, but these effects are reversible once exposure ceases. Methylene chloride also irritates the nose and throat at high concentrations. The major effects from chronic inhalation exposure to methylene chloride in humans are effects on the central nervous system, such as headaches, dizziness, nausea, and memory loss. In addition, chronic exposure can lead to bone marrow, hepatic, and renal toxicity. U.S. EPA considers methylene chloride to be a probable human carcinogen and has ranked it in U.S. EPA's Group B2.[34] The State of California considers methylene chloride to be a carcinogen.

Perchloroethylene. In California, perchloroethylene has been identified as a carcinogen. Perchloroethylene vapors are irritating to the eyes and respiratory tract. Following chronic exposure, workers have shown signs of liver toxicity, as well as kidney dysfunction, and neurological disorders.[35]

Diesel Particulate Matter. Diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by the California Office of Environmental Health Hazard Assessment (OEHHA). CARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing TACs stems from diesel exhaust particles.

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely than workers who were not exposed to diesel emissions to develop lung cancer. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from OEHHA's assessment, CARB estimates that diesel-particle levels measured in California's air in 2000 could cause 540 "excess" cancers (beyond what would occur if there were no diesel particles in the air) in a population of 1 million people over a 70-year lifetime.

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[33] U.S. Environmental Protection Agency. Revised January 2000. Technology Transfer Network Air Toxics Web Site: "Formaldehyde." Available online at: http://www.epa.gov/ttn/atw/hlthef/formalde.html

[34] U.S. Environmental Protection Agency. Revised January 2000. Technology Transfer Network Air Toxics Web Site: "Methylene Chloride (Dichloromethane)." Available online at: http://www.epa.gov/ttn/atw/hlthef/methylen.html

[35] U.S. Environmental Protection Agency. Revised January 2000. Technology Transfer Network Air Toxics Web Site: "Tetrachloroethylene (Perchloroethylene)." Available online at: httphttp://www.epa.gov/ttn/atw/hlthef/tet-ethy.html

Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated similar cancer risks from diesel exhaust as those calculated by OEHHA and CARB.[36]

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat and lungs; and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Diesel engines are a major source of fine-particle pollution. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among people suffering from respiratory problems. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can reduce lung function in children. In California, diesel exhaust particles have been identified as carcinogens.

Arsenic. Arsenic, a naturally occurring element, is found throughout the environment; for most people, food is the major source of exposure. Acute (short-term) high-level inhalation exposure to arsenic dust or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain); central and peripheral nervous system disorders have occurred in workers acutely exposed to inorganic arsenic. Chronic (long-term) inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes. Chronic oral exposure has resulted in gastrointestinal effects, anemia, peripheral neuropathy, skin lesions, hyperpigmentation, and liver or kidney damage in humans. Inorganic arsenic exposure in humans, by the inhalation route, has been shown to be strongly associated with lung cancer, while ingestion of inorganic arsenic in humans has been linked to a form of skin cancer and also to bladder, liver, and lung cancer.[37]

Cadmium. Cadmium is a metal found in natural deposits such as ores containing other elements. Some people who drink water containing cadmium well in excess of the maximum contaminant level (MCL) for many years could experience kidney damage.

[36] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, and the American Lung Association. Accessed on: 2 February 2010. "Health Effects of Diesel Exhaust." Web site. Available online at: http://www.oehha.org/public_info/facts/dieselfacts.html

[37] U.S. Environmental Protection Agency. Revised December 2012. Technology Transfer Network Air Toxics Web Site: "Arsenic Compounds." Washington, DC. Available online at: http://www.epa.gov/ttn/atw/hlthef/arsenic.html

SECTION 3.0
REGULATORY FRAMEWORK

This regulatory framework identifies the federal and state laws that govern the regulation of air quality and must be considered by the project proponent regarding decisions on projects that involve construction, operation, or maintenance activities that would result in air emissions.

3.1 FEDERAL

3.1.1 Federal Clean Air Act

The CAA was enacted in 1970 to foster growth in the economy and industry while improving human health and the environment. The CAA is the comprehensive federal law that regulates air emissions from stationary and mobile sources. Among other things, the CAA authorizes the United States Environmental Protection Agency (U.S. EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. The CAA requires the U.S. EPA to routinely review and update the NAAQS in accordance with the latest available scientific evidence. For example, the one-hour standard for O_3 was revoked in 2005 in favor of a new eight-hour standard that is intended to better protect public health.

National Ambient Air Quality Standards

The NAAQS were established by the U.S. EPA per the requirements of the CAA (Table 3.1.1-1, *National Ambient Air Quality Standards*). The NAAQS are used to identify thresholds for specific pollutants. Two types of air quality standards were established by the CAA: 1) primary standards; and 2) secondary standards. Primary standards define limits for the intention of protecting public health, which includes sensitive populations such as asthmatics, children and elderly. Secondary Standards define limits to protect public welfare to include protection against decreased visibility, damage to animals, crops, vegetation and buildings.

TABLE 3.1.1-1
NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant		Primary/Secondary	Averaging Time	Level
Carbon Monoxide		Primary	8-hour	9 ppm
			1-hour	35 ppm
Lead		Primary and secondary	Rolling 3 month average	0.15 $\mu g/m^3$
Nitrogen Dioxide		Primary	1-hour	100 ppb
		Primary and Secondary	Annual	53 ppb
Ozone		Primary and Secondary	8-hour	0.075 ppm
Particle Matter	$PM_{2.5}$	Primary	Annual	12 $\mu g/m^3$
		Secondary	Annual	15 $\mu g/m^3$
		Primary and Secondary	24-hour	35 $\mu g/m^3$
	PM_{10}	Primary and Secondary	24-hour	150 $\mu g/m^3$
Sulfur Dioxide		Primary	1-hour	75 ppb
		Secondary	3-hour	0.5 ppm

NOTE: As of October 2011.
SOURCE: U.S. Environmental Protection Agency. December 2012. National Ambient Air Quality Standards (NAAQS).

State Implementation Plans

Federal clean air laws require areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop plans, known as State Implementation Plans (SIPs). SIPs are comprehensive plans that describe how an area will attain NAAQS. The 1990 amendments to the federal CAA set deadlines for attainment based on the severity of an area's air pollution problem.

SIPs are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. Many of California's SIPs rely on the same core set of control strategies, including emissions standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. State law makes CARB the lead agency for all purposes related to the SIP. CARB forwards SIP revisions to the U.S. EPA for approval and publication in the *Federal Register*. The Code of Federal Regulations Title 40, Chapter I, Part 52, Subpart F, Section 52.220, lists all of the items included in the California SIP.

Conformity Rule

Section 176(c) of the CAA states that a federal agency cannot issue a permit for or support an activity unless the agency determines it would conform to the most recent U.S. EPA-approved SIP. This means that projects using federal funds or requiring federal approval must not (1) cause or contribute to any new violation of a NAAQS, (2) increase the frequency or severity of any existing violation, or (3) delay the timely attainment of any standard, interim emission reduction, or other milestone.

Based on the present NAAQS attainment status of the Southern California Air Basin (SCAB), a federal action would conform to the State Implementation Plan if its annual emissions remain below 100 tons of CO and $PM_{2.5}$, 70 tons of PM_{10}, and 10 tons of NO_x or VOCs. These de minimis thresholds apply to the proposed construction and operation activities pertaining to the federal action. If the proposed action exceeds one or more of the de minimis thresholds, a more rigorous conformity determination is the next step in the conformity evaluation process. SCAQMD Rule 1901 adopts the guidelines of the General Conformity Rule.

3.1.2 Highway Diesel Rule (the "2007 Highway Rule")

To reduce emissions from off-road diesel equipment, the U.S. EPA established a series of increasingly strict emission standards for new engines. Locomotives and marine vessels are exempt from this rule. Manufacturers of off-road diesel engines would be required to produce engines with certain emission standards under the following compliance schedule:

- Tier 1 standards were phased in from 1996 to 2000 (year of manufacture), depending on the engine horsepower category
- Tier 2 standards were phased in from 2001 to 2006
- Tier 3 standards were phased in from 2006 to 2008
- Tier 4 standards, which likely will require add-on emissions control equipment to attain them, will be phased in from 2008 to 2015

In 2000, the U.S. EPA moved forward with its regulation to make heavy-duty trucks and buses run cleaner. The Highway Diesel Rule (the "2007 Highway Rule") was finalized in January 2001. Beginning with the 2007 model year, the harmful pollution from heavy-duty highway vehicles will be reduced by more than 90 percent. The U.S. EPA will require a 97 percent reduction in the sulfur content of highway diesel fuel from its current level of 500 parts per million (low sulfur diesel, or LSD) to 15 parts per million (ultra-low sulfur diesel, or ULSD).

3.1.3 Corporate Average Fuel Economy Standards

On April 1, 2010, the U.S. EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a new national program to reduce greenhouse gas emissions and improve fuel economy for new cars and trucks sold in the U.S. The U.S. EPA and NHTSA finalized a joint rule that established a national program consisting of new standards for model years 2012 through 2016 light-duty vehicles that would reduce greenhouse gas emissions and improve fuel economy. The U.S. EPA finalized the national greenhouse gas emissions standards under the CAA, and the NHTSA finalized the Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act.

Furthermore, on August 9, 2011, the U.S. EPA and the NHTSA announced a new national program to reduce greenhouse gas emissions and improve fuel economy for new medium- and heavy-duty engines and vehicles sold in the U.S. The U.S. EPA and NHTSA finalized a joint rule that established a national program consisting of new standards for engines with model years 2014 through 2018. The agencies estimate that the combined standards will reduce CO_2 emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of vehicles built for the 2014 to 2018 model years.

3.1.4 Memorandum for Heads of Federal Departments and Agencies: Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions

In February 2010, the Council on Environmental Quality (CEQ) released a guidance memorandum on the ways in which federal agencies can improve their evaluation and disclosure of greenhouse gas emissions under the National Environmental Policy Act (NEPA) for proposed federal actions. The guidance identified a reference point of 25,000 metric tons per year (mty) for direct CO_{2e} greenhouse gas emissions as an indicator that further NEPA review may be warranted. This reference point, however, is not intended to be used as a threshold for determining a significant impact or effect on the environment due to greenhouse gas emissions. The guidance also does not propose a reference point for indirect greenhouse gas emissions.

3.2 STATE

3.2.1 California Clean Air Act

The California Clean Air Act of 1988 requires all air pollution control districts in the state to aim to achieve and maintain State ambient air quality standards for O_3, CO, and NO_2 by the earliest practicable date and to develop plans and regulations specifying how the districts will meet this goal. There are no planning requirements for the state PM_{10} standard. The CARB, which became part of the California EPA in 1991, is responsible for meeting State requirements of the federal Clean Air Act, administrating the California Clean Air Act, and establishing the California Ambient Air Quality Standards (CAAQS). The California Clean Air Act, amended in 1992, requires all air districts in the state to endeavor to achieve and maintain the CAAQS. The CAAQS are generally stricter than national standards for the same pollutants, but there is no penalty for non-attainment. California has also established State standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles, for which there are no national standards.

The California Air Resources Board (CARB), a department of the California Environmental Protection Agency (CalEPA), oversees air quality planning and control throughout California. It is primarily responsible for ensuring implementation of the 1989 amendments to the California Clean Air Act, responding to the federal CAA requirements to establish state ambient air quality standards, and for regulating emissions from motor vehicles and consumer products with the state. The CARB has established emissions standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. It also sets passenger vehicle fuel specifications to further reduce vehicular emissions.[1]

California Ambient Air Quality Standards

The federal CAA permits states to adopt additional or more protective air quality standards if needed. California has set standards for certain pollutants, such as particulate matter and ozone, which are more protective of public health than respective federal standards (Table 3.2.1-1, *California Ambient Air Quality Standards*). California has also set standards for some pollutants that are not addressed by federal standards.

[1] South Coast Air Quality Management District. Air Quality Guidance Handbook. Diamond Bar, CA. November 2001.

TABLE 3.2.1-1
CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant		Averaging Time	Level
Carbon Monoxide		8-hour	9 ppm
		1-hour	20 ppm
Lead		30 day average	1.5 μg/m^3
Nitrogen Dioxide		1-hour	0.18 ppm
		Annual	0.03 ppm
Ozone		8-hour	0.07 ppm
		1-hour	0.09 ppm
Particle Matter	$PM_{2.5}$	Annual	12 μg/m^3
	PM_{10}	24-hour	50 μg/m^3
		Annual	20 μg/m^3
Sulfur Dioxide		1-hour	0.25 ppm
		24-hour	0.04 ppm
Sulfates		24-hour	25 μg/m^3
Hydrogen Sulfide		1-hour	0.03 ppm
Vinyl Chloride		24-hour	0.01 ppm

NOTE: As of June, 2012
SOURCE: California Air Resources Board. November 2009. *California Ambient Air Quality Standards*.

3.2.2 Executive Order S-3-05

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. Recognizing that California is particularly vulnerable to the impacts of climate change, Executive Order S-3-05 establishes statewide climate change emission reduction targets to reduce $CO_{2equivalent}$ (CO_{2e}) to the 2000 level (473 million metric tons) by 2010, to the 1990 level (427 million metric tons of CO_{2e}) by 2020, and to 80 percent below the 1990 level (85 million metric tons of CO_{2e}) by 2050 (Table 3.2.2-1, *California Business-as-Usual GHG Emissions and Targets*).[2,3] The executive order directs the California EPA Secretary to coordinate and oversee efforts from multiple agencies (that is, Secretary of the Business, Transportation, and Housing Agency; Secretary of the Department of Food and Agriculture; Secretary of the Resources Agency; Chairperson of the Air Resources Board; Chairperson of the Energy Commission; and President of the Public Utilities Commission) to reduce GHG emissions to achieve the target levels. In addition, the California EPA Secretary is responsible for submitting biannual reports to the governor and State legislature that outline (1) progress made toward reaching the emission targets, (2) impacts of global warming on California's resources, and (3) measures and adaptation plans to mitigate these impacts. To further ensure accomplishment of the targets, the California EPA Secretary created a Climate Action Team

[2] California Governor. 1 June 2005. Executive Order S-3-05. Sacramento, CA.

[3] California Climate Action Team. 3 April 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. Sacramento, CA.

composed of representatives from the aforementioned agencies to implement global warming emission reduction programs and report on the progress made toward meeting the statewide GHG targets established in this executive order. In December 2005, the first report was released, which stated, "the climate change emission reduction targets [could] be met without adversely affecting the California economy," and "when all [the] strategies are implemented, those underway and those needed to meet the Governor's targets, the economy will benefit."[4]

TABLE 3.2.2-1
CALIFORNIA BUSINESS-AS-USUAL GHG EMISSIONS AND TARGETS

Emission Level	GHG Emissions (Million Metric Tons of $CO_{2Equivalent}$)				
	1990	2000	2010	2020	2050
Business-as-usual Emissions	427	473	532	596	762*
Target Emissions	—	—	473	427	85

NOTE: * Business-as-usual emissions reflect the projected emissions under a scenario without GHG control measures, where California would continue to emit GHGs at the same per capita rate. The CARB has not yet projected 2050 emissions under a business-as-usual scenario. Therefore, 2050 business-as-usual emissions were calculated assuming a linear increase of emissions from 1990 to 2050.

3.2.3 Global Warming Solutions Act of 2006 (Assembly Bill 32)

Assembly Bill 32 (AB 32), also known as the Global Warming Solutions Act of 2006, is a California State Law that addresses climate change by establishing a comprehensive program to reduce greenhouse gas (GHG) emissions from all sources throughout the state. AB 32 requires that the California ARB develop regulations and market mechanisms to reduce California's GHG emissions to 1990 levels by 2020. To achieve this goal, AB 32 mandates that CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary sources, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved.

3.2.4 Clean Car Standards (Assembly Bill 1493)

AB 1493 (Pavley), enacted on July 22, 2002, required the California Air Resources Board (CARB) to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce climate change emissions from light duty passenger vehicle fleet by 18 percent in 2020 and 27 percent in 2030.

3.2.5 Toxic Air Contaminant Identification and Control Act of 1983 (Assembly Bill 1807)

In 1983, AB 1807 created the California Air Toxics Program to establish a two-step process of risk identification and risk management to address potential health effects associated with public exposure to toxic substances in the air. In the risk identification step, CARB and the Office of Environmental Health Hazard Assessment (OEHHA) determine if a substance should be formally identified, or "listed," as a toxic air contaminant (TAC) in California. Since inception of the

[4] California Climate Action Team. 3 April 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. Sacramento, CA.

program, a number of such substances have been identified and listed. In 1993, the California Legislature amended the program to identify the 189 federal hazardous air pollutants (HAPs) as TACs. In 2014, OEHHA released an air toxics hot spots draft guidance manual that made adjustments based on new science about both increased childhood exposure to and sensitivity to air toxics.

In the risk management step, CARB reviews emission sources of an identified TAC to determine whether regulatory action is needed to reduce the risk. Based on results of that review, CARB has promulgated a number of airborne toxic control measures (ATCMs), both for mobile and stationary sources. In 2004, CARB adopted an ATCM to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel PM and other TACs. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than five minutes at any given time.

3.2.6 Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Assembly Bill 2588)

The California Air Toxics Program is supplemented by the AB 2588 Air Toxics "Hot Spots" program, which was established by the California Legislature in 1987. Under this program, facilities are required to report their air toxics emissions, assess health risks, and notify nearby residents and workers of significant risks when present. In 1992, the AB 2588 program was amended by Senate Bill (SB) 1731 to require facilities that pose a significant health risk to the community to reduce their risk through implementation of a risk management plan.

3.2.7 Sustainable Communities Protection Act of 2008 (Senate Bill 375)

SB 375, also known as the Sustainable Communities Protection Act of 2008, outlines strategies for achieving the goals set forth in AB 32. Pursuant to SB 375, SCAG developed a Regional Transportation Plan (RTP) as part of its Sustainable Communities Strategy. As a way to significantly reduce greenhouse gas emissions in the future, the RTP focuses the majority of new housing and job growth in high-quality transit areas and other opportunity areas in existing main streets, downtowns, and commercial corridors, resulting in an improved jobs/housing balance and more opportunity for transit-oriented development.

3.2.8 Heavy-Duty Diesel Truck Idling Regulation

Beginning in 2008, CARB implemented the Heavy-Duty Diesel Truck Idling Regulation, requiring that heavy-duty trucks be equipped with a non-programmable engine system that shuts down the engine after five minutes to prevent long idling times or, as an alternative, meet a stringent NO_x idling emissions standard. Additionally, CARB has established diesel fuel regulations that limit sulfur emissions to 15 ppm for diesel sold in California for use in on-road and off-road motor vehicles.

3.2.9 Statewide Portable Equipment Registration Program

The CARB Statewide Portable Equipment Registration Program (PERP) establishes a uniform program to regulate portable engines and portable engine-driven equipment units. Once registered in this program, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts. The portable equipment, however, cannot reside at the same location for more than 12 months. Some construction-related equipment may be registered under PERP. Equipment would not reside at the same location for more than 12 months.

3.2.10 On-Road Heavy-Duty Diesel Vehicle Regulation

On December 12, 2008, CARB approved the on-road heavy-duty diesel vehicle (in use) regulation to significantly reduce PM and NO_x emissions from existing diesel vehicles operating in California. The regulation applies to nearly all diesel-fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds that are privately or federally owned, and for privately and publicly owned school buses. Starting January 1, 2012, the regulation would phase in requirements for heavier trucks to reduce PM emissions with exhaust retrofit filters that capture pollutants before they are emitted to the air or by replacing vehicles with newer vehicles that are originally equipped with PM filters. Starting on January 1, 2015, lighter trucks with a GVWR of 14,001 to 26,000 pounds with engines that are 20 years or older would need to be replaced with newer trucks. Starting January 1, 2020, all remaining trucks and buses would need to be replaced so that they would all have 2010 model year engines or equivalent emissions by 2023. Heavier trucks and buses with a GVWR greater than 26,000 pounds would have two ways to comply. Fleets could comply with a compliance schedule by engine model year or use a phase-in option where engine replacement could be delayed by installing a PM filter on the existing engine.

3.2.11 Airborne Toxic Control Measure

Effective February 19, 2011, diesel-fueled portable engines with a rated brake horsepower of 50 or greater are subject to the CARB's Airborne Toxic Control Measure (ATCM). The ATCM imposes fuel and diesel particulate matter (DPM) emission requirements for in-use and new portable diesel engines. Diesel fleets are required to meet certain DPM standards by set compliance dates. By January 1, 2020, new emergency standby diesel engines will need to be certified to Tier 4 emission standards.

3.3 REGIONAL

3.3.1 AQMD Rule 403, Fugitive Dust

The SCAQMD and AVAQMD have adopted Rule 403, Fugitive Dust, which requires the implementation of best available fugitive dust control measures during construction and operational activities capable of generating fugitive dust emissions from on-site earth-moving activities, construction/demolition activities, and mobile equipment traveling on paved and unpaved roads.

3.3.2 Rule 1401, New Source Review of Toxic Air Contaminants and Rule 1402, Control of Toxic Air Contaminants from Existing Sources

The SCAQMD has adopted two rules for TACs to limit cancer and non-cancer health risks from facilities located within its jurisdiction. Rule 1401, *New Source Review of Toxic Air Contaminants*,

regulates new or modified facilities, and Rule 1402, *Control of Toxic Air Contaminants from Existing Sources*, regulates facilities that are already in operation. Rule 1402 incorporates requirements of the AB 2588 program, including implementation of risk reduction plans for significant risk facilities.

3.3.3 2012–2035 Southern California Association of Governments Regional Transportation Plan/Sustainable Communities Plan

The Southern California Association of Governments (SCAG) is a council of governments for the Counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. As a regional planning agency, SCAG serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG also serves as the regional clearinghouse for projects requiring environmental documentation under federal and State law. In this role, SCAG reviews projects to analyze their impacts on SCAG's regional planning efforts.

Although SCAG is not an air quality management agency, it is responsible for several air quality planning issues. Specifically, as the designated Metropolitan Planning Organization (MPO) for the Southern California region, it is responsible, pursuant to Section 176(c) of the 1990 amendments to the CAA, for providing current population, employment, travel, and congestion projections for regional air quality planning efforts. It is required to quantify and document the demographic and employment factors influencing expected transportation demand, including land use forecasts. Pursuant to California Health and Safety Code Section 40460(b), SCAG is also responsible for preparing and approving the portions of the Basin's air quality management plans relating to demographic projections and integrated regional land use, housing, employment, and transportation programs, measures, and strategies. SCAG's method of accomplishing these requirements is through the preparation of demographic projections published in its 2012 Regional Transportation Plan (RTP), which was used by the SCAQMD in the preparation of its 2012 Air Quality Management Plan (AQMP), discussed below.

3.3.4 County of Los Angeles General Plan

The proposed initiative subareas are located within unincorporated Los Angeles County and subject to the County of Los Angeles General Plan (General Plan). The unincorporated Los Angeles County area comprises 2,650 square miles and has over one million people. On March 24, 2015, the Los Angeles County Board of Supervisors voted to approve the 2035 General Plan Update. The Los Angeles County 2035 General Plan accommodates new housing and jobs within the unincorporated areas in anticipation of population growth in the County and the region. The General Plan Update effort includes goals, policies, implementation programs, and ordinances.[5]

The Air Quality Element summarizes the air quality issues and outlines the goals and policies in the General Plan that will improve air quality and reduce greenhouse gas emissions. Of the 12 policies outlined in the Air Quality Element, the following 10 policies are applicable to the proposed initiative:

[5] Los Angeles County Department of Regional Planning. *2035 General Plan*. Available at: http://planning.lacounty.gov/generalplan

Goal AQ 1: Protection from exposure to harmful air pollutants.

- Policy AQ 1.1: Minimize the health risks to people from industrial toxic or hazardous air pollutant emissions, with an emphasis on local hot spots, such as existing point sources affecting immediate sensitive receptors.

- Policy AQ 1.3: Reduce particulate inorganic and biological emissions from construction, grading, excavation, and demolition to the maximum extent feasible.

- Policy AQ 1.4: Work with local air quality management districts to publicize air quality warnings, and to track potential sources of airborne toxics from identified mobile and stationary sources.

Goal AQ 2: The reduction of air pollution and mobile source emissions through coordinated land use, transportation and air quality planning.

- Policy AQ 2.1: Encourage the application of design and other appropriate measures when siting sensitive uses, such as residences, schools, senior centers, daycare centers, medical facilities, or parks with active recreational facilities within proximity to major sources of air pollution, such as freeways.

- Policy AQ 2.2: Participate in, and effectively coordinate the development and implementation of community and regional air quality programs.

Goal AQ 3: Implementation of plans and programs to address the impacts of climate change.

- Policy AQ 3.1: Facilitate implementation and maintenance of the Community Climate Action Plan to ensure that the County reaches it climate change and greenhouse gas emission reduction goals.

- Policy AQ 3.2: Reduce energy consumption in County operations by 20 percent by 2015.

- Policy AQ 3.3: Reduce water consumption in County operations.

- Policy AQ 3.4: Participate in local, regional, and state programs to reduce greenhouse gas emissions.

- Policy AQ 3.5: Encourage maximum amounts of energy conservation in new development and municipal operations.

Community Climate Action Plan

Climate action plans include an inventory of greenhouse gas emissions and measures for reducing future emissions to achieve a specific reduction target. Los Angeles County released a Climate Change Action Plan (CCAP) on July 2014 to mitigate and avoid greenhouse gas emissions

associated with community activities in unincorporated Los Angeles County. The CCAP addresses emissions from building energy, land use and transportation, water consumption, and waste generation. The measures and actions outlined in the CCAP tie together the County's existing climate change initiatives and provide a blueprint for a more sustainable future. Ultimately, the CCAP and associated greenhouse gas reduction measures will be incorporated into the Air Quality Element of the Los Angeles County General Plan 2035.

The CCAP identifies emissions related to community activities, establishes a greenhouse gas reduction target consistent with AB 32, and provides a roadmap for successfully implementing greenhouse gas reduction measures selected by the County. Importantly, the CCAP recognizes the County's leadership and role in contributing to statewide greenhouse gas emissions reductions. Actions undertaken as part of the CCAP will also result in important community co-benefits including improved air quality, energy savings, and increased mobility, as well as will enhance the resiliency of the community in the face of changing climatic conditions.

SECTION 4.0
BASELINE CONDITIONS

4.1 BASELINE CONDITIONS

4.1.1 Regional Climate

Southern California Air Basin

The regional climate significantly influences the air quality in the Southern California Air Basin (SCAB). Temperature, wind, humidity, precipitation, and the amount of sunshine influence the quality of the air. In addition, the SCAB is frequently subjected to an inversion layer that traps air pollutants. Temperature has an important influence on basin wind flow, pollutant dispersion, vertical mixing, and photochemistry.

Annual average temperatures throughout the SCAB vary from the low to middle 60 degrees Fahrenheit (°F). However, due to decreased marine influence, the eastern portion of the SCAB shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the SCAB, with average minimum temperatures of 47°F in downtown Los Angeles and 36°F in San Bernardino. All portions of the SCAB have recorded maximum temperatures above 100°F.

Although the climate of the SCAB can be characterized as semiarid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of SCAB climate. Humidity restricts visibility in the SCAB, and the conversion of SO_2 to SO_4 is heightened in air with high relative humidity. The marine layer is an excellent environment for that conversion process, especially during the spring and summer months. The annual average relative humidity is 71 percent along the coast and 59 percent inland. Because the ocean effect is dominant, periods of heavy early morning fog are frequent, and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast.

More than 90 percent of the SCAB's rainfall occurs from November through April. Annual average rainfall varies from approximately nine inches in Riverside to 14 inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thundershowers near the coast and slightly heavier shower activity in the eastern portion of the region and near the mountains. Rainy days comprise 5 to 10 percent of all days in the SCAB with the frequency being higher near the coast. The influence of rainfall on the contaminant levels in the SCAB is minimal. Although some washout of pollution would be expected with winter rains, air masses that bring precipitation of consequence are very unstable and provide excellent dispersion that masks wash-out effects. Summer thunderstorm activity affects pollution only to a limited degree. If the inversion is not broken by a major weather system, high levels of contaminants can persist even in areas of light showers.

Mojave Desert Air Basin

The Mojave Desert Air Basin (MDAB) is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains which dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and

central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in Southern California by differential heating are channeled through the MDAB. The MDAB is separated from the Southern California coastal and central California valley regions by mountains (highest elevation approximately 10,000 feet), whose passes form the main channels for these air masses. The Antelope Valley is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevadas in the north by the Tehachapi Pass (3,800 feet). The Antelope Valley is bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,300 feet).

During the summer the MDAB is generally influenced by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. The MDAB averages between three and seven inches of precipitation per year (from 16 to 30 days with at least 0.01 inch of precipitation). The MDAB is classified as a dry-hot desert climate (BWh), with portions classified as dry-very hot desert (BWh), to indicate at least three months have maximum average temperatures over 100.4°F.

4.1.2 Temperature Inversion

The vertical dispersion of air pollutants in the SCAB and MDAB is frequently restricted by the presence of a persistent temperature inversion in the atmospheric layers near the earth's surface. Normally, the temperature of the atmosphere decreases with altitude. However, when the temperature of the atmosphere increases with altitude, the phenomenon is termed an inversion. An inversion condition can exist at the surface or at any height above the ground. The bottom of the inversion, known as the mixing height, is the height of the base of the inversion.

In general, inversions in the SCAB and MDAB are lower before sunrise than during the daylight hours. As the day progresses, the mixing height normally increases as the warming of the ground heats the surface air layer. As this heating continues, the temperature of the surface layer approaches the temperature of the base of the inversion layer. When these temperatures become equal, the inversion layer's lower edge begins to erode, and if enough warming occurs, the layer breaks up. The surface layers are gradually mixed upward, diluting the previously trapped pollutants. The breakup of inversion layers frequently occurs during mid to late afternoon on hot summer days. Winter inversions usually break up by midmorning.

4.1.3 Regional Air Quality

Southern California, including the entirety of the proposed initiative study area, does not meet either the federal or state standards for ambient air quality. The Health and Safety Code (H&SC) section 39607(e) requires CARB to periodically review area designation criteria for CAAQS. These designation criteria provide the basis for CARB to designate areas of California as attainment, nonattainment, or unclassified for the State standards. CARB made the first area designations for CAAQS in 1989, and since then, has reviewed the designations each year, making changes as needed. As of 2012, the County has been designated as nonattainment for O_3, $PM_{2.5}$, PM_{10}, and Pb (Table 4.1.3-1, *CAAQS Attainment Status Los Angeles County*). The American Lung Association consistently gives the County failing grades in the amount of ozone and particulate pollution in the air. Although smog levels are impacted by seasons and weather patterns, smog is visible in the air on most days. Frequent sunny days and low rainfall contribute to O_3 formation, as well as high levels of fine particles and dust.

TABLE 4.1.3-1
CAAQS ATTAINMENT STATUS LOS ANGELES COUNTY

Pollutant	Designation
Ozone	Nonattainment
PM_{10}	Nonattainment
$PM_{2.5}$	Nonattainment / Unclassified
Carbon Monoxide	Attainment
Nitrogen Dioxide	Attainment
Sulfur Dioxide	Attainment
Sulfates	Attainment
Lead	Nonattainment
Hydrogen Sulfide	Unclassified
Visibility Reducing Particles	Unclassified

SOURCE: California Environmental Protection Agency, Air Resources Board. 2013. 2012 State Area Designations. Available online at: http://www.arb.ca.gov/desig/adm/adm.htm

In addition, the County is home to many diverse industries and the largest goods movement hub on the West Coast. In spite of emission controls that are among the most stringent in the country, power generation and petroleum refining continue to be among the County's largest stationary sources of air pollution.

The determination of whether a region's air quality is healthy or unhealthy is determined by comparing contaminant levels in ambient air samples to national and State standards. These standards were established to protect exposed sensitive receptors from adverse health effects with a margin of safety. Air quality of a region is considered to be in attainment/nonattainment of the State standards.

South Coast Air Basin

The South Coast Air Basin includes all of Orange County and the non-desert areas of Los Angeles, Riverside, and San Bernardino Counties, with an area of 6,800 square miles and a population of approximately 16 million people in 2011. The Los Angeles urban area (the nation's second largest), the Anaheim-Fullerton urban area, and the Riverside-San Bernardino urban area lie within the Basin's boundaries. About two-thirds of the Basin's population lives within Los Angeles County.

For the SCAB, the maximum pollutant concentrations measured at SCAQMD monitoring stations in 2011 exceeded the levels of the federal standards for ozone (O_3), $PM_{2.5}$, nitrogen dioxide (NO_2), and lead (Pb) (Table 4.1.3-2, *NAAQS Attainment Status South Coast Air Basin*). In 2011, a total of 125 days exceeded the levels of current short-term (24-hour average or less) federal standards for 8-hour O_3 or 24-hour $PM_{2.5}$ at one or more SCAB locations. The more stringent State 8-hour O_3 or 24-hour PM_{10} standards were exceeded on 137 days. While the SCAB exceeded the State annual and 24-hour PM_{10} standards, it did not exceed the 24-hour federal standard. The federal and State annual $PM_{2.5}$ standards were exceeded in the SCAB in 2011, with only one station exceeding the federal standard. While the State PM_{10} annual standard was exceeded, the revoked federal annual

PM_{10} standard was not. The other criteria pollutants, sulfur dioxide (SO_2), carbon monoxide (CO), and sulfate (SO_4), did not exceed federal or State standards.[1]

TABLE 4.1.3-2
NAAQS ATTAINMENT STATUS SOUTH COAST AIR BASIN

Criteria Pollutant	Standard	Designation
Ozone	1-Hour (0.12 ppm)	Nonattainment (Extreme)
	1997 8-Hour (0.08 ppm)	Nonattainment (Extreme)
	2008 8-Hour (0.075 ppm)	Nonattainment (Extreme)
Carbon Monoxide	1-Hour (35 ppm)	Attainment
	8-Hour (9 ppm)	Attainment
Nitrogen Dioxide	1-Hour (100 ppb)	Attainment
	Annual (0.053 ppm)	Attainment
Sulfur Dioxide	1-Hour (75 ppb)	Designation pending
	24-Hour (0.14 ppm)	Designation pending
	Annual (0.03 ppm)	Attainment
PM_{10}	24-Hour (150 $\mu g/m^3$)	Nonattainment (Serious)
$PM_{2.5}$	24-Hour (35 $\mu g/m^3$)	Nonattainment
	Annual (15.0 $\mu g/m^3$)	Nonattainment
Lead	3-Months Rolling (0.15 $\mu g/m^3$)	Nonattainment (Partial)

SOURCE: South Coast Air Quality Management District. 2012 AQMP. Appendix II, Current Air Quality. February 2013. Available at: http://www.aqmd.gov/aqmp/2012aqmp/Final-February2013/AppII.pdf

South Coast Air Quality Management District

The SCAQMD was established by State legislation effective February 1, 1977, and was assigned jurisdiction over air quality in the South Coast Air Basin (Basin). The SCAQMD covers approximately 10,743 square miles and is home to more than 16.8 million people – about half the population of the whole state of California. It is the second most populated urban area in the United States and one of the smoggiest.

The Castaic/Santa Clarita/Agua Dulce subarea, East San Gabriel Mountains, and the western portion of the Acton subarea are located within the SCAQMD boundary, and are therefore subject to the SCAQMD Air Quality Management Plan (AQMP). The most recent update to the AQMP was adopted in 2012 by the SCAQMD Board and the CARB. The AQMP demonstrates attainment of the federal 24-hour $PM_{2.5}$ standard by 2014 in the SCAB through adoption of all feasible measures. The current AQMP also updates the U.S. EPA-approved 8-hour ozone control plan with new measures designed to reduce reliance on the CAA Section 182(e)(5) long-term measures for NO_x and VOC reductions. In addition, the AQMP addresses several State and federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological air quality models.

[1] South Coast Air Quality Management District. 2012 AQMP. Appendix II, Current Air Quality. February 2013. Available at: http://www.aqmd.gov/aqmp/2012aqmp/Final-February2013/AppII.pdf

Mojave Desert Air Basin

The MDAB encompasses approximately 21,480 square miles and includes the desert portions of San Bernardino County, Palo Verde Valley, Palmdale and Lancaster in the Antelope Valley. The MDAB is bordered by the SCAB and the Riverside County line to the south, Kern County line to the west, the Arizona and Nevada borders to the north and east, and the eastern portion of Riverside County to the southeast.

Antelope Valley Air Quality Management District

As shown in Table 4.1.3-3, *NAAQS and CAAQS Attainment Status for AVAQMD*, the AVAQMD portion of the MDAB is classified as non-attainment for the federal and State ozone standards and the State PM_{10} standard. All other criteria pollutants have been designated as attainment for the AVAQMD portion of the MDAB. The AVAQMD Federal 8-hour Ozone Attainment Plan, adopted in May 2008, demonstrates that the AVAQMD will meet the primary required federal ozone planning milestones by June 2021.

The Lake Hughes/Gorman/West of Lancaster subarea; the Lancaster Northeast subarea; the Antelope Valley Northeast subarea; the Lake Los Angeles/Llano/Valyermo/Littlerock subarea; and the eastern portion of the Acton subarea are all located within the AVAQMD, and are therefore subject to the AVAQMD Attainment Plan. The AVAQMD has adopted a single attainment plan for ozone by targeting NO_x and VOC pollutants.

TABLE 4.1.3-3
NAAQS AND CAAQS
ATTAINMENT STATUS FOR AVAQMD

Criteria Pollutant	Standard	Designation
Ozone	8-Hour (Federal 84 ppb)	Nonattainment (Severe)
	8-Hour (Federal 75 ppb)	Nonattainment
	State	Nonattainment (Extreme)
Carbon Monoxide	Federal	Attainment
	State	Attainment
Nitrogen Dioxide	Federal	Attainment
	State	Attainment
Sulfur Dioxide	Federal	Attainment
	State	Attainment
PM_{10}	Federal	Unclassified
	State	Nonattainment
$PM_{2.5}$	Federal	Unclassified/attainment
	State	Unclassified
Lead	Federal	Attainment
	State	Attainment

SOURCE: Antelope Valley Air Quality Management District. AVAQMD Designations and Classifications. Accessed 29 May 2014. Available at: http://www.avaqmd.ca.gov/index.aspx?page=289.

4.1.4 Sensitive Receptors

Land uses identified to be sensitive receptors by SCAQMD in the Air Quality Handbook include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

Residents

The area that would be subject to the proposed initiative consists of 42,867 parcels in the unincorporated area of Los Angeles County, all of which could potentially be developed into single-family residences. As these parcels are vacant and have yet to be developed, all 42,867 parcels shall be considered sensitive receptors.[2]

Using 2008 building footprint GIS data, buildings over 1,000 square feet within one-quarter mile of the 42,867 parcels were identified. (An assumption of over 1,000 square feet was used to qualify a building as a potential residence.) Using the assumption that a residence can only be built on certain zoning designations, there are 21,565 buildings over 1,000 square feet within one-quarter mile of all the proposed initiative subareas. The designations cover cities and unincorporated areas of Los Angeles County. The qualifying zoning designations for building a residence include: commercial recreation, heavy agricultural, light agricultural, limited multiple residence, mixed-use development – rural, residential agricultural, residential planned development, single-family residence, specific plan, and two-family residence.

Schools

There are 20 elementary schools, middle schools, and high schools located within one-quarter mile of the parcels within all the proposed initiative subareas with the exception of the Acton subarea and the Antelope Valley Northeast subarea (see Figure 4.1.4-1, *Schools within One-Quarter Mile of Proposed Initiative Subarea Parcels*, at the end of this section). Table 4.1.4-1, *Schools in Vicinity of Proposed Initiative Subareas*, indicates which schools are located adjacent to or in the vicinity of the proposed initiative subareas.

[2] The term vacant is used as identified by the County Assessor.

TABLE 4.1.4-1
SCHOOLS IN VICINITY OF PROPOSED INITIATIVE SUBAREAS

Subarea	School	Public/Private
Castaic/Santa Clarita/Agua Dulce	Agua Dulce Elementary School	Public
	Desert Canyon Academy	Private
	Mint Canyon Elementary School	Public
	Castaic Elementary School	Public
	Castaic Middle School	Public
Lake Hughes/Gorman/West of Lancaster	Hughes-Elizabeth Lakes Elementary School	Public
	Hughes-Elizabeth Lakes Middle School	Public
	Gorman Elementary School	Public
	Gorman Middle School	Public
	Del Sur Elementary School	Public
	Del Sur Middle School	Public
	Neenach Elementary School	Public
	Sommer Haven Church School	Private
	Shema Christian	Private
Lake Los Angeles/Llano/Valyermo/Littlerock	Almondale Middle School	Public
	Lake Los Angeles Elementary School	Public
	Vista San Gabriel Elementary School	Public
Lancaster Northeast	Eastside Elementary School	Public
East San Gabriel Mountains	Mount Baldy Elementary School	Public
	Hathaway-Sycamores NPS	Private

Medical Centers

There are no medical centers located within a one-quarter-mile buffer of all the proposed initiative subareas.

Parks

In addition to residential parcels, schools, and hospitals, parks are often considered sensitive receptors due to the likely presence of children. There are two neighborhood parks (approximately 10.73 acres), 15 community regional parks (approximately 737.51 acres), and 32 regional parks (approximately 46,307.70 acres) located within a one-quarter-mile buffer of all the proposed initiative's subareas (see Figure 4.1.4-2, *Parks within One-Quarter Mile of Proposed Initiative Subarea Parcels*, at the end of this section).

4.1.5 California Greenhouse Gas Emissions

The State of California Greenhouse Gas Inventory performed by CARB compiled statewide anthropogenic greenhouse gas emission and sinks. It includes estimates for carbon dioxide (CO_2), methane (CH_4), nitrogen oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). The current inventory covers the years 1990 to 2004, and is summarized in Table 4.1.5-1, *State of California Greenhouse Gas Emissions by Sector*.

TABLE 4.1.5-1
STATE OF CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	Total 1990 Emissions ($MMTCO_{2e}$)	Percentage of Total 1990 Emissions	Total 2004 Emissions ($MMTCO_{2e}$)	Percentage of Total 2004 Emissions
Agriculture	23.4	5 percent	27.9	6 percent
Commercial	14.4	3 percent	12.8	3 percent
Electricity generation	110.6	26 percent	119.8	25 percent
Forestry (excluding sinks)	0.2	<1 percent	0.2	<1 percent
Industrial	103.0 percent	24 percent	96.2	20 percent
Residential	29.7	7 percent	29.1	6 percent
Transportation	150.7	35 percent	182.4	38 percent
Forestry sinks	(6.7)		(4.7)	

KEY: $MMTCO_{2e}$ = million metric tons of CO_2 equivalent.
SOURCE: California Air Resources Board. Revised 2 December 2009. Facts about California Greenhouse Gas Emissions Inventory. Available online at: http://www.arb.ca.gov/cc/factsheets/ghginv.pdf

Data sources used to calculate this greenhouse gas inventory include California and federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with guidance from the IPCC. The 1990 emissions level is the sum total of sources and sinks from all sectors and categories in the inventory. The inventory is divided into seven broad categories in the inventory. These sectors include agriculture, commercial, electricity generation, forestry, industrial, residential, and transportation. Transportation and housing account for an estimated 44 percent of GHG emissions. When accounting for greenhouse gases, all types of greenhouse gas emissions are expressed in terms of CO_{2e} and are typically quantified in metric tons (MT) or millions of metric tons (MMT).

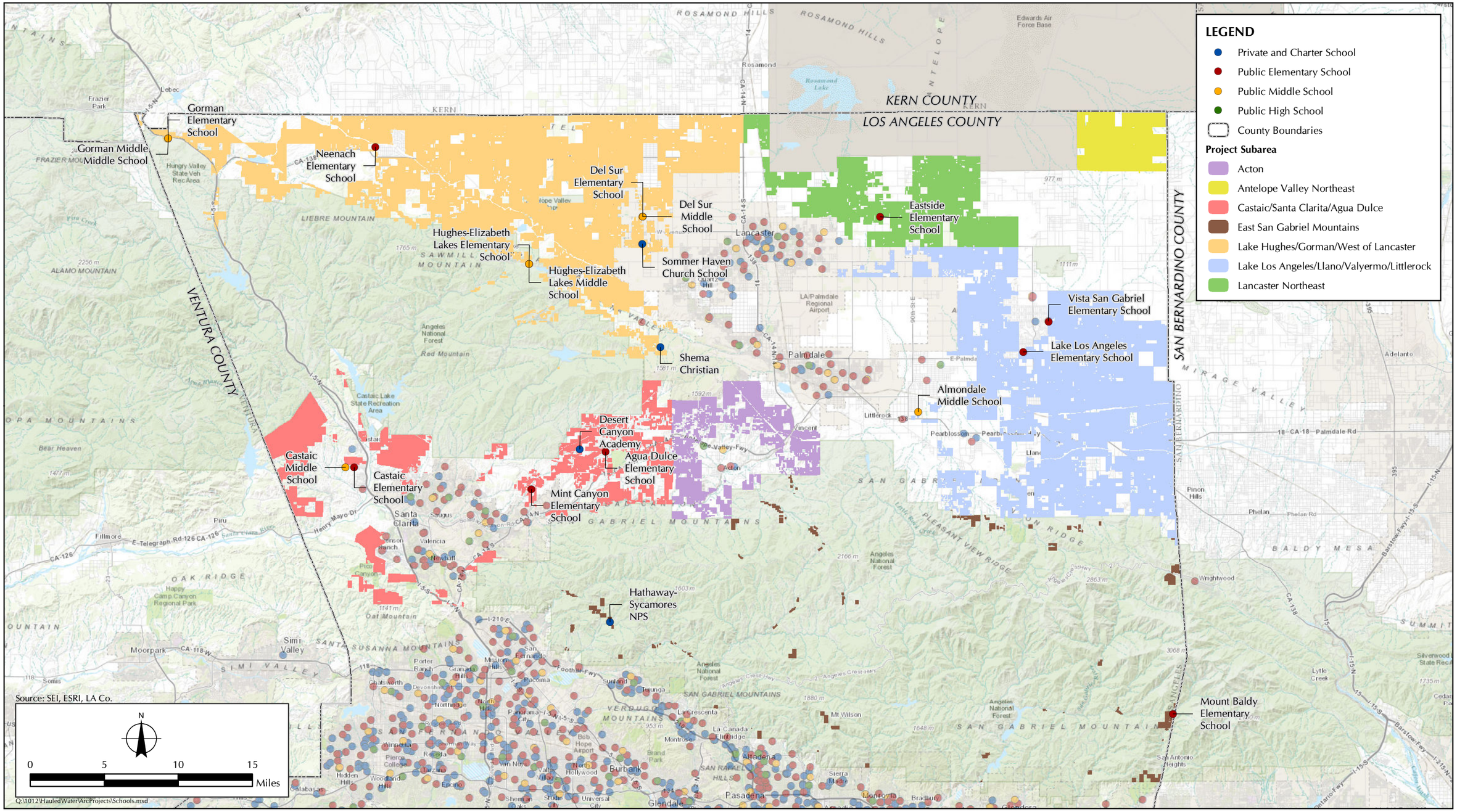

FIGURE 4.1.4-1

Schools within One-Quarter Mile of Proposed Initiative Subarea Parcels

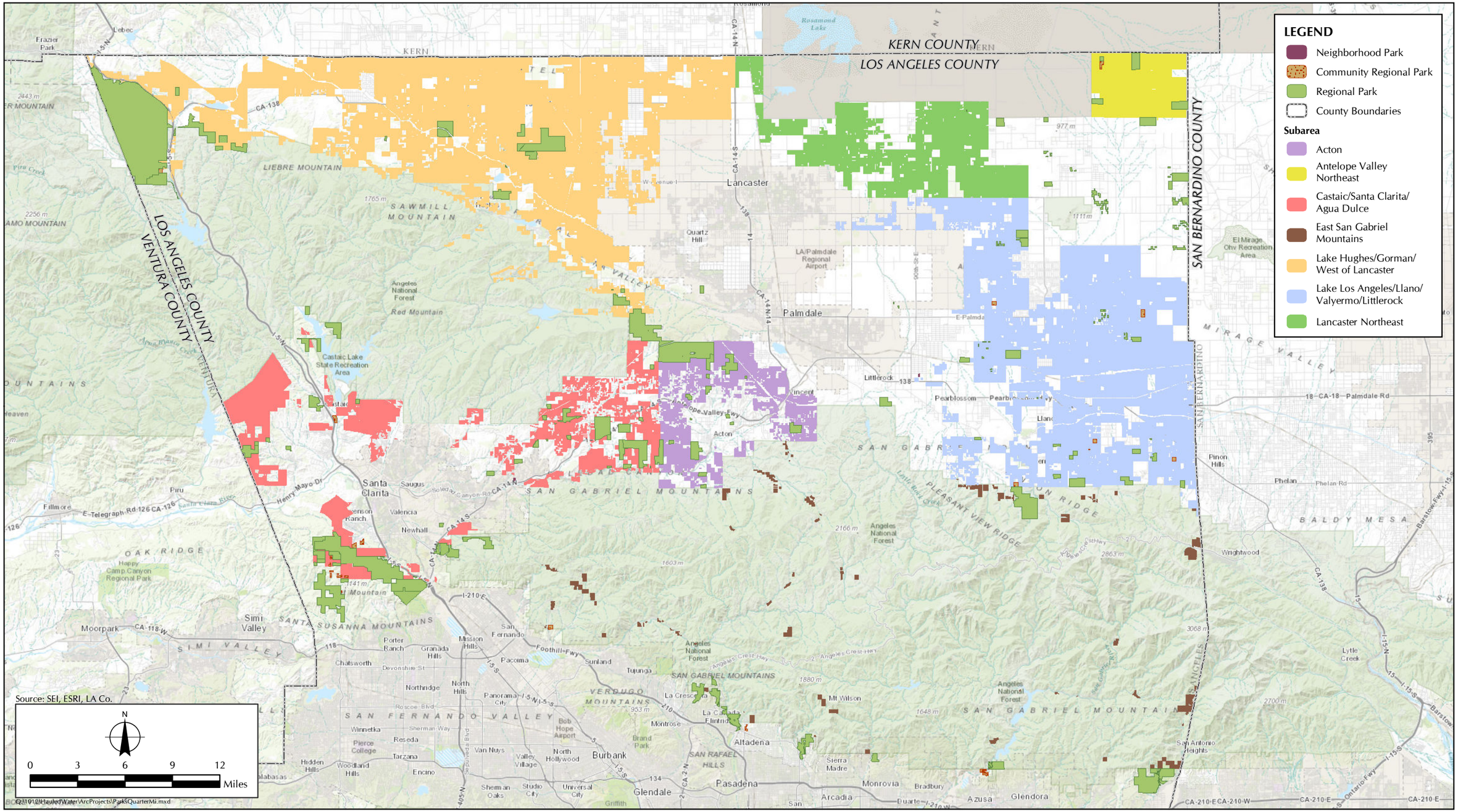

FIGURE 4.1.4-2

Parks within One-Quarter Mile of Proposed Initiative Subarea Parcels

SECTION 5.0
METHODS

The analysis of air quality impacts and GHG emissions associated with the proposed initiative was undertaken consistent with the guidelines provided in the SCAQMD Air Quality Handbook.

5.1 AIR QUALITY

The analysis of the potential for the proposed initiative to result in significant impacts to air quality was analyzed in accordance with the *SCAQMD CEQA Air Quality Handbook*.[1] Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with new development projects within the SCAB. Instead, the *SCAQMD CEQA Air Quality Handbook* was published in 1993 to assist lead agencies, as well as consultants, project proponents, and other interested parties, in evaluating potential air quality impacts of projects proposed in the SCAB. The *SCAQMD CEQA Air Quality Handbook* provides standards, methodologies, and procedures for conducting air quality analyses in environmental impact reports (EIRs) and was used extensively in the preparation of this analysis.

List of Assumptions

- The area that would be subject to the proposed initiative consists of 42,867 parcels in the unincorporated area of Los Angeles County, all of which could potentially be developed into single-family residences. As these parcels are vacant and have yet to be developed, all 42,867 parcels shall be considered sensitive receptors.[2]

- Potential emission estimates from construction activities are based on emission factors and construction scenario information for development at the proposed initiative site. The total amount of construction, including duration and level of construction activity occurring at the proposed initiative site, would influence the estimated construction emissions and resulting potential impacts. Therefore, the emission forecasts are based on conservative assumptions about the construction scenario.

- CalEEMod Model assumes 184 single-family homes under construction simultaneously in any given year (2015–2035) since the maximum construction time is just over one year. While the model is for one single-family home, the emission values were multiplied by 184 to get the total construction emissions from the proposed initiative at one time. In addition, worker commute trips would vary throughout the construction period. This analysis used the highest estimated number of worker commute trips.

- CalEEMod Model assumes a typical construction scenario for a single-family home. The duration of construction is 14 months to construct a 4,000-square-foot home on an average four-acre lot. Of the four-acre lot, there is an estimated 36 percent disturbance or 1.44 acres. An estimated three people will occupy the home.

- Best practices for energy and water use were built into the CalEEMod Model.

[1] South Coast Air Quality Management District. SCAQMD CEQA Air Quality Handbook. 1993. http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook

[2] The term vacant is used as identified by the County Assessor.

- CalEEMod Model assumes a 2016 operation-year level of emissions. This value was multiplied over the 20-year time horizon in the analysis. Operational emissions assumed a full build out of 3,680 parcels by 2035. This is a conservative estimate because both heavy duty diesel construction equipment and light duty vehicles are expected to get cleaner in the next 20 years.

- The air and greenhouse gas emissions analysis is based upon the Fehr & Peers Traffic Analysis, which relies on the SCAG RTP Model. Mobile emissions were calculated from the number of trips and vehicle miles traveled by passenger vehicles and water hauling trucks.

CalEEMod Model

The California Emissions Estimator Model (CalEEMod 2013.2.2) was used to estimate construction and operational emissions associated with the proposed initiative. CalEEMod is a computer program that can be used to estimate emissions associated with land development projects in California such as residential neighborhoods, shopping centers, and office buildings; area sources such as gas appliances, wood stoves, fireplaces, and landscape maintenance equipment; and construction projects. The CalEEMod, version 2013.2.2, emissions model directly calculates criteria pollutant emissions, as well as GHG (CH_4, N_2O, and CO_2) emissions. The analysis of construction impacts to air quality is based on the construction scenario summarized in Section 2.7, Construction Scenario, of this report, which estimates 3,680 building permits over a 20-year horizon.

The air quality impacts from the proposed initiative can be separated into construction-related short-term impacts and operation-related long-term, permanent impacts. Both types of impacts may occur on a local or regional scale.

Construction-related short-term impacts relate to the construction of new single-family residences as part of the proposed initiative. In order to determine historical development trends, 17 years of building permit application data from 1997 through 2014 were reviewed to determine the average number of building permits issued per year for single-family residential development not associated with subdivision development. An anticipated growth factor of 25 percent has been applied based on Southern California Association of Governments (SCAG) projections for the unincorporated area of Los Angeles County from 2008 to 2035. The reasonable worst-case scenario assumes the annual average rate of issuance of building permits over the 20-year 2015 to 2035 planning horizon would be 184 permits per year. The greenhouse gas emissions for these homes were modeled using an estimate for the average square footage of each residence of 4,000 sq. ft., as well as a generic layout and construction schedule of 14 months, and assumptions regarding the construction vehicle traffic.

Operation-related long-term impacts can be classified as the following: the development of new single-family residences that require hauled water to be delivered on a monthly basis from private water purveyors would increase traffic due to the water-hauling trucks, and consequently emissions. The worst-case scenario of the existing traffic conditions (2015) was used in the analysis. Given the projected issuance of 184 building permits per year, at full build-out, the proposed initiative could potentially result in 4,300 water truck vehicle miles traveled per day. (This is the result of 134 water truck vehicle trips, traveling on average 31.8 miles per trip.) As new residences result in population increases, more private vehicles on the roads would result in increased

emissions as well. At full build-out, the proposed initiative has the potential to result in a permanent increase of 10 private vehicle trips per parcel, traveling on average 16 miles a day, for a cumulative total of 588,000 vehicle miles traveled per day in the proposed initiative subareas.

Toxic Air Contaminants

The greatest potential for toxic air contaminant (TAC) emissions during construction would be diesel particulate emissions associated with the use of heavy-duty equipment during construction. TAC emissions associated with construction of the proposed initiative have been analyzed by using the standard health risks assessment methodology to determine "Individual Cancer Risk" of a person continuously exposed to TACs over a 70-year lifetime.

The Office of Environmental Health Hazard Assessment (OEHHA) has developed a methodology for estimating health risks from TAC pollutants such as diesel exhaust from construction equipment. OEHHA has developed a diesel particulate matter (DPM) inhalation non-cancer (long-term) reference exposure level (REL) of 5 micrograms per cubic meter ($\mu g/m^3$). No non-cancer acute (short-term) REL has been established for DPM.

Odors

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed initiative is for single-family residences so it does not fit into any of those categories. Odors from the proposed initiative are mainly generated from construction. Project impacts are evaluated in reference to SCAQMD Rule 402 and the potential to affect nearby sensitive receptors such as parks, schools, medical centers, and other residences.

5.2 GREENHOUSE GAS EMISSIONS

The analysis of greenhouse gas emissions was undertaken consistent with the August 2010 CAPCOA guidance on quantifying GHG emissions mitigation measures. The guidance was a resource tool for the local government to assess emission reductions from GHG mitigation measures.[3] The guidance listed various purposes for quantifying GHG emission reduction, including voluntary reductions of GHG emissions, reductions to mitigate current or future GHG emissions at a project level, reductions for regulatory compliance with command and control regulations, permitting programs, cap-and-trade programs, a mandatory reporting rule for specified stationary sources, and reductions to obtaining GHG emission credits. In addition, the guidance listed quantification concepts, approaches, and methodologies. Quantification methodologies for a selection of GHG emission reduction measures such as vegetation (including trees), construction equipment, and transportation were discussed. This guidance demonstrated State-recommended methods on how to quantify GHG emission mitigation measures that warrants consideration by the South Coast Air Quality Management District (SCAQMD).

[3] California Air Pollution Control Officers Association. August 2010. Quantifying Greenhouse Gas Mitigation Measures. Sacramento, CA. Available at: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

Short-Term Greenhouse Gas Emissions Inputs

The proposed initiative would include the construction of a number of single-family residential homes, with an average total lot size of four acres. The following factors were assumed in the technical analyses of air quality using the CalEEMod, version 2013.2.2, emission model:

1. Total construction of a single-family residence would take a maximum of 14 months.

2. The construction activities undertaken would be as follows:

Month 1–3:	Site Preparation
Month 3–6:	Grading
Month 6–12:	Building Construction
Month 12–13:	Paving
Month 13–14:	Architectural Coating

3. A maximum of 1.44 acres would be disturbed temporarily during the ground clearing, site preparation, and grading phases of construction.

4. The climate zone was set to 9 based on the CEC forecasting climate zones, and the wind speed was set to 2.2 meters per second.

6. One hundred percent of worker trips were assumed to occur on unpaved roads during ground clearing and site preparation construction phases.

7. Default parameters, such as the horsepower and the load factor, were used for all construction equipment anticipated to be used for the proposed initiative / proposed action.

8. For residential exterior architectural coating, the VOC was set to 100 g/L. For residential interior architectural coating, the VOC was set to 50 g/L.

9. Landscaping was not included as a phase of construction due to the minimal emissions that would be generated from basic landscaping equipment (i.e. lawnmower, weed-whacker).

Long-Term Greenhouse Gas Emissions Inputs

According to the Fehr & Peers Traffic Analysis[4], the average home requires 5,000 gallons of potable water per week and an extra 5,000 gallons for fire protection to be refilled once a year. At full build-out by 2035, the proposed initiative would result in 4,300 water truck VMT per day with 134 trucks traveling on average 31.8 miles round trip. It is assumed one truck could visit up to four parcels in a day, which equates to 134 trucks in operation daily to serve all 3,680 parcels. Private vehicle trips are estimated at 588,000 vehicle miles traveled per day in the proposed initiative subareas. Greenhouse gas emissions are calculated using these values.

[4] Fehr & Peers. June 2015. Single-Family Residential Hauled Water Initiative for New Development: Traffic Analysis. Prepared for: Los Angeles County Hauled Water Task Force.

6.1 SIGNIFICANCE CRITERIA

The air quality impacts associated with the proposed initiative can be separated into construction-related short-term impacts and operation-related long-term, permanent impacts. Both types of impacts may occur on a local or regional scale. The potential for the proposed initiative to result in impacts related to air quality and GHG emissions was analyzed in relation to the questions outlined in Appendix G of the State CEQA Guidelines:[1]

Air Quality

(a) Conflict with or obstruct implementation of the applicable air quality plan?

(b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

In the absence of specific guidance set forth by the County of Los Angeles regarding construction emissions, impacts to air quality were also evaluated in accordance with the most recent SCAQMD and AVAQMD significance thresholds for criteria pollutants (Table 6.1-1, *SCAQMD Air Quality Significance Thresholds*; and Table 6.1-2, *AVAQMD Air Quality Significance Thresholds*).

TABLE 6.1-1
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Pollutant	Construction (pounds/day)	Operation (pounds/day)
Nitrogen Oxides	100	55
VOC	75	55
PM_{10}	150	150
$PM_{2.5}$	55	55
Sulfur Oxides	150	150
Carbon Monoxide	550	550

SOURCE: SCAQMD *CEQA Handbook* (SCAQMD, 1993)

[1] California Code of Regulations. Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

TABLE 6.1-2
AVAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Pollutant	Construction (pounds/day)	Operation (pounds/day)
Nitrogen Oxides	137	137
VOC	137	137
PM_{10}	82	82
$PM_{2.5}$	82	82
Sulfur Oxides	137	137
Carbon Monoxide	548	548

SOURCE: AVAQMD *CEQA and Federal Conformity Guidelines* (AVAQMD, 2011)

(c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

(d) Expose sensitive receptors to substantial pollutant concentrations?

(e) Create objectionable odors affecting a substantial number of people?

Greenhouse Gases

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

(b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

In the absence of established GHG emission thresholds, this analysis will utilize the 25,000 metric tons of carbon dioxide equivalent ($MTCO_{2e}$) per year threshold recommended by the CAPCOA in January 2008.[2]

6.2 IMPACT ANALYSIS

This section analyzes the potential for the proposed initiative to have significant impacts to air quality and GHG emissions. Air quality impacts of a proposed initiative generally fall into four major categories:

[2] California Air Pollution Control Officers Association. January 2008. CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. Sacramento, CA.

1. *Construction Impacts*—temporary impacts, including airborne dust from grading and dirt hauling; and gaseous emissions from heavy equipment, delivery and dirt hauling trucks, employee vehicles, and paints and coatings. Construction emissions vary substantially from day to day, depending on the level of construction phase and weather conditions.

2. *Operational Regional Impacts*—primarily gaseous emissions from natural gas and electricity usage and vehicles traveling to and from a project site.

3. *Operational Local Impacts*—increases in pollutant concentrations, primarily carbon monoxide, resulting from traffic increases in the immediate vicinity of a project, as well as any toxic and odor emissions generated on site.

4. *Cumulative Impacts*—air quality changes resulting from the incremental impact of the project when added to other projects in the vicinity.

6.2.1 Construction Phase

Construction of the proposed initiative has the potential to create air quality and GHG emission impacts through the use of heavy-duty construction equipment, and through vehicle trips generated from construction workers traveling to and from the proposed initiative site. Fugitive dust emissions would primarily result from site preparation activities (i.e., grading), whereas NO_x and GHG emissions would primarily result from delivery and hauling of construction materials and equipment, the use of heavy-duty construction equipment, and the construction workers' commute trips to and from the proposed initiative site. The assessment of construction air quality impacts considers each of these potential sources during each part of the construction phase. Although construction emissions can vary substantially from day to day, depending on the level of activity and the specific type of operation, and the fact that fugitive dust emissions can vary based on the prevailing weather conditions, the analysis considers a worst-case scenario with concurrent use of construction equipment to ensure that impacts are not underestimated.

Construction Scenario

The construction scenario for a typical single-family residence is fully described earlier in Section 1.3.1, *Construction Scenario*.

Construction Impacts

During construction of the proposed initiative, there is a potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the proposed initiative site. Mobile emissions, primarily NO_x, would result from the use of heavy construction equipment. During the finishing phase, paving operations and the application of architectural coatings (i.e., paints) and other building materials would release VOCs.

Construction emissions are expected to result from the following activities:

- Site preparation including ground clearing, grading, and trenching
- Delivery of construction materials to and from the project site

- Fuel combustion by on-site construction equipment
- Construction worker commute trips

Construction Emissions

The daily regional construction emissions for the proposed initiative were estimated using the CalEEMod, version 2013.2.2, emissions model for the simultaneous construction of 184 single-family residences across Los Angeles County (Table 6.2.1-1, *Estimated Daily Regional On-Site Construction Emissions*). The eligible 42,867 parcels are split between the SCAQMD and the AVAQMD with approximately eight percent of the parcels in SCAQMD and 92 percent in AVAQMD.

TABLE 6.2.1-1
ESTIMATED DAILY REGIONAL ON-SITE CONSTRUCTION EMISSIONS

Off-Road Emission Sources	Construction Emissions (Pounds/Day)					
	VOCs	NOx	CO	SOx	$PM_{2.5}$	PM_{10}
Site Preparation	27.51	293.28	218.43	<1	36.12	56.03
Grading	48.70	516.99	333.11	<1	53.34	80.46
Building Construction	152.55	1638.54	741.63	<1	66.35	71.12
Paving	18.16	206.78	129.61	<1	9.27	10.06
Architectural Coating	235.81	145.49	115.55	<1	12.05	12.05
SCAQMD Significance Threshold	**75**	**100**	**550**	**150**	**55**	**150**
Significant?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**No**
AVAQMD Significance Threshold	**137**	**137**	**548**	**137**	**82**	**82**
Significant?	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**

SOURCE: Sapphos Environmental, Inc., Appendix B, *CalEEMod Output for the Proposed initiative*.

As is indicated in Table 6.2.1-1, the proposed initiative would have a significant impact on air quality for VOCs, NO_x, CO, and $PM_{2.5}$ in the SCAQMD region. The proposed initiative would have a significant impact on VOCs, NO_x, and CO in the AVAQMD region. Considering that construction equipment will meet stricter emission standards in the future and given the 20-year time horizon for this project, this analysis constitutes a worst-case scenario using emissions calculated in 2016. Tier 4 emission standards for off-road diesel engines are expected to reduce exhaust emissions by 90 percent.[3] Additionally due to the conservative nature of the assumptions made in the development of the model (See 5.0 *Methods*), actual emissions from construction are likely to be less than the estimated emissions.

Toxic Air Contaminants

The Office of Environmental Health Hazard Assessment (OEHHA) has developed a methodology for estimating health risks from TAC pollutants such as diesel exhaust from construction equipment. Although a cancer risk factor has been established for DPM, the OEHHA Health Risk

[3] U.S. Environmental Protection Agency. 11 August 2014. "Non-road diesel engines." Available at: http://www.epa.gov/oms/nonroad-diesel.htm

Assessment (HRA) cancer risk factors assume a continuous exposure over a 70-year timeframe. Because the construction schedule estimated that the phases which require the most heavy-duty diesel equipment usage, such as site grading and excavation, would last for a much shorter duration (i.e., approximately three months), construction of the proposed initiative would not result in a long-term (i.e., 70-year) substantial source of TAC emissions. Additionally, the SCAQMD CEQA guidance document does not recommend an HRA for short-term construction emissions. Therefore, the HRA is not meaningful to evaluate long-term cancer impacts from construction activities that occur over a relatively short duration. In addition, there would be no residual emissions after construction and no corresponding individual cancer risk. As such, the proposed initiative would not expose sensitive receptors to substantial pollutant concentrations and project-related TAC emissions impacts during construction would be less than significant.

Odors

During the proposed initiative's construction phase, activities associated with the operation of construction equipment, the application of asphalt, the application of architectural coatings and other interior and exterior finishes, and roofing may produce discernible odors typical of most construction sites. SCAQMD and AVAQMD's Rule 1113, *Architectural Coatings* limits the amount of volatile organic compounds from architectural coatings and solvents to further reduce the potential for odiferous emissions. Exterior and interior coatings were assumed to contain low VOC emissions in the modeling. Although these odors could be a source of nuisance to adjacent uses, they are temporary and intermittent in nature. In addition, as construction-related emissions dissipate away from the construction area, the odors associated with these emissions would also decrease and would be quickly diluted. Therefore, impacts associated with objectionable odors during construction would be less than significant.

6.2.2 Operational Impacts

Operation and Maintenance Emissions

Operation and maintenance emissions at the proposed initiative site are likely to result from energy consumption at the single-family residence and on-road mobile sources associated with private vehicle trips and the delivery of hauled water each week. Additionally, operational emissions will be generated from area sources including consumer products that contain solvents, landscaping that uses fuel-powered equipment, and on-site emergency generators. The CalEEMod emissions model was used to calculate emissions from operational equipment and from mobile-source emissions (Table 6.2.2-1, *Estimated Daily Operational Emissions*). Table 6.2.2-1 shows the total amount of operational emissions expected by 2035 with 3,680 new single-family residences developed.

TABLE 6.2.2-1
ESTIMATED DAILY OPERATIONAL EMISSIONS

Emission Sources	Air Pollutants (Pounds/Day)					
	VOCs	NO_x	CO	SO_x	$PM_{2.5}$	PM_{10}
Area	332.67	3.61	308.02	1.66	1.66	1.66
Energy	2.98	25.47	10.82	<1	2.06	2.06
Mobile (Hauled Water Truck Trips)	.17	1.93	1.99	<1	.08	.21
Mobile (Passenger Trips)	222.27	557.15	3540.16	5.89	112.61	407.38
Total	**558.09**	**588.16**	**3860.99**	**7.70**	**116.41**	**411.31**
SCAQMD Significance Threshold	**75**	**100**	**550**	**150**	**55**	**150**
Significant?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
AVAQMD Significance Threshold	**137**	**137**	**548**	**137**	**82**	**82**
Significant?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**

SOURCE: Sapphos Environmental, Inc., Appendix B, *CalEEMod Output for the Proposed initiative*.

As is indicated in Table 6.2.2-1, the proposed initiative is expected to have significant operational air quality impacts. Daily operational emissions are above the SCAQMD and AVAQMD significance thresholds for all criteria air pollutants except SO_x. Passenger mobile trips is the largest contributor to the operational emissions as there is an expected 588,000 additional passenger VMT daily made by 2035 at full build-out on 3,680 parcels. The 4,300 daily truck VMT generated by this proposed initiative are responsible for a relatively small amount of emissions compared to the passenger trips generated from the new single-family residences. As such, mitigation measures related to air quality are required for operation of the proposed initiative.

It is important to note that the estimated emissions are likely to be higher than actual emissions from the proposed initiative due to the conservative assumptions used for emission modeling and emission factors from 2016. In the next 20 years, it is likely that there will be technological advances and stricter regulations reducing the operational household and mobile emissions. For example, passenger mobile emissions are expected to decline significantly with CAFE standards reaching an average 54.5 mpg for all cars by 2025.

Local Operational Impacts

Carbon Monoxide

CO is considered a localized problem and requires additional analysis when a proposed initiative is likely to expose sensitive receptors to localized levels of CO concentrations from vehicles, which are known as CO "hotspots." The SCAQMD recommends an evaluation of potential localized CO impacts when a project causes the level of service (LOS) at a study street intersection to worsen from C to D, or if a project increases the volume-to-capacity (V/C) ratio at any street intersection rated D or worse by two percent or more. According to the *Single-Family Residential Hauled Water Initiative for New Development: Traffic Analysis*, conducted by Fehr & Peers in May 2015,[4]

[4] Fehr & Peers. 22 May 2015. *Single-Family Residential Hauled Water Initiative for New Development: Traffic Analysis*. Santa Monica, CA.

planned roadway capacity is adequate to handle future volumes within acceptable operating conditions. See Table 8, *Roadway Segment LOS – Existing and Existing Plus Project (2015)*, and Table 9, *Roadway Segment LOS – Cumulative Year Plus Project (2035), in the Traffic Analysis*.

Toxic Air Contaminants

Toxic air contaminants are pollutants that cause adverse health effects, but do not have an associated federal or State ambient air quality standard. The primary sources of TAC emissions related with the proposed initiative's operations are DPM from passenger vehicles and trucks. The SCAQMD recommends that HRAs be conducted for substantial sources of DPM (e.g. truck stops and warehouse distribution facilities) and has provided guidance for analyzing mobile source diesel emissions.[5] Because the emissions from the proposed initiative are dispersed across Los Angeles County, each construction site or parcel location would experience only a fraction of the total proposed initiative's emissions. Therefore, potential TAC impacts to nearby sensitive receptors are not anticipated to be significant. A HRA is not necessary.

In California, TACs are regulated by the Air Toxics Program. CARB mandates that airborne toxic control measures limit diesel fueled commercial vehicles (delivery trucks) to idle for no more than five minutes at any given time. This rule would apply to the hauled water trucks that will need to shut off their main engine while filling and delivering water. The increase in air toxic impacts from mobile sources of DPM emissions has the potential to be substantial cumulatively because the proposed initiative includes 588,000 new daily passenger VMT and 4,300 new daily truck VMT. Water haulers shall adhere to California's Commercial Vehicle Idling Regulations, which states that heavy duty diesel vehicles over 10,000 lbs. shall not idle for more than five minutes at any given time.[6]

Odors

According to the *SCAQMD CEQA Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed initiative does not include any uses identified by the SCAQMD or AVAQMD as being associated with odors as construction is typical for a single-family residence and are short term. Garbage collection areas for the proposed initiative would be covered and situated away from the property line and sensitive receptors locations. Good housekeeping practices would be sufficient to prevent nuisance odors. Therefore, the proposed initiative would not result in the creation of objectionable odors and potential odor impacts would be less than significant.

6.2.3 Greenhouse Gas Emissions

The proposed initiative's global climate change impacts were analyzed quantitatively considering the operational scenario, size, and location. To quantify the amount of GHG emissions contributed by construction and operation of the proposed initiative, the CalEEMod emissions model and the California Climate Action Registry's General Reporting Protocol were used. The proposed initiative would be expected to have the potential to result in significant impacts related to global climate

[5] South Coast Air Quality Management District. Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions. December 2002.

[6] California Air Resources Board. Facts about California's Commercial Vehicle Idling Regulations. 23 May 2013. Available at: http://www.arb.ca.gov/msprog/truck-idling/factsheet.pdf

change if the proposed initiative conflicts with the goal of reducing California's GHG emissions to the 1990 levels (427 million metric tons CO_{2e}, which is equivalent to approximately 10 tons CO_{2e} per capita) by 2020 as required by AB 32. Based on the suggested thresholds proposed by the CAPCOA,[7,8] the proposed initiative would be expected to have the potential to result in significant impacts related to global climate change if the proposed initiative emits more than 25,000 metric tons of CO_{2e} per year.

Quantitative Analysis of Greenhouse Gas Emission Impacts

Based on emissions modeling, unmitigated construction activities would result in the emission of a maximum of approximately 105,108 metric tons of CO_{2e} (Table 6.2.3-1, *Unmitigated CO_2 and CO_{2e} Emissions*). Operation of the proposed initiative would result in the emission of approximately 105,108 metric tons of CO_{2e} per year in 2035 and beyond (Table 6.2.3-1). The operational GHG emissions can be attributed to mobile sources including passenger trips for the residences and hauled water truck trips associated with the development of 3,680 parcels. As is indicated in Table 6.2.3-1, the proposed initiative's construction and operational emissions are expected to exceed the recommended CAPCOA threshold of 25,000 metric tons of CO_{2e} per year; thus warranting the implementation of mitigation measures.

TABLE 6.2.3-1
UNMITIGATED CO_2 and CO_{2e} EMISSIONS

Emission Sources	CO_2 Emissions (Metric Tons/Year)	CO_{2e} Emissions (Metric Tons/Year)
Construction Emissions	27,375	27,471
Operational Emissions	103,573	105,108
CAPCOA Recommended Threshold*	**25,000**	**25,000**
Significant?	**Yes**	**Yes**

NOTE: *In the absence of established GHG emission thresholds, this analysis will utilize the 25,000 metric tons of carbon dioxide equivalent ($MTCO_{2e}$) per year threshold recommended by the California Air Pollution Control Officers Association (CAPCOA) in January 2008

6.3 CUMULATIVE IMPACTS

Within Los Angeles County, the cumulative impacts encompass this proposed initiative and others listed in the updated Antelope Valley Area Plan as well as the current 2012 SCAG RTP. Related projects in the vicinity include the Centennial Project and the High Desert Corridor Project.

6.3.1 Construction

According to the SCAQMD, construction projects that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in non-attainment. Because there is an

[7] California Air Pollution Control Officers Association. January 2008. CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. Sacramento, CA.

[8] U.S. Department of Energy, Energy Information Administration. Voluntary Reporting of Greenhouse Gases Program. Washington, D.C. Available at: http://www.eia.gov/oiaf/1605/

expected 184 single-family residences under construction simultaneously each year for the next 20 years according to the proposed initiative, daily emissions of VOCs, NO_x, CO, and $PM_{2.5}$ are anticipated to be significant in the absence of mitigation measures. Therefore, the proposed initiative has the potential to have significant impacts in relation to generating a cumulatively considerable net increase in emissions of VOCs, NO_x, CO, and $PM_{2.5}$, thus requiring the consideration of mitigation measures.

Similar to the proposed initiative, the greatest potential for TAC emissions at each related project would involve diesel particulate emissions associated with heavy equipment operations during grading and excavation activities. According to the SCAQMD's methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Additionally, the SCAQMD CEQA Air Quality Handbook does not require an HRA for short-term cancer impacts from construction activities which occur over a relatively short duration. As such, cumulative toxic emission impacts during construction would be less than significant.

Also similar to the proposed initiative, potential sources that may emit odors during construction activities at each related project would include the use of roofing materials, architectural coatings, and solvents. SCAQMD Rule 1113 limits the amount of volatile organic compounds from architectural coatings and solvents. Via mandatory compliance with SCAQMD rules, it is anticipated that construction activities or materials used in the construction of the related project would not create objectionable odors. Thus, odor impacts from the related project are anticipated to be less than significant individually, as well as cumulatively in conjunction with the proposed initiative.

6.3.2 Operation

There are two related projects that have been identified in the vicinity of the proposed initiative site. If an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's or AVAQMD's recommended daily thresholds for project-specific impacts, then the project would also result in a cumulatively considerable net increase of these criteria pollutants. As discussed above, peak daily emissions of operation-related pollutants would exceed SCAQMD and AVAQMD's regional significance thresholds for VOCs, NO_x, CO, $PM_{2.5}$ and PM_{10}. By applying the SCAQMD's cumulative air quality methodology, implementation of the proposed initiative would result in a cumulatively considerable net increase of any criteria pollutant for which the Basin in non-attainment. The South Coast Basin is currently in nonattainment for ozone for which VOCs are a precursor, $PM_{2.5}$ and PM_{10}. The Mojave Desert Air Basin is currently in nonattainment for ozone and PM_{10}. Cumulative impacts would occur. Therefore, the emissions of non-attainment pollutants and precursors generated through operation of the proposed initiative in excess of the SCAQMD project-level thresholds would be significant.

6.3.3 Toxic Air Contaminants

With respect to TAC emissions, the proposed initiative would not represent a substantial source of TAC emissions. Based on recommended screen-level siting distance for TAC sources, as set forth in CARB's Land Use Guidelines, the proposed initiative and the related projects would likely generate minimal TAC emissions related to the use of diesel truck idling, consumer products, and landscaping maintenance activities, among other things. Pursuant to AB 1807, which directs CARB to identify substances as TAC and adopt airborne toxic control measures to control such

substances, the SCAQMD has adopted numerous rules (primarily Regulation XIV) that specifically address TAC emissions. These SCAQMD rules have resulted in and will continue to result in substantial Basin-wide TAC emission reductions. As such, cumulative TAC emissions during long-term operations would be less than significant. Furthermore, the proposed initiative would not result in any new sources of TACs beyond those that have been identified under CARB's Land Use Guidelines, and thus would not contribute to a cumulative impact.

6.3.4 Odors

With respect to potential odor impacts, neither the proposed initiative nor any of the related projects (residences, multi-modal link, freeway extension) have a high potential to generate odor impacts. Furthermore, any related project that may have the potential to general objectionable odors would be required by SCAQMD/AVAQMD Rule 402, *Nuisance*, to impact BACT to limit objectionable odor impacts to a less than significant level. Thus, potential odor impacts from the related project are anticipated to be both individually and cumulatively less than significant.

SECTION 7.0
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APPENDIX A
CALEEMOD OUTPUT FOR THE PROPOSED PROJECT

1012-055 Single-Family Residential Hauled Water Initiative for New Development

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1.00	Dwelling Unit	4.00	4,000.00	3

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2016
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2016 operation year will give worst case scenario

Land Use - Assume 4000 SF floor area of Residence.
Estimated population based on floor plan of proposed residence.
Assume 4 acre average lot size.

Construction Phase - Construction scenario has 14 months total. No demo, but a hypothetical demo added here to represent the hauled water delivery trips.

Off-road Equipment - Estimated air compressor time to 2 hrs/day.

Trips and VMT - Construction scenario based off of Kumar Single Family Residence Project
Site Prep: 5 worker trips, 10 hauling trips
Grading: 5 worker trips, 10 hauling trips
Building Construction: 20 worker trips, 30 vendor trips, 10 hauling trips
Paving: 5 worker trips
AC: 5 worker trips

Hauled water trips from Fehr and Peers report- Assume full build out on hauled water delivery trips with 134 trucks per day with each traveling 31.8 roundtrip miles.

On-road Fugitive Dust - 25mph mean vehicle speed

Architectural Coating - Low VOC estimate

Off-road Equipment - Construction scenario based off of Kumar Single Family Residence Project
1 dozer for 5 days at 8 hr/day = 40 hrs/65 days site prep =0.6 hrs/day
1 backhoe for 10 days at 8hr/day = 80 hrs/ 65 days site prep =1.2 hr/day

Off-road Equipment - Construction scenario based off of Kumar Single Family Residence Project
1 dozer for 5 days at 8hr/day = 40 hrs/ 90 days grading = .44 hr/day
1 grader for 5 days at 8hr/day = 40 hrs/ 90 days grading = .44 hr/day
1 bobcat for 5 days at 8hr/day = 40 hrs/90 days grading = .44 hr/day

Off-road Equipment - Based off Kumar single family residence construction scenario:
3 dump trucks for 10 days at 8 hr/day = 80 hr/180 days construction = 0.44 hr/day
12 concrete off-highway trucks for 5 days at 8 hr/day = 40 hr/180 days construction for =0.22 hr/day
30 vendor trips to deliver materials. 30 truck trips to deliver material is estimated at 2 trucks/day at 2 hr/day
Added one backhoe/tractor for an hour/day. Added one forklift for an hour/day. Added one generator set for an hour/day.

Off-road Equipment - Estimated an hour/day for cement mixer, paving equipment, and surfacing eqiupment for a total of 30 hours per equipment type

Off-road Equipment -

Grading - 36% disturbance from MFR 2 (4 acres *.36=1.44 acres disturbed)

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Solid Waste -

Area Mitigation - Low VOC used

Energy Mitigation - Assumed to exceed title 24 energy standards by 10%. Install high efficiency lighting to get a 50% lighting energy reduction.

Water Mitigation - Low flow faucets, toilets, and showers assumed. Assume water conservation strategy for outdoor landscaping equal to ~20% reduction.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00

tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	50
tblConstructionPhase	NumDays	18.00	27.00
tblConstructionPhase	NumDays	230.00	158.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	8.00	93.00
tblConstructionPhase	NumDays	18.00	27.00
tblConstructionPhase	NumDays	5.00	65.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	2.33	1.44
tblGrading	AcresOfGrading	0.00	1.44
tblLandUse	LandUseSquareFeet	1,800.00	4,000.00
tblLandUse	LotAcreage	0.32	4.00
tblOffRoadEquipment	HorsePower	167.00	208.00
tblOffRoadEquipment	HorsePower	253.00	125.00
tblOffRoadEquipment	LoadFactor	0.40	0.43
tblOffRoadEquipment	LoadFactor	0.30	0.42
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.40
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.40
tblOffRoadEquipment	UsageHours	8.00	0.60
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.40
tblOffRoadEquipment	UsageHours	8.00	1.20
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOnRoadDust	MeanVehicleSpeed	40.00	25.00
tblOnRoadDust	MeanVehicleSpeed	40.00	25.00
tblOnRoadDust	MeanVehicleSpeed	40.00	25.00
tblOnRoadDust	MeanVehicleSpeed	40.00	25.00
tblOnRoadDust	MeanVehicleSpeed	40.00	25.00
tblOnRoadDust	MeanVehicleSpeed	40.00	25.00

tblProjectCharacteristics	OperationalYear	2014	2016
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	MeanVehicleSpeed	40	25
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	134.00
tblTripsAndVMT	HaulingVehicleClass		HHDT
tblTripsAndVMT	VendorTripNumber	0.00	30.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00
tblTripsAndVMT	WorkerTripNumber	0.00	5.00
tblVehicleTrips	HO_TL	7.90	16.00
tblVehicleTrips	HS_TL	7.10	16.00
tblVehicleTrips	HW_TL	16.80	16.00
tblVehicleTrips	ST_TR	10.08	10.00
tblVehicleTrips	SU_TR	8.77	10.00
tblVehicleTrips	WD_TR	9.57	10.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	6.9400e-003	0.0652	0.0662	8.0000e-005	0.0328	3.5400e-003	0.0364	0.0166	3.2500e-003	0.0199	0.0000	6.8586	6.8586	1.3900e-003	0.0000	6.8878
2016	0.1296	1.0117	0.9885	1.6800e-003	0.0544	0.0385	0.0928	0.0185	0.0359	0.0544	0.0000	148.9513	148.9513	0.0232	0.0000	149.4378
Total	**0.1366**	**1.0769**	**1.0546**	**1.7600e-003**	**0.0872**	**0.0420**	**0.1292**	**0.0352**	**0.0391**	**0.0743**	**0.0000**	**155.8099**	**155.8099**	**0.0246**	**0.0000**	**156.3256**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	6.9400e-003	0.0652	0.0662	8.0000e-005	0.0162	3.5400e-003	0.0198	7.8700e-003	3.2500e-003	0.0111	0.0000	6.8586	6.8586	1.3900e-003	0.0000	6.8878
2016	0.1296	1.0117	0.9885	1.6800e-003	0.0462	0.0385	0.0847	0.0143	0.0359	0.0501	0.0000	148.9512	148.9512	0.0232	0.0000	149.4377
Total	**0.1366**	**1.0769**	**1.0546**	**1.7600e-003**	**0.0625**	**0.0420**	**0.1045**	**0.0221**	**0.0391**	**0.0613**	**0.0000**	**155.8098**	**155.8098**	**0.0246**	**0.0000**	**156.3255**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**28.37**	**0.00**	**19.14**	**37.08**	**0.00**	**17.55**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0221	9.0000e-005	7.5300e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0121	0.0121	1.0000e-005	0.0000	0.0124
Energy	1.6000e-004	1.3700e-003	5.8000e-004	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.6532	5.6532	1.3000e-004	5.0000e-005	5.6710
Mobile	0.0101	0.0302	0.1578	2.7000e-004	0.0195	3.1000e-004	0.0198	5.1900e-003	2.9000e-004	5.4800e-003	0.0000	21.4804	21.4804	1.1800e-003	0.0000	21.5052
Waste						0.0000	0.0000		0.0000	0.0000	0.2497	0.0000	0.2497	0.0148	0.0000	0.5596
Water						0.0000	0.0000		0.0000	0.0000	0.0207	0.7267	0.7474	2.1400e-003	5.0000e-005	0.8089
Total	**0.0323**	**0.0317**	**0.1659**	**2.8000e-004**	**0.0195**	**4.6000e-004**	**0.0199**	**5.1900e-003**	**4.4000e-004**	**5.6300e-003**	**0.2704**	**27.8724**	**28.1428**	**0.0182**	**1.0000e-004**	**28.5571**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0163	9.0000e-005	7.5300e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0121	0.0121	1.0000e-005	0.0000	0.0124
Energy	1.5000e-004	1.2600e-003	5.4000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	4.9151	4.9151	1.1000e-004	4.0000e-005	4.9309
Mobile	0.0101	0.0302	0.1578	2.7000e-004	0.0195	3.1000e-004	0.0198	5.1900e-003	2.9000e-004	5.4800e-003	0.0000	21.4804	21.4804	1.1800e-003	0.0000	21.5052
Waste						0.0000	0.0000		0.0000	0.0000	0.2497	0.0000	0.2497	0.0148	0.0000	0.5596
Water						0.0000	0.0000		0.0000	0.0000	0.0207	0.6594	0.6801	2.1400e-003	5.0000e-005	0.7416
Total	**0.0265**	**0.0316**	**0.1658**	**2.8000e-004**	**0.0195**	**4.5000e-004**	**0.0199**	**5.1900e-003**	**4.3000e-004**	**5.6200e-003**	**0.2704**	**27.0671**	**27.3375**	**0.0182**	**9.0000e-005**	**27.7497**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**18.16**	**0.35**	**0.02**	**0.00**	**0.00**	**2.17**	**0.05**	**0.00**	**2.27**	**0.18**	**0.00**	**2.89**	**2.86**	**0.11**	**10.00**	**2.83**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/1/2015	12/15/2015	6	65	
2	Grading	Grading	12/16/2015	4/1/2016	6	93	
3	Building Construction	Building Construction	4/2/2016	10/3/2016	6	158	
4	Paving	Paving	10/4/2016	11/3/2016	6	27	
5	Architectural Coating	Architectural Coating	11/4/2016	12/5/2016	6	27	
6	Hauled Water Delivery Trips	Demolition	12/6/2016	12/30/2016	6	22	

Acres of Grading (Site Preparation Phase): 1.44

Acres of Grading (Grading Phase): 1.44

Acres of Paving: 0

Residential Indoor: 8,100; Residential Outdoor: 2,700; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	0.60	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	1.20	97	0.37
Grading	Graders	1	0.40	174	0.41
Grading	Rubber Tired Dozers	1	0.40	255	0.40
Grading	Tractors/Loaders/Backhoes	1	0.40	97	0.37
Building Construction	Dumpers/Tenders	3	0.40	16	0.38
Building Construction	Forklifts	1	1.00	89	0.20
Building Construction	Generator Sets	1	1.00	84	0.74
Building Construction	Off-Highway Trucks	12	0.20	400	0.38
Building Construction	Other Material Handling Equipment	2	2.00	208	0.43
Building Construction	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Building Construction	Welders	1	1.00	46	0.45
Paving	Cement and Mortar Mixers	1	1.00	9	0.56
Paving	Paving Equipment	1	1.00	130	0.36
Paving	Surfacing Equipment	1	1.00	125	0.42
Architectural Coating	Air Compressors	1	2.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	10.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	5.00	0.00	10.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	21	20.00	30.00	10.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Hauled Water Delivery Trips	0			134.00	16.80	6.60	31.80			HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0154	0.0000	0.0154	8.1500e-003	0.0000	8.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8600e-003	0.0518	0.0386	4.0000e-005		2.9500e-003	2.9500e-003		2.7100e-003	2.7100e-003	0.0000	3.5135	3.5135	1.0500e-003	0.0000	3.5355
Total	**4.8600e-003**	**0.0518**	**0.0386**	**4.0000e-005**	**0.0154**	**2.9500e-003**	**0.0184**	**8.1500e-003**	**2.7100e-003**	**0.0109**	**0.0000**	**3.5135**	**3.5135**	**1.0500e-003**	**0.0000**	**3.5355**

3.2 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	1.3100e-003	1.6700e-003	0.0000	9.0000e-005	2.0000e-005	1.1000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3370	0.3370	0.0000	0.0000	0.3371
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.2000e-004	1.5400e-003	0.0158	2.0000e-005	2.0300e-003	2.0000e-005	2.0500e-003	5.4000e-004	2.0000e-005	5.6000e-004	0.0000	1.9321	1.9321	1.3000e-004	0.0000	1.9348
Total	**9.5000e-004**	**2.8500e-003**	**0.0175**	**2.0000e-005**	**2.1200e-003**	**4.0000e-005**	**2.1600e-003**	**5.6000e-004**	**4.0000e-005**	**6.0000e-004**	**0.0000**	**2.2691**	**2.2691**	**1.3000e-004**	**0.0000**	**2.2719**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.9500e-003	0.0000	6.9500e-003	3.6700e-003	0.0000	3.6700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8600e-003	0.0518	0.0386	4.0000e-005		2.9500e-003	2.9500e-003		2.7100e-003	2.7100e-003	0.0000	3.5135	3.5135	1.0500e-003	0.0000	3.5355
Total	**4.8600e-003**	**0.0518**	**0.0386**	**4.0000e-005**	**6.9500e-003**	**2.9500e-003**	**9.9000e-003**	**3.6700e-003**	**2.7100e-003**	**6.3800e-003**	**0.0000**	**3.5135**	**3.5135**	**1.0500e-003**	**0.0000**	**3.5355**

3.2 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	1.3100e-003	1.6700e-003	0.0000	9.0000e-005	2.0000e-005	1.1000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3370	0.3370	0.0000	0.0000	0.3371
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.2000e-004	1.5400e-003	0.0158	2.0000e-005	2.0300e-003	2.0000e-005	2.0500e-003	5.4000e-004	2.0000e-005	5.6000e-004	0.0000	1.9321	1.9321	1.3000e-004	0.0000	1.9348
Total	**9.5000e-004**	**2.8500e-003**	**0.0175**	**2.0000e-005**	**2.1200e-003**	**4.0000e-005**	**2.1600e-003**	**5.6000e-004**	**4.0000e-005**	**6.0000e-004**	**0.0000**	**2.2691**	**2.2691**	**1.3000e-004**	**0.0000**	**2.2719**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0148	0.0000	0.0148	7.7800e-003	0.0000	7.7800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4000e-004	0.0100	6.4300e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.0000e-004	5.0000e-004	0.0000	0.6092	0.6092	1.8000e-004	0.0000	0.6130
Total	**9.4000e-004**	**0.0100**	**6.4300e-003**	**1.0000e-005**	**0.0148**	**5.4000e-004**	**0.0153**	**7.7800e-003**	**5.0000e-004**	**8.2800e-003**	**0.0000**	**0.6092**	**0.6092**	**1.8000e-004**	**0.0000**	**0.6130**

3.3 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	2.0000e-004	2.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0507	0.0507	0.0000	0.0000	0.0507
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	3.3000e-004	3.4100e-003	1.0000e-005	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4161	0.4161	3.0000e-005	0.0000	0.4167
Total	**2.0000e-004**	**5.3000e-004**	**3.6600e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4669**	**0.4669**	**3.0000e-005**	**0.0000**	**0.4675**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.6400e-003	0.0000	6.6400e-003	3.5000e-003	0.0000	3.5000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4000e-004	0.0100	6.4300e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.0000e-004	5.0000e-004	0.0000	0.6092	0.6092	1.8000e-004	0.0000	0.6130
Total	**9.4000e-004**	**0.0100**	**6.4300e-003**	**1.0000e-005**	**6.6400e-003**	**5.4000e-004**	**7.1800e-003**	**3.5000e-003**	**5.0000e-004**	**4.0000e-003**	**0.0000**	**0.6092**	**0.6092**	**1.8000e-004**	**0.0000**	**0.6130**

3.3 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	2.0000e-004	2.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0507	0.0507	0.0000	0.0000	0.0507
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	3.3000e-004	3.4100e-003	1.0000e-005	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4161	0.4161	3.0000e-005	0.0000	0.4167
Total	**2.0000e-004**	**5.3000e-004**	**3.6600e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4669**	**0.4669**	**3.0000e-005**	**0.0000**	**0.4675**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0148	0.0000	0.0148	7.7800e-003	0.0000	7.7800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1300e-003	0.0543	0.0352	4.0000e-005		2.9200e-003	2.9200e-003		2.6900e-003	2.6900e-003	0.0000	3.3980	3.3980	1.0200e-003	0.0000	3.4195
Total	**5.1300e-003**	**0.0543**	**0.0352**	**4.0000e-005**	**0.0148**	**2.9200e-003**	**0.0177**	**7.7800e-003**	**2.6900e-003**	**0.0105**	**0.0000**	**3.3980**	**3.3980**	**1.0200e-003**	**0.0000**	**3.4195**

3.3 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	9.4000e-004	1.3700e-003	0.0000	8.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.2830	0.2830	0.0000	0.0000	0.2830
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	1.6800e-003	0.0172	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.8000e-004	0.0000	2.2645	2.2645	1.5000e-004	0.0000	2.2675
Total	**9.7000e-004**	**2.6200e-003**	**0.0186**	**3.0000e-005**	**2.5500e-003**	**4.0000e-005**	**2.5900e-003**	**6.8000e-004**	**3.0000e-005**	**7.2000e-004**	**0.0000**	**2.5475**	**2.5475**	**1.5000e-004**	**0.0000**	**2.5506**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.6400e-003	0.0000	6.6400e-003	3.5000e-003	0.0000	3.5000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1300e-003	0.0543	0.0352	4.0000e-005		2.9200e-003	2.9200e-003		2.6900e-003	2.6900e-003	0.0000	3.3980	3.3980	1.0200e-003	0.0000	3.4195
Total	**5.1300e-003**	**0.0543**	**0.0352**	**4.0000e-005**	**6.6400e-003**	**2.9200e-003**	**9.5600e-003**	**3.5000e-003**	**2.6900e-003**	**6.1900e-003**	**0.0000**	**3.3980**	**3.3980**	**1.0200e-003**	**0.0000**	**3.4195**

3.3 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	9.4000e-004	1.3700e-003	0.0000	8.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.2830	0.2830	0.0000	0.0000	0.2830
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	1.6800e-003	0.0172	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.8000e-004	0.0000	2.2645	2.2645	1.5000e-004	0.0000	2.2675
Total	**9.7000e-004**	**2.6200e-003**	**0.0186**	**3.0000e-005**	**2.5500e-003**	**4.0000e-005**	**2.5900e-003**	**6.8000e-004**	**3.0000e-005**	**7.2000e-004**	**0.0000**	**2.5475**	**2.5475**	**1.5000e-004**	**0.0000**	**2.5506**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0655	0.7035	0.3184	7.6000e-004		0.0305	0.0305		0.0285	0.0285	0.0000	70.3801	70.3801	0.0198	0.0000	70.7964
Total	**0.0655**	**0.7035**	**0.3184**	**7.6000e-004**		**0.0305**	**0.0305**		**0.0285**	**0.0285**	**0.0000**	**70.3801**	**70.3801**	**0.0198**	**0.0000**	**70.7964**

3.4 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	1.1100e-003	1.6200e-003	0.0000	9.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3331	0.3331	0.0000	0.0000	0.3332
Vendor	0.0297	0.1871	0.4211	4.8000e-004	0.0136	2.7600e-003	0.0164	3.8500e-003	2.5400e-003	6.3900e-003	0.0000	43.0142	43.0142	3.1000e-004	0.0000	43.0207
Worker	6.9500e-003	0.0134	0.1379	2.4000e-004	0.0198	1.7000e-004	0.0200	5.2500e-003	1.5000e-004	5.4100e-003	0.0000	18.1159	18.1159	1.1600e-003	0.0000	18.1403
Total	**0.0368**	**0.2016**	**0.5606**	**7.2000e-004**	**0.0335**	**2.9500e-003**	**0.0365**	**9.1200e-003**	**2.7100e-003**	**0.0118**	**0.0000**	**61.4633**	**61.4633**	**1.4700e-003**	**0.0000**	**61.4942**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0655	0.7035	0.3184	7.6000e-004		0.0305	0.0305		0.0285	0.0285	0.0000	70.3801	70.3801	0.0198	0.0000	70.7963
Total	**0.0655**	**0.7035**	**0.3184**	**7.6000e-004**		**0.0305**	**0.0305**		**0.0285**	**0.0285**	**0.0000**	**70.3801**	**70.3801**	**0.0198**	**0.0000**	**70.7963**

3.4 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	1.1100e-003	1.6200e-003	0.0000	9.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3331	0.3331	0.0000	0.0000	0.3332
Vendor	0.0297	0.1871	0.4211	4.8000e-004	0.0136	2.7600e-003	0.0164	3.8500e-003	2.5400e-003	6.3900e-003	0.0000	43.0142	43.0142	3.1000e-004	0.0000	43.0207
Worker	6.9500e-003	0.0134	0.1379	2.4000e-004	0.0198	1.7000e-004	0.0200	5.2500e-003	1.5000e-004	5.4100e-003	0.0000	18.1159	18.1159	1.1600e-003	0.0000	18.1403
Total	**0.0368**	**0.2016**	**0.5606**	**7.2000e-004**	**0.0335**	**2.9500e-003**	**0.0365**	**9.1200e-003**	**2.7100e-003**	**0.0118**	**0.0000**	**61.4633**	**61.4633**	**1.4700e-003**	**0.0000**	**61.4942**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3300e-003	0.0152	9.5100e-003	2.0000e-005		7.4000e-004	7.4000e-004		6.8000e-004	6.8000e-004	0.0000	1.4304	1.4304	4.2000e-004	0.0000	1.4392
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3300e-003**	**0.0152**	**9.5100e-003**	**2.0000e-005**		**7.4000e-004**	**7.4000e-004**		**6.8000e-004**	**6.8000e-004**	**0.0000**	**1.4304**	**1.4304**	**4.2000e-004**	**0.0000**	**1.4392**

3.5 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	5.7000e-004	5.8900e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.7739	0.7739	5.0000e-005	0.0000	0.7750
Total	**3.0000e-004**	**5.7000e-004**	**5.8900e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.7739**	**0.7739**	**5.0000e-005**	**0.0000**	**0.7750**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3300e-003	0.0152	9.5100e-003	2.0000e-005		7.4000e-004	7.4000e-004		6.8000e-004	6.8000e-004	0.0000	1.4304	1.4304	4.2000e-004	0.0000	1.4392
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3300e-003**	**0.0152**	**9.5100e-003**	**2.0000e-005**		**7.4000e-004**	**7.4000e-004**		**6.8000e-004**	**6.8000e-004**	**0.0000**	**1.4304**	**1.4304**	**4.2000e-004**	**0.0000**	**1.4392**

3.5 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	5.7000e-004	5.8900e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.7739	0.7739	5.0000e-005	0.0000	0.7750
Total	**3.0000e-004**	**5.7000e-004**	**5.8900e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.7739**	**0.7739**	**5.0000e-005**	**0.0000**	**0.7750**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0156					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0107	8.4800e-003	1.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	1.1490	1.1490	1.4000e-004	0.0000	1.1518
Total	**0.0173**	**0.0107**	**8.4800e-003**	**1.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.8000e-004**	**8.8000e-004**	**0.0000**	**1.1490**	**1.1490**	**1.4000e-004**	**0.0000**	**1.1518**

3.6 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	5.7000e-004	5.8900e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.7739	0.7739	5.0000e-005	0.0000	0.7750
Total	**3.0000e-004**	**5.7000e-004**	**5.8900e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.7739**	**0.7739**	**5.0000e-005**	**0.0000**	**0.7750**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0156					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0107	8.4800e-003	1.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	1.1490	1.1490	1.4000e-004	0.0000	1.1518
Total	**0.0173**	**0.0107**	**8.4800e-003**	**1.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.8000e-004**	**8.8000e-004**	**0.0000**	**1.1490**	**1.1490**	**1.4000e-004**	**0.0000**	**1.1518**

3.6 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	5.7000e-004	5.8900e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.7739	0.7739	5.0000e-005	0.0000	0.7750
Total	**3.0000e-004**	**5.7000e-004**	**5.8900e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.7739**	**0.7739**	**5.0000e-005**	**0.0000**	**0.7750**

3.7 Hauled Water Delivery Trips - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Hauled Water Delivery Trips - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0300e-003	0.0226	0.0258	8.0000e-005	1.8300e-003	4.1000e-004	2.2300e-003	5.0000e-004	3.7000e-004	8.7000e-004	0.0000	7.0352	7.0352	5.0000e-005	0.0000	7.0362
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0300e-003**	**0.0226**	**0.0258**	**8.0000e-005**	**1.8300e-003**	**4.1000e-004**	**2.2300e-003**	**5.0000e-004**	**3.7000e-004**	**8.7000e-004**	**0.0000**	**7.0352**	**7.0352**	**5.0000e-005**	**0.0000**	**7.0362**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Hauled Water Delivery Trips - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0300e-003	0.0226	0.0258	8.0000e-005	1.8300e-003	4.1000e-004	2.2300e-003	5.0000e-004	3.7000e-004	8.7000e-004	0.0000	7.0352	7.0352	5.0000e-005	0.0000	7.0362
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0300e-003**	**0.0226**	**0.0258**	**8.0000e-005**	**1.8300e-003**	**4.1000e-004**	**2.2300e-003**	**5.0000e-004**	**3.7000e-004**	**8.7000e-004**	**0.0000**	**7.0352**	**7.0352**	**5.0000e-005**	**0.0000**	**7.0362**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0101	0.0302	0.1578	2.7000e-004	0.0195	3.1000e-004	0.0198	5.1900e-003	2.9000e-004	5.4800e-003	0.0000	21.4804	21.4804	1.1800e-003	0.0000	21.5052
Unmitigated	0.0101	0.0302	0.1578	2.7000e-004	0.0195	3.1000e-004	0.0198	5.1900e-003	2.9000e-004	5.4800e-003	0.0000	21.4804	21.4804	1.1800e-003	0.0000	21.5052

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	10.00	10.00	10.00	51,699	51,699
Total	10.00	10.00	10.00	51,699	51,699

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	16.00	16.00	16.00	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.488044	0.071100	0.171983	0.163629	0.062769	0.009916	0.004878	0.011869	0.001121	0.001035	0.007693	0.000708	0.005255

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3.4526	3.4526	8.0000e-005	2.0000e-005	3.4595
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4.0629	4.0629	1.0000e-004	2.0000e-005	4.0711
NaturalGas Mitigated	1.5000e-004	1.2600e-003	5.4000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4625	1.4625	3.0000e-005	3.0000e-005	1.4714
NaturalGas Unmitigated	1.6000e-004	1.3700e-003	5.8000e-004	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5903	1.5903	3.0000e-005	3.0000e-005	1.6000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	29800.9	1.6000e-004	1.3700e-003	5.8000e-004	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5903	1.5903	3.0000e-005	3.0000e-005	1.6000
Total		**1.6000e-004**	**1.3700e-003**	**5.8000e-004**	**1.0000e-005**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**1.5903**	**1.5903**	**3.0000e-005**	**3.0000e-005**	**1.6000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	27406.5	1.5000e-004	1.2600e-003	5.4000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4625	1.4625	3.0000e-005	3.0000e-005	1.4714
Total		**1.5000e-004**	**1.2600e-003**	**5.4000e-004**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**1.4625**	**1.4625**	**3.0000e-005**	**3.0000e-005**	**1.4714**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	7294.75	4.0629	1.0000e-004	2.0000e-005	4.0711
Total		**4.0629**	**1.0000e-004**	**2.0000e-005**	**4.0711**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	6198.95	3.4526	8.0000e-005	2.0000e-005	3.4595
Total		**3.4526**	**8.0000e-005**	**2.0000e-005**	**3.4595**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0163	9.0000e-005	7.5300e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0121	0.0121	1.0000e-005	0.0000	0.0124
Unmitigated	0.0221	9.0000e-005	7.5300e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0121	0.0121	1.0000e-005	0.0000	0.0124

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.2600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0156					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.4000e-004	9.0000e-005	7.5300e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0121	0.0121	1.0000e-005	0.0000	0.0124
Total	**0.0221**	**9.0000e-005**	**7.5300e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0121**	**0.0121**	**1.0000e-005**	**0.0000**	**0.0124**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.5600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.4000e-004	9.0000e-005	7.5300e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0121	0.0121	1.0000e-005	0.0000	0.0124
Total	**0.0163**	**9.0000e-005**	**7.5300e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0121**	**0.0121**	**1.0000e-005**	**0.0000**	**0.0124**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.6801	2.1400e-003	5.0000e-005	0.7416
Unmitigated	0.7474	2.1400e-003	5.0000e-005	0.8089

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.065154 / 0.0410754	0.7474	2.1400e-003	5.0000e-005	0.8089
Total		**0.7474**	**2.1400e-003**	**5.0000e-005**	**0.8089**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.065154 / 0.0328603	0.6801	2.1400e-003	5.0000e-005	0.7416
Total		**0.6801**	**2.1400e-003**	**5.0000e-005**	**0.7416**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2497	0.0148	0.0000	0.5596
Unmitigated	0.2497	0.0148	0.0000	0.5596

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	1.23	0.2497	0.0148	0.0000	0.5596
Total		**0.2497**	**0.0148**	**0.0000**	**0.5596**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	1.23	0.2497	0.0148	0.0000	0.5596
Total		**0.2497**	**0.0148**	**0.0000**	**0.5596**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

1012-055 Single-Family Residential Hauled Water Initiative for New Development

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1.00	Dwelling Unit	4.00	4,000.00	3

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2016
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2016 operation year will give worst case scenario

Land Use - Assume 4000 SF floor area of Residence.
Estimated population based on floor plan of proposed residence.
Assume 4 acre average lot size.

Construction Phase - Construction scenario has 14 months total. No demo, but a hypothetical demo added here to represent the hauled water delivery trips.

Off-road Equipment - Estimated air compressor time to 2 hrs/day.

Trips and VMT - Construction scenario based off of Kumar Single Family Residence Project
Site Prep: 5 worker trips, 10 hauling trips
Grading: 5 worker trips, 10 hauling trips
Building Construction: 20 worker trips, 30 vendor trips, 10 hauling trips
Paving: 5 worker trips
AC: 5 worker trips

Hauled water trips from Fehr and Peers report- Assume full build out on hauled water delivery trips with 134 trucks per day with each traveling 31.8 roundtrip miles.

On-road Fugitive Dust - 25mph mean vehicle speed

Architectural Coating - Low VOC estimate

Off-road Equipment - Construction scenario based off of Kumar Single Family Residence Project
1 dozer for 5 days at 8 hr/day = 40 hrs/65 days site prep =0.6 hrs/day
1 backhoe for 10 days at 8hr/day = 80 hrs/ 65 days site prep =1.2 hr/day

Off-road Equipment - Construction scenario based off of Kumar Single Family Residence Project
1 dozer for 5 days at 8hr/day = 40 hrs/ 90 days grading = .44 hr/day
1 grader for 5 days at 8hr/day = 40 hrs/ 90 days grading = .44 hr/day
1 bobcat for 5 days at 8hr/day = 40 hrs/90 days grading = .44 hr/day

Off-road Equipment - Based off Kumar single family residence construction scenario:
3 dump trucks for 10 days at 8 hr/day = 80 hr/180 days construction = 0.44 hr/day
12 concrete off-highway trucks for 5 days at 8 hr/day = 40 hr/180 days construction for =0.22 hr/day
30 vendor trips to deliver materials. 30 truck trips to deliver material is estimated at 2 trucks/day at 2 hr/day
Added one backhoe/tractor for an hour/day. Added one forklift for an hour/day. Added one generator set for an hour/day.

Off-road Equipment - Estimated an hour/day for cement mixer, paving equipment, and surfacing eqiupment for a total of 30 hours per equipment type

Off-road Equipment -

Grading - 36% disturbance from MFR 2 (4 acres *.36=1.44 acres disturbed)

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Solid Waste -

Area Mitigation - Low VOC used

Energy Mitigation - Assumed to exceed title 24 energy standards by 10%. Install high efficiency lighting to get a 50% lighting energy reduction.

Water Mitigation - Low flow faucets, toilets, and showers assumed. Assume water conservation strategy for outdoor landscaping equal to ~20% reduction.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00

tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	50
tblConstructionPhase	NumDays	18.00	27.00
tblConstructionPhase	NumDays	230.00	158.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	8.00	93.00
tblConstructionPhase	NumDays	18.00	27.00
tblConstructionPhase	NumDays	5.00	65.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	2.33	1.44
tblGrading	AcresOfGrading	0.00	1.44
tblLandUse	LandUseSquareFeet	1,800.00	4,000.00
tblLandUse	LotAcreage	0.32	4.00
tblOffRoadEquipment	HorsePower	167.00	208.00
tblOffRoadEquipment	HorsePower	253.00	125.00
tblOffRoadEquipment	LoadFactor	0.40	0.43
tblOffRoadEquipment	LoadFactor	0.30	0.42
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.40
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.40
tblOffRoadEquipment	UsageHours	8.00	0.60
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.40
tblOffRoadEquipment	UsageHours	8.00	1.20
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOnRoadDust	MeanVehicleSpeed	40.00	25.00
tblOnRoadDust	MeanVehicleSpeed	40.00	25.00
tblOnRoadDust	MeanVehicleSpeed	40.00	25.00
tblOnRoadDust	MeanVehicleSpeed	40.00	25.00
tblOnRoadDust	MeanVehicleSpeed	40.00	25.00
tblOnRoadDust	MeanVehicleSpeed	40.00	25.00

tblProjectCharacteristics	OperationalYear	2014	2016
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	MeanVehicleSpeed	40	25
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	134.00
tblTripsAndVMT	HaulingVehicleClass		HHDT
tblTripsAndVMT	VendorTripNumber	0.00	30.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00
tblTripsAndVMT	WorkerTripNumber	0.00	5.00
tblVehicleTrips	HO_TL	7.90	16.00
tblVehicleTrips	HS_TL	7.10	16.00
tblVehicleTrips	HW_TL	16.80	16.00
tblVehicleTrips	ST_TR	10.08	10.00
tblVehicleTrips	SU_TR	8.77	10.00
tblVehicleTrips	WD_TR	9.57	10.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	0.1818	1.6739	1.7928	2.0900e-003	0.5417	0.0919	0.6336	0.2685	0.0845	0.3530	0.0000	202.7221	202.7221	0.0401	0.0000	203.5639
2016	1.3067	11.3122	10.2266	0.0191	0.4322	0.4236	0.8558	0.1848	0.3947	0.5123	0.0000	1,867.3864	1,867.3864	0.2971	0.0000	1,873.6247
Total	**1.4885**	**12.9861**	**12.0193**	**0.0212**	**0.9739**	**0.5155**	**1.4894**	**0.4533**	**0.4793**	**0.8653**	**0.0000**	**2,070.1085**	**2,070.1085**	**0.3372**	**0.0000**	**2,077.1886**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	0.1818	1.6739	1.7928	2.0900e-003	0.2804	0.0919	0.3722	0.1305	0.0845	0.2151	0.0000	202.7221	202.7221	0.0401	0.0000	203.5639
2016	1.3067	11.3122	10.2266	0.0191	0.4322	0.4236	0.8558	0.1176	0.3947	0.5123	0.0000	1,867.3864	1,867.3864	0.2971	0.0000	1,873.6247
Total	**1.4885**	**12.9861**	**12.0193**	**0.0212**	**0.7126**	**0.5155**	**1.2281**	**0.2481**	**0.4793**	**0.7273**	**0.0000**	**2,070.1085**	**2,070.1085**	**0.3372**	**0.0000**	**2,077.1886**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**26.83**	**0.00**	**17.55**	**45.27**	**0.00**	**15.94**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1225	9.8000e-004	0.0837	0.0000		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004		0.1486	0.1486	1.5000e-004		0.1517
Energy	8.8000e-004	7.5200e-003	3.2000e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004		9.6055	9.6055	1.8000e-004	1.8000e-004	9.6639
Mobile	0.0604	0.1514	0.9620	1.6000e-003	0.1090	1.7300e-003	0.1107	0.0290	1.5800e-003	0.0306		141.0881	141.0881	7.1600e-003		141.2385
Total	**0.1838**	**0.1599**	**1.0488**	**1.6500e-003**	**0.1090**	**2.7900e-003**	**0.1118**	**0.0290**	**2.6400e-003**	**0.0317**		**150.8421**	**150.8421**	**7.4900e-003**	**1.8000e-004**	**151.0541**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0904	9.8000e-004	0.0837	0.0000		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004		0.1486	0.1486	1.5000e-004		0.1517
Energy	8.1000e-004	6.9200e-003	2.9400e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8337	8.8337	1.7000e-004	1.6000e-004	8.8875
Mobile	0.0604	0.1514	0.9620	1.6000e-003	0.1090	1.7300e-003	0.1107	0.0290	1.5800e-003	0.0306		141.0881	141.0881	7.1600e-003		141.2385
Total	**0.1516**	**0.1593**	**1.0486**	**1.6400e-003**	**0.1090**	**2.7400e-003**	**0.1117**	**0.0290**	**2.5900e-003**	**0.0316**		**150.0704**	**150.0704**	**7.4800e-003**	**1.6000e-004**	**150.2776**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**17.51**	**0.38**	**0.02**	**0.61**	**0.00**	**1.79**	**0.04**	**0.00**	**1.89**	**0.16**	**0.00**	**0.51**	**0.51**	**0.13**	**11.11**	**0.51**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/1/2015	12/15/2015	6	65	
2	Grading	Grading	12/16/2015	4/1/2016	6	93	
3	Building Construction	Building Construction	4/2/2016	10/3/2016	6	158	
4	Paving	Paving	10/4/2016	11/3/2016	6	27	
5	Architectural Coating	Architectural Coating	11/4/2016	12/5/2016	6	27	
6	Hauled Water Delivery Trips	Demolition	12/6/2016	12/30/2016	6	22	

Acres of Grading (Site Preparation Phase): 1.44

Acres of Grading (Grading Phase): 1.44

Acres of Paving: 0

Residential Indoor: 8,100; Residential Outdoor: 2,700; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	0.60	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	1.20	97	0.37
Grading	Graders	1	0.40	174	0.41
Grading	Rubber Tired Dozers	1	0.40	255	0.40
Grading	Tractors/Loaders/Backhoes	1	0.40	97	0.37
Building Construction	Dumpers/Tenders	3	0.40	16	0.38
Building Construction	Forklifts	1	1.00	89	0.20
Building Construction	Generator Sets	1	1.00	84	0.74
Building Construction	Off-Highway Trucks	12	0.20	400	0.38
Building Construction	Other Material Handling Equipment	2	2.00	208	0.43
Building Construction	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Building Construction	Welders	1	1.00	46	0.45
Paving	Cement and Mortar Mixers	1	1.00	9	0.56
Paving	Paving Equipment	1	1.00	130	0.36
Paving	Surfacing Equipment	1	1.00	125	0.42
Architectural Coating	Air Compressors	1	2.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	10.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	5.00	0.00	10.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	21	20.00	30.00	10.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Hauled Water Delivery Trips	0			134.00	16.80	6.60	31.80			HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4752	0.0000	0.4752	0.2508	0.0000	0.2508			0.0000			0.0000
Off-Road	0.1495	1.5939	1.1871	1.1300e-003		0.0906	0.0906		0.0834	0.0834		119.1680	119.1680	0.0356		119.9151
Total	**0.1495**	**1.5939**	**1.1871**	**1.1300e-003**	**0.4752**	**0.0906**	**0.5658**	**0.2508**	**0.0834**	**0.3342**		**119.1680**	**119.1680**	**0.0356**		**119.9151**

3.2 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.5600e-003	0.0379	0.0422	1.1000e-004	2.6900e-003	6.7000e-004	3.3600e-003	7.4000e-004	6.2000e-004	1.3500e-003		11.4422	11.4422	8.0000e-005		11.4439
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0287	0.0421	0.5635	8.4000e-004	0.0639	5.6000e-004	0.0644	0.0169	5.1000e-004	0.0175		72.1120	72.1120	4.4300e-003		72.2049
Total	**0.0322**	**0.0800**	**0.6057**	**9.5000e-004**	**0.0666**	**1.2300e-003**	**0.0678**	**0.0177**	**1.1300e-003**	**0.0188**		**83.5541**	**83.5541**	**4.5100e-003**		**83.6488**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2138	0.0000	0.2138	0.1129	0.0000	0.1129			0.0000			0.0000
Off-Road	0.1495	1.5939	1.1871	1.1300e-003		0.0906	0.0906		0.0834	0.0834	0.0000	119.1680	119.1680	0.0356		119.9151
Total	**0.1495**	**1.5939**	**1.1871**	**1.1300e-003**	**0.2138**	**0.0906**	**0.3045**	**0.1129**	**0.0834**	**0.1963**	**0.0000**	**119.1680**	**119.1680**	**0.0356**		**119.9151**

3.2 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.5600e-003	0.0379	0.0422	1.1000e-004	2.6900e-003	6.7000e-004	3.3600e-003	7.4000e-004	6.2000e-004	1.3500e-003		11.4422	11.4422	8.0000e-005		11.4439
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0287	0.0421	0.5635	8.4000e-004	0.0639	5.6000e-004	0.0644	0.0169	5.1000e-004	0.0175		72.1120	72.1120	4.4300e-003		72.2049
Total	**0.0322**	**0.0800**	**0.6057**	**9.5000e-004**	**0.0666**	**1.2300e-003**	**0.0678**	**0.0177**	**1.1300e-003**	**0.0188**		**83.5541**	**83.5541**	**4.5100e-003**		**83.6488**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3175	0.0000	0.3175	0.1673	0.0000	0.1673			0.0000			0.0000
Off-Road	0.1348	1.4344	0.9191	9.1000e-004		0.0776	0.0776		0.0713	0.0713		95.9243	95.9243	0.0286		96.5257
Total	**0.1348**	**1.4344**	**0.9191**	**9.1000e-004**	**0.3175**	**0.0776**	**0.3951**	**0.1673**	**0.0713**	**0.2386**		**95.9243**	**95.9243**	**0.0286**		**96.5257**

3.3 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.4900e-003	0.0265	0.0295	8.0000e-005	9.9000e-003	4.7000e-004	0.0104	2.4800e-003	4.3000e-004	2.9200e-003		7.9972	7.9972	6.0000e-005		7.9984
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0287	0.0421	0.5635	8.4000e-004	0.0639	5.6000e-004	0.0644	0.0169	5.1000e-004	0.0175		72.1120	72.1120	4.4300e-003		72.2049
Total	**0.0311**	**0.0686**	**0.5930**	**9.2000e-004**	**0.0738**	**1.0300e-003**	**0.0748**	**0.0194**	**9.4000e-004**	**0.0204**		**80.1092**	**80.1092**	**4.4900e-003**		**80.2033**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1429	0.0000	0.1429	0.0753	0.0000	0.0753			0.0000			0.0000
Off-Road	0.1348	1.4344	0.9191	9.1000e-004		0.0776	0.0776		0.0713	0.0713	0.0000	95.9243	95.9243	0.0286		96.5257
Total	**0.1348**	**1.4344**	**0.9191**	**9.1000e-004**	**0.1429**	**0.0776**	**0.2204**	**0.0753**	**0.0713**	**0.1466**	**0.0000**	**95.9243**	**95.9243**	**0.0286**		**96.5257**

3.3 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.4900e-003	0.0265	0.0295	8.0000e-005	9.9000e-003	4.7000e-004	0.0104	2.4800e-003	4.3000e-004	2.9200e-003		7.9972	7.9972	6.0000e-005		7.9984
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0287	0.0421	0.5635	8.4000e-004	0.0639	5.6000e-004	0.0644	0.0169	5.1000e-004	0.0175		72.1120	72.1120	4.4300e-003		72.2049
Total	**0.0311**	**0.0686**	**0.5930**	**9.2000e-004**	**0.0738**	**1.0300e-003**	**0.0748**	**0.0194**	**9.4000e-004**	**0.0204**		**80.1092**	**80.1092**	**4.4900e-003**		**80.2033**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3175	0.0000	0.3175	0.1673	0.0000	0.1673			0.0000			0.0000
Off-Road	0.1299	1.3753	0.8913	9.1000e-004		0.0740	0.0740		0.0680	0.0680		94.8258	94.8258	0.0286		95.4265
Total	**0.1299**	**1.3753**	**0.8913**	**9.1000e-004**	**0.3175**	**0.0740**	**0.3915**	**0.1673**	**0.0680**	**0.2353**		**94.8258**	**94.8258**	**0.0286**		**95.4265**

3.3 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3500e-003	0.0225	0.0284	8.0000e-005	2.1300e-003	4.1000e-004	2.5400e-003	5.8000e-004	3.8000e-004	9.5000e-004		7.9047	7.9047	5.0000e-005		7.9059
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0252	0.0378	0.5068	8.4000e-004	0.0639	5.3000e-004	0.0644	0.0169	4.8000e-004	0.0174		69.5517	69.5517	4.0500e-003		69.6368
Total	**0.0275**	**0.0602**	**0.5352**	**9.2000e-004**	**0.0660**	**9.4000e-004**	**0.0669**	**0.0175**	**8.6000e-004**	**0.0184**		**77.4564**	**77.4564**	**4.1000e-003**		**77.5427**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1429	0.0000	0.1429	0.0753	0.0000	0.0753			0.0000			0.0000
Off-Road	0.1299	1.3753	0.8913	9.1000e-004		0.0740	0.0740		0.0680	0.0680	0.0000	94.8258	94.8258	0.0286		95.4265
Total	**0.1299**	**1.3753**	**0.8913**	**9.1000e-004**	**0.1429**	**0.0740**	**0.2169**	**0.0753**	**0.0680**	**0.1433**	**0.0000**	**94.8258**	**94.8258**	**0.0286**		**95.4265**

3.3 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3500e-003	0.0225	0.0284	8.0000e-005	2.1300e-003	4.1000e-004	2.5400e-003	5.8000e-004	3.8000e-004	9.5000e-004		7.9047	7.9047	5.0000e-005		7.9059
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0252	0.0378	0.5068	8.4000e-004	0.0639	5.3000e-004	0.0644	0.0169	4.8000e-004	0.0174		69.5517	69.5517	4.0500e-003		69.6368
Total	**0.0275**	**0.0602**	**0.5352**	**9.2000e-004**	**0.0660**	**9.4000e-004**	**0.0669**	**0.0175**	**8.6000e-004**	**0.0184**		**77.4564**	**77.4564**	**4.1000e-003**		**77.5427**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8291	8.9051	4.0306	9.6200e-003		0.3865	0.3865		0.3606	0.3606		982.0356	982.0356	0.2766		987.8435
Total	**0.8291**	**8.9051**	**4.0306**	**9.6200e-003**		**0.3865**	**0.3865**		**0.3606**	**0.3606**		**982.0356**	**982.0356**	**0.2766**		**987.8435**

3.4 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3800e-003	0.0132	0.0167	5.0000e-005	1.1100e-003	2.4000e-004	1.3500e-003	3.0000e-004	2.2000e-004	5.3000e-004		4.6528	4.6528	3.0000e-005		4.6535
Vendor	0.3394	2.2429	4.1520	6.0500e-003	0.1757	0.0348	0.2104	0.0495	0.0320	0.0815		602.4913	602.4913	4.2500e-003		602.5805
Worker	0.1006	0.1510	2.0272	3.3600e-003	0.2555	2.1100e-003	0.2576	0.0678	1.9300e-003	0.0697		278.2067	278.2067	0.0162		278.5472
Total	**0.4414**	**2.4072**	**6.1960**	**9.4600e-003**	**0.4322**	**0.0371**	**0.4694**	**0.1176**	**0.0341**	**0.1517**		**885.3508**	**885.3508**	**0.0205**		**885.7811**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8291	8.9051	4.0306	9.6200e-003		0.3865	0.3865		0.3606	0.3606	0.0000	982.0356	982.0356	0.2766		987.8435
Total	**0.8291**	**8.9051**	**4.0306**	**9.6200e-003**		**0.3865**	**0.3865**		**0.3606**	**0.3606**	**0.0000**	**982.0356**	**982.0356**	**0.2766**		**987.8435**

3.4 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3800e-003	0.0132	0.0167	5.0000e-005	1.1100e-003	2.4000e-004	1.3500e-003	3.0000e-004	2.2000e-004	5.3000e-004		4.6528	4.6528	3.0000e-005		4.6535
Vendor	0.3394	2.2429	4.1520	6.0500e-003	0.1757	0.0348	0.2104	0.0495	0.0320	0.0815		602.4913	602.4913	4.2500e-003		602.5805
Worker	0.1006	0.1510	2.0272	3.3600e-003	0.2555	2.1100e-003	0.2576	0.0678	1.9300e-003	0.0697		278.2067	278.2067	0.0162		278.5472
Total	**0.4414**	**2.4072**	**6.1960**	**9.4600e-003**	**0.4322**	**0.0371**	**0.4694**	**0.1176**	**0.0341**	**0.1517**		**885.3508**	**885.3508**	**0.0205**		**885.7811**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0987	1.1238	0.7044	1.1500e-003		0.0547	0.0547		0.0504	0.0504		116.7989	116.7989	0.0340		117.5125
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0987**	**1.1238**	**0.7044**	**1.1500e-003**		**0.0547**	**0.0547**		**0.0504**	**0.0504**		**116.7989**	**116.7989**	**0.0340**		**117.5125**

3.5 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0252	0.0378	0.5068	8.4000e-004	0.0639	5.3000e-004	0.0644	0.0169	4.8000e-004	0.0174		69.5517	69.5517	4.0500e-003		69.6368
Total	**0.0252**	**0.0378**	**0.5068**	**8.4000e-004**	**0.0639**	**5.3000e-004**	**0.0644**	**0.0169**	**4.8000e-004**	**0.0174**		**69.5517**	**69.5517**	**4.0500e-003**		**69.6368**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0987	1.1238	0.7044	1.1500e-003		0.0547	0.0547		0.0504	0.0504	0.0000	116.7989	116.7989	0.0340		117.5125
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0987**	**1.1238**	**0.7044**	**1.1500e-003**		**0.0547**	**0.0547**		**0.0504**	**0.0504**	**0.0000**	**116.7989**	**116.7989**	**0.0340**		**117.5125**

3.5 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0252	0.0378	0.5068	8.4000e-004	0.0639	5.3000e-004	0.0644	0.0169	4.8000e-004	0.0174		69.5517	69.5517	4.0500e-003		69.6368
Total	**0.0252**	**0.0378**	**0.5068**	**8.4000e-004**	**0.0639**	**5.3000e-004**	**0.0644**	**0.0169**	**4.8000e-004**	**0.0174**		**69.5517**	**69.5517**	**4.0500e-003**		**69.6368**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.1588					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1228	0.7907	0.6280	9.9000e-004		0.0655	0.0655		0.0655	0.0655		93.8160	93.8160	0.0111		94.0483
Total	**1.2816**	**0.7907**	**0.6280**	**9.9000e-004**		**0.0655**	**0.0655**		**0.0655**	**0.0655**		**93.8160**	**93.8160**	**0.0111**		**94.0483**

3.6 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0252	0.0378	0.5068	8.4000e-004	0.0639	5.3000e-004	0.0644	0.0169	4.8000e-004	0.0174		69.5517	69.5517	4.0500e-003		69.6368
Total	**0.0252**	**0.0378**	**0.5068**	**8.4000e-004**	**0.0639**	**5.3000e-004**	**0.0644**	**0.0169**	**4.8000e-004**	**0.0174**		**69.5517**	**69.5517**	**4.0500e-003**		**69.6368**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.1588					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1228	0.7907	0.6280	9.9000e-004		0.0655	0.0655		0.0655	0.0655	0.0000	93.8160	93.8160	0.0111		94.0483
Total	**1.2816**	**0.7907**	**0.6280**	**9.9000e-004**		**0.0655**	**0.0655**		**0.0655**	**0.0655**	**0.0000**	**93.8160**	**93.8160**	**0.0111**		**94.0483**

3.6 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0252	0.0378	0.5068	8.4000e-004	0.0639	5.3000e-004	0.0644	0.0169	4.8000e-004	0.0174		69.5517	69.5517	4.0500e-003		69.6368
Total	**0.0252**	**0.0378**	**0.5068**	**8.4000e-004**	**0.0639**	**5.3000e-004**	**0.0644**	**0.0169**	**4.8000e-004**	**0.0174**		**69.5517**	**69.5517**	**4.0500e-003**		**69.6368**

3.7 Hauled Water Delivery Trips - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.7 Hauled Water Delivery Trips - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1740	1.9333	1.9942	7.0000e-003	0.1692	0.0368	0.2060	0.0464	0.0339	0.0802		705.4522	705.4522	4.6900e-003		705.5507
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total	**0.1740**	**1.9333**	**1.9942**	**7.0000e-003**	**0.1692**	**0.0368**	**0.2060**	**0.0464**	**0.0339**	**0.0802**		**705.4522**	**705.4522**	**4.6900e-003**		**705.5507**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.7 Hauled Water Delivery Trips - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1740	1.9333	1.9942	7.0000e-003	0.1692	0.0368	0.2060	0.0464	0.0339	0.0802		705.4522	705.4522	4.6900e-003		705.5507
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total	**0.1740**	**1.9333**	**1.9942**	**7.0000e-003**	**0.1692**	**0.0368**	**0.2060**	**0.0464**	**0.0339**	**0.0802**		**705.4522**	**705.4522**	**4.6900e-003**		**705.5507**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0604	0.1514	0.9620	1.6000e-003	0.1090	1.7300e-003	0.1107	0.0290	1.5800e-003	0.0306		141.0881	141.0881	7.1600e-003		141.2385
Unmitigated	0.0604	0.1514	0.9620	1.6000e-003	0.1090	1.7300e-003	0.1107	0.0290	1.5800e-003	0.0306		141.0881	141.0881	7.1600e-003		141.2385

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	10.00	10.00	10.00	51,699	51,699
Total	10.00	10.00	10.00	51,699	51,699

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	16.00	16.00	16.00	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.488044	0.071100	0.171983	0.163629	0.062769	0.009916	0.004878	0.011869	0.001121	0.001035	0.007693	0.000708	0.005255

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	8.1000e-004	6.9200e-003	2.9400e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8337	8.8337	1.7000e-004	1.6000e-004	8.8875
NaturalGas Unmitigated	8.8000e-004	7.5200e-003	3.2000e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004		9.6055	9.6055	1.8000e-004	1.8000e-004	9.6639

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	81.6464	8.8000e-004	7.5200e-003	3.2000e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004		9.6055	9.6055	1.8000e-004	1.8000e-004	9.6639
Total		**8.8000e-004**	**7.5200e-003**	**3.2000e-003**	**5.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**		**9.6055**	**9.6055**	**1.8000e-004**	**1.8000e-004**	**9.6639**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0.0750864	8.1000e-004	6.9200e-003	2.9400e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8337	8.8337	1.7000e-004	1.6000e-004	8.8875
Total		**8.1000e-004**	**6.9200e-003**	**2.9400e-003**	**4.0000e-005**		**5.6000e-004**	**5.6000e-004**		**5.6000e-004**	**5.6000e-004**		**8.8337**	**8.8337**	**1.7000e-004**	**1.6000e-004**	**8.8875**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0904	9.8000e-004	0.0837	0.0000		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004		0.1486	0.1486	1.5000e-004		0.1517
Unmitigated	0.1225	9.8000e-004	0.0837	0.0000		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004		0.1486	0.1486	1.5000e-004		0.1517

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0343					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0856					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.6300e-003	9.8000e-004	0.0837	0.0000		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004		0.1486	0.1486	1.5000e-004		0.1517
Total	**0.1225**	**9.8000e-004**	**0.0837**	**0.0000**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**		**0.1486**	**0.1486**	**1.5000e-004**		**0.1517**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.0792					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.6300e-003	9.8000e-004	0.0837	0.0000		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004		0.1486	0.1486	1.5000e-004		0.1517
Architectural Coating	8.5700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0904**	**9.8000e-004**	**0.0837**	**0.0000**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**		**0.1486**	**0.1486**	**1.5000e-004**		**0.1517**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix I

Biological Resources Technical Report

SINGLE-FAMILY RESIDENTIAL HAULED WATER INITIATIVE FOR NEW DEVELOPMENT

BIOLOGICAL RESOURCES TECHNICAL REPORT

Prepared for:

Los Angeles County Hauled Water Task Force
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December 30, 2015

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The proposed Single-Family Residential Hauled Water Initiative for New Development (proposed initiative) would allow up to 42,867 parcels, comprising 340,461 acres or approximately 532 square miles to use hauled water as a source of potable water during the building permit application process. The reasonable worst-case scenario assumes the annual average rate of issuance of building permits over the 20-year 2015 to 2035 planning horizon would be approximately 32 per year in the Santa Clarita Valley and approximately 152 per year in the Antelope Valley for a total of 184 permits per year for both areas. The total anticipated building permits over the 20-year 2015 to 2035 planning horizon would be approximately 3,680. The forecast for the 20-year 2015 to 2035 planning horizon predicted that the issuance of building permits within subareas would range from zero to 1,251 parcels over the 20-year period (Table ES-1, *20-Year 2015 to 2035 Forecasted Parcel Development*).

TABLE ES-1
20-YEAR 2015 TO 2035 FORECASTED PARCEL DEVELOPMENT

Castaic/ Santa Clarita Agua Dulce	Acton	Lake Hughes/ Gorman/ West of Lancaster	Lake Los Angeles/ Llano/ Valyermo/ Littlerock	Antelope Valley Northeast	Lancaster Northeast	East San Gabriel Mountains
Forecasted Development (Percentage of Parcels within Subarea)						
735 of 2,243 parcels (33%)	737 of 1,246 parcels (59%)	847 of 15,166 parcels (6%)	1,251 of 14,822 parcels (8%)	0 of 1,938 parcels (0%)	110 of 6,794 parcels (2%)	0 of 658 parcels (0%)

An analysis of a small subset of parcels in each subarea was performed in order to determine potential impacts from hauled water infrastructure including a storage tank, a septic leach field, and access for hauled water delivery vehicles. Based on the analysis it was determined that the average area of disturbance for each parcel was approximately 36 percent. The average size of lots analyzed was 4 acres.[1] Based on this analysis, potential impacts to biological resources were determined. The proposed initiative has the potential to result in significant impacts on biological resources related to five of the six thresholds articulated in Appendix G of the California Environmental Quality Act Guidelines (State CEQA Guidelines): federally or State-listed rare, threatened, and endangered species; State-designated sensitive plant communities and riparian habitats; federally protected wetlands; wildlife movement corridors; and potential conflicts with local policies and ordinances.

[1] Sapphos Environmental, Inc. 27 August 2014. Memorandum for the Record. Subject: "Analysis of Residential Development and Existing Disturbance for Parcels within or near the Proposed Hauled Water Initiative Study Area." Prepared for: Los Angeles County Hauled Water Task Force.

LISTED AND SENSITIVE PLANTS AND ANIMALS

There are 27 listed or candidate species, 75 sensitive or rare species, and 14 locally important species with the potential to be impacted by the proposed initiative. The number of listed species present within any given subarea ranges from six to 20. Critical habitat present within the proposed initiative subareas varies from 0 to 99 percent. Critical habitat may potentially be disturbed in two subareas: Castaic/Santa Clarita/Agua Dulce and Acton (Table ES-2, *Potential Impacts to Biological Resources*). The number of other sensitive plants and wildlife species present within any given subarea ranges from 12 to 49. The number of locally important species present within any given subarea ranges from three to 12. These numbers represent the maximum number of species and areas of critical habitat that could be impacted by the proposed initiative. The forecast can only predict how many parcels would be issued building permits, not which parcels would be developed; therefore, it is assumed that all impacts listed above have the potential to occur.

TABLE ES-2
POTENTIAL IMPACTS TO BIOLOGICAL RESOURCES

Subarea	Number of Parcels Forecasted for Development	Percentage of Area	Number of Affected Parcels	Acres of Potential Development	Acres of Potential Disturbance
Critical Habitat					
C	735	5%	37	147.0	53
A	737	0.1%	1	2.9	1
LH	847	0%	0	0	0
LL	1,251	0%	0	0	0
AV	0	99%	0	0	0
LN	110	0%	0	0	0
SG	0	2%	0	0	0
Total Study Area	**3,680**	**5%**	**184**	**736.0**	**265.0**
State-sensitive Plant Communities					
C	735	27%	198	794	286
A	737	9%	66	265	96
LH	847	44%	373	1,491	537
LL	1,251	51%	638	2,552	919
AV	0	97%	0	0	0
LN	110	22%	24	97	35
SG	0	68%	0	0	0
Total Study Area	**3,680**	**43%**	**1,582**	**6,330**	**2,279**
Riparian Habitat					
C	735	1%	7	29	11
A	737	6%	44	177	64
LH	847	8%	68	271	98
LL	1,251	14%	175	700	252
AV	0	5%	0	0	0
LN	110	62%	68	273	98
SG	0	13%	0	0	0
Total Study Area	**3,680**	**15%**	**552**	**2,208.0**	**795**

TABLE ES-2
POTENTIAL IMPACTS TO BIOLOGICAL RESOURCES, *Continued*

Subarea	Number of Parcels Forecasted for Development	Percentage of Area	Number of Affected Parcels	Acres of Potential Development	Acres of Potential Disturbance
State Jurisdictional Areas					
C	735	2%	15	59	21
A	737	2%	15	59	21
LH	847	1%	8	34	12
LL	1,251	3%	38	150	54
AV	0	4%	0	0	0
LN	110	4%	4	18	6
SG	0	5%	0	0	0
Total Study Area	**3,680**	**2%**	**74**	**294**	**106**
Federal Wetlands and Waterways					
C	735	2%	15	59	21
A	737	1%	7	30	11
LH	847	0.2%	2	7	2
LL	1,251	0%	0	0	0
AV	0	0%	0	0	0
LN	110	0%	0	0	0
SG	0	4%	0	0	0
Total Study Area	**3,680**	**0.4%**	**16**	**62**	**22**
Significant Ecological Areas					
C	735	42%	309	1,235	445
A	737	20%	147	590	212
LH	847	35%	296	1,186	427
LL	1,251	46%	575	2,302	829
AV	0	0%	0	0	0
LN	110	66%	73	290	105
SG	0	12%	0	0	0
Total Study Area	**3,680**	**43%**	**1,582**	**6,330**	**2,279**

KEY: C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains.

RIPARIAN COMMUNITIES AND STATE-DESIGNATED SENSITIVE HABITAT

There is potential for the presence of 59 State-designated plant communities that may be impacted by the proposed initiative. The number of State-designated plant communities that may be impacted within any given subarea ranges from 16 to 40 (covering 9 to 97 percent of total acreage per subarea) (Table ES-2). State-sensitive plant communities have the potential to be disturbed in five of the seven subareas and acres of disturbance ranges from 35 to 919 acres across subareas (Table ES-2). The number of riparian plant communities that may be impacted within any given subarea ranges from 13 to 30 (covering 1 to 62 percent of total acreage per subarea). Riparian habitat the potential to be disturbed in five of the seven subareas and acres of disturbance ranges from 11 to 252 acres across subareas (Table ES-2). The total acreage that may be classified as State Jurisdictional Areas that may be impacted within any given subarea ranges from 2 to 5 percent of total acreage per subarea. State Jurisdictional Areas have the potential to be disturbed in five of the seven subareas and acres of disturbance ranges from 6 to 54 acres across subareas (Table ES-2).

FEDERAL "WATERS OF THE UNITED STATES"

Federal "Waters of the United States" potentially subject to U.S. Army Corps of Engineers (USACOE) jurisdiction are present within the proposed initiative study area. The total acreage that may be classified as of federal wetlands and waterways that may be impacted within any given subarea ranges from 0 to 4 percent of subareas (Table ES-2). The linear miles of federal blue-line drainages that may be impacted within each subarea range from 0 to 125 miles. Federal wetlands and waterways have the potential to be disturbed in three of the seven subareas and acres of disturbance ranges from 2 to 21 acres across subareas (Table ES-2).

MIGRATORY CORRIDORS AND NURSERY SITES

Migratory corridors are potentially present within all proposed initiative subareas and may experience impacts from the proposed initiative. With the exception of the Antelope Valley Northeast, all subareas fall within existing Significant Ecological Areas (which often indicate wildlife corridors) to some degree (12–66 percent) (Table ES-2). SEAs have the potential to be disturbed in five of the seven subareas and acres of disturbance ranges from 105 to 829 acres across subareas (Table ES-2). Nesting birds protected by the Migratory Bird Treaty Act (MBTA) have the potential to be present on all parcels within the proposed initiative subareas.

GENERAL PLANS AND POLICIES

The proposed initiative would result in conflicts with local polices or ordinances protecting biological resources because of allowable development in currently undeveloped locations. Facilitating development throughout the study area has the potential to conflict with up to 14 local policies protecting biological resources that are relevant to the proposed initiative. The proposed initiative is not expected to conflict with the Los Angeles County Oak Tree Ordinance or the Hillside Management and Significant Ecological Areas Ordinance. The proposed initiative is not expected to conflict with the provisions of applicable Community Standards Districts.

HABITAT CONSERVATION PLANS AND NATURAL COMMUNITY CONSERVATION PLANS

The proposed initiative would not result in impacts to biological resources in relation to a conflict with an applicable HCP or NCCP. Approximately 50 percent of the Acton subarea, 100 percent of the Antelope Valley Northeast subarea, and approximately 80 percent of the Lake Hughes/Gorman/West of Lancaster subarea are within the Desert Renewable Energy Conservation Plan (DRECP). The DRECP is a proposed multispecies HCP intended to conserve threatened and endangered species and natural communities in the Mojave and Colorado Desert regions of Southern California. However, the DRECP only applies to the development of renewable energy projects. Similarly, the same areas of the proposed initiative parcels are located within the West Mojave Plan HCP. However, the West Mojave Plan HCP does not apply to the proposed initiative because potential hauled water parcels are not located on federal lands and the initiative would not trigger a federal nexus.[2,3]

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[2] California Department of Fish and Wildlife. Natural Community Conservation Planning (NCCP). Website accessed, November 24, 2014. Available online at http://www.dfg.ca.gov/habcon/nccp/.

[3] Renewable Energy Action Team. Desert Renewable Energy Conservation Plan. Website accessed, November 24,2014. Available online at: http://www.drecp.org/

SECTION 1.0
INTRODUCTION

This Biological Resources Technical Report (BRTR) has been prepared to provide information related to the consideration of the proposed initiative. This analysis was undertaken to determine if the proposed initiative would result in adverse significant impacts related to biological resources, requiring the consideration of mitigation measures or alternatives in accordance with Appendix G of the State CEQA Guidelines.[1] For the purpose of this analysis, a study area was established consisting of 42,867 parcels where development of a single-family home is an allowable use, subject to issuance of a building permit. The study area comprises approximately 535 square miles within the unincorporated territory of the Los Angeles County (County). An unknown portion of these parcels could be developed in the absence of the proposed initiative, if the property owner were able to demonstrate the ability to develop a groundwater well to provide potable water consistent with the County standards established pursuant to the building permit application. The proposed initiative would potentially allow development of parcels that could otherwise not be developed, through the allowed use of hauled water as the primary source of potable water. This report evaluates the potential impacts to biological resources associated with parcels that would potentially be eligible for development through the use of hauled water to support development of a single-family residence pursuant to the proposed initiative. The evaluation of impacts is based on information contained in published and unpublished literature, databases, review of current and historic maps and aerial photographs to characterize the existing conditions in relation to biological resources, and modeling of potential development to estimate the potential level of development. The evaluation also considered the policies, goals, and objectives of the adopted and proposed land use planning documents for the study area: the Land Use Element and Conservation and Natural Resources Element of the Los Angeles County General Plan 2035,[2] the 2015 Antelope Valley Areawide Plan – Town & Country,[3] and the 2012 Santa Clarita Valley Area Plan.[4]

DEFINITIONS

Listed Species include those species listed as rare, threatened, or endangered pursuant to the federal and State Endangered Species Acts (ESAs).

Sensitive Species include (1) species of Special Concern (SSC) that have been designated by the California Department of Fish and Wildlife (CDFW), (2) rare plants, (3) special-status animals designated by the California Natural Diversity Database (CNDDB), and (4) locally important species.

Species of Special Concern are species, subspecies, or distinct population of an animal (bird, mammal, fish, reptile, and amphibian) native to California that currently satisfies one or more of the following criteria: (a) is extirpated from the State or, in the case of birds, in its primary seasonal

[1] California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[2] Los Angeles County Department of Regional Planning. Adopted 6 October 2015. Los Angeles County 2035 General Plan: Chapter 9: Conservation and Natural Resources Element Available online at: http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch6.pdf

[3] Los Angeles County Department of Regional Planning. Adopted 16 June 2015. Antelope Valley Area Plan – Town & Country: A Component of the Los Angeles County General Plan. Available at: http://planning.lacounty.gov/tnc

[4] Los Angeles County, Santa Clarita Valley Area Plan, 2012. PDF available online at: http://planning.lacounty.gov/assets/upl/data/pd_santa-clarita-area-plan-2012.pdf

or breeding role; (b) is listed as federally, but not State-, threatened or endangered; (c) meets the State definition of threatened or endangered but has not formally been listed; (d) is experiencing, or formerly experienced, serious (non-cyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State-threatened or endangered status; (e) has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State-threatened or endangered status.

Locally Important species include those not listed pursuant to the State or federal ESA or designated as SSC by CDFW, but otherwise identified as sensitive species that should be considered in assessing the potential effects of proposed projects. These include those plant species designated as rare by the California Native Plant Society (CNPS) (Rare Plant Rank 1A, 1B, 2A, 2B, 3, or 4).[5] This designation includes those species listed on the California Special Animals list that are not otherwise covered by other regulations.[6] It also includes species afforded protection by the County General Plan, such as some native trees.

Critical Habitat is a designated area defined by the U.S. Fish and Wildlife Services (USFWS) as being important for the survival of species listed pursuant to the federal ESA. The USFWS evaluates the collection of the environmental conditions (i.e., plant communities, range, elevation, food source, etc.) essential to the continued conservation and preservation of each species listed as federally threatened and endangered.

Sensitive Plant Community is a native plant community listed on CDFW Natural Communities List as being rare within California or threatened by human actions.

Waters of the United States are defined as surface waters such as navigable waters and their tributaries, all interstate waters and their tributaries, natural lakes, all wetlands adjacent to other waters, and all impoundments of these waters. On April 21, 2014, the U.S. Environmental Protection Agency (EPA) proposed to refine the definition of waters of the United States to include all tributaries of traditional navigable waters, interstate waters, territorial seas, and impoundments of such tributaries; wetlands adjacent to the foregoing; and waters other than wetlands that are adjacent to other jurisdictional waters.[7]

Federal Wetlands are defined by the USACOE and the EPA as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."[8]

State Wetlands/Streams are defined by the California Fish and Game Code. A *stream* is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. *Wetlands* are defined as areas having riparian vegetation, without regard to wetland vegetation, soils, or hydrology.

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[5] California Native Plant Society. 2014. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Available online at: http://www.rareplants.cnps.org

[6] California Department of Fish and Game, Biogeographic Data Branch. Accessed December 2014. Rarefind 5: A Database Application for the Use of the California Department of Fish and Game Natural Diversity Database. Sacramento, CA.

[7] Federal Register. Vol. 79, No. 76, 21 April 2014. Proposed Rules. Available online at: http://www.gpo.gov/fdsys/pkg/FR-2014-04-21/pdf/2014-07142.pdf

[8] U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetland Delineation Manual. Vicksburg, MS.

Nursery Site is considered habitat in which native wildlife may establish nests, maternity roosts, dens, or otherwise engage in breeding and/or the rearing of offspring.

Wildlife Movement Corridors are characterized as areas of habitat that are used by wildlife for the purpose of moving between locations.

Natural Community Conservation Plan (NCCP) is defined by CDFW as a plan for the conservation of natural communities that identifies and provides for the regional or area wide protection and perpetuation of plants, animals, and their habitats.

Habitat Conservation Plans (HCPs) are required by the USFWS as part of an application for an "incidental take" permit for species listed pursuant to the federal ESA. HCPs describe the anticipated effects of the proposed taking, how the impacts will be minimized and mitigated, and how the HCP is to be funded.

Significant Ecological Areas The SEA Program is a component of the Conservation/Open Space Element of the County of Los Angeles General Plan. This program is a resource identification tool that indicates the existence of important biological resources. SEAs are not preserves, but are areas where the county deems it important to facilitate a balance between limited development and resource conservation. Limited development activities are reviewed closely in these areas where site design is a key element in conserving fragile resources such as streams, oak woodlands and threatened or endangered species and their habitat.

SECTION 2.0
PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The proposed initiative would apply to the entirety of Los Angeles County. However, the area that would be affected by the proposed initiative, as determined by the County's GIS model, consists of 42,867 parcels in the unincorporated territory of Los Angeles County (see Figure 2.1-1, *Proposed Initiative Study Area*, at the end of this section).[1] The combined proposed initiative study area consists of approximately 340,461 acres or approximately 532 square miles.

Although this is a Countywide initiative, the parcels that would potentially be affected by the proposed initiative are located entirely within the 5th Supervisorial District in the northern one-third of the County, including areas located in the San Gabriel Mountains, in the Antelope Valley; areas located northeast of the City of Santa Clarita, north and south of California State Route 14; and areas that are southwest of the City of Palmdale in the communities of Agua Dulce and Acton. The subject parcels have been categorized into seven subareas:

1. **Lake Hughes/Gorman/West of Lancaster:** The Lake Hughes/Gorman/West of Lancaster subarea is located in an area generally located west of State Highway 14 and north of the Angeles National Forest. This subarea consists of 15,166 parcels and encompasses approximately 195.4 square miles (125,041.4 acres). State Highway 138 bisects the subarea in an east-west direction, and State Highway 14 forms the eastern boundary of this subarea. This subarea is adjacent to the northwestern edge of the incorporated City of Lancaster.

2. **Lancaster Northeast:** The Lancaster Northeast subarea is located in an area generally east of State Highway 14 and north of East Avenue J. This subarea consists of 6,794 parcels and encompasses approximately 55.2 square miles (35,324.90 acres). State Highway 14 forms the western boundary and East Avenue J forms the southern boundary of this subarea. Edwards Air Force Base is located north of the study area. This subarea is adjacent to the northeastern edge of the incorporated City of Lancaster.

3. **Antelope Valley Northeast:** The Antelope Valley Northeast subarea is located in an area generally located north of East Avenue E and east of 165th Street East in the far northeastern portion of Los Angeles County. This subarea consists of 1,938 parcels and encompasses approximately 22.7 square miles (14,528.23 acres). This subarea is relatively isolated and is located in the northeastern area of Los Angeles County. This subarea is located approximately 10.9 miles northeast of the incorporated City of Palmdale and approximately 11.3 miles northeast of the incorporated City of Lancaster.

[1] Assessor's Parcels Numbers for the referenced parcels are on file at the Los Angeles County Department of Regional Planning.

4. **Lake Los Angeles/Llano/Valyermo/Littlerock:** The Lake Los Angeles/Llano/Valyermo/Littlerock subarea is located in an area generally south of East Avenue J, east of 47th Street East. This subarea consists of 14,822 parcels and encompasses approximately 168.8 square miles (108,067.33 acres). Avenue J forms the northern boundary, the Cities of Palmdale and Lancaster form the western boundary, and the San Bernardino County line forms the eastern boundary of this subarea. This subarea is adjacent to the eastern edge of the incorporated City of Palmdale.

5. **Acton:** The Acton subarea is located in an area generally east of Hubbard Road and West of 47th Street East. This subarea consists of 1,246 parcels and encompasses approximately 28.2 square miles (18,067.22 acres). The Angeles National Forest is located to the north and south of the subarea. This subarea is adjacent to the southwestern edge of the incorporated City of Palmdale.

6. **Castaic/Santa Clarita/Agua Dulce:** The Castaic/Santa Clarita/Agua Dulce subarea is located generally west of Hubbard Road and north of the 210 Freeway excluding Kagel Canyon. This subarea consists of 2,243 parcels and encompasses approximately 55.2 square miles (35,340.2 acres). This subarea is adjacent to the northern, western, and southern edges of the incorporated City of Santa Clarita and the northern edge of the incorporated City of Los Angeles.

7. **East San Gabriel Mountains:** The East San Gabriel Mountains subarea consists of parcels generally located within the Angeles National Forest east of State Highway 14, north of the 210 Freeway, south of the Pearblossom Highway, and west of the San Bernardino County line. This subarea consists of 658 parcels and encompasses approximately 6.4 square miles (4,092.26 acres). This subarea is adjacent to the northern edges of the San Gabriel and San Fernando Valleys.

The proposed initiative study area is located within 53 USGS 7.5-minute quadrangle maps (see Figure 2.1-2, *USGS 7.5-Minute Quadrangle Index*, at the end of this section):

- Acton
- Adobe Mountain
- Agua Dulce
- Alpine Butte
- Azusa
- Black Mountain
- Burnt Peak
- Chilao Flat
- Condor Peak
- Crystal Lake
- Del Sur
- El Mirage
- Fairmont Butte
- Frazier Mountain
- Glendora
- Green Valley
- Hi Vista
- Jackrabbit Hill
- Juniper Hills
- La Liebre Ranch
- Lake Hughes
- Lancaster East
- Lancaster West
- Lebec
- Liebre Mountain
- Little Buttes
- Littlerock
- Lovejoy Buttes
- Mescal Creek
- Mint Canyon
- Mount Baldy
- Mount San Antonio
- Mount Wilson
- Neenach School
- Newhall
- Oat Mountain
- Pacifico Mountain
- Palmdale
- Pasadena
- Redman
- Ritter Ridge
- Rogers Lake South
- Rosamond
- Rosamond Lake
- San Fernando
- Simi Valley East
- Sleepy Valley
- Sunland
- Val Verde
- Valyermo
- Warm Springs Mountain
- Waterman Mountain
- Whitaker Peak

The elevation of the overall proposed initiative study area ranges from 7,409 feet above sea level in the East San Gabriel Mountains subarea to 862 feet above sea level also in the East San Gabriel Mountains subarea (see Figure 2.1-3, *Topographic Map*, at the end of this section).

2.2 EXISTING CONDITIONS

2.2.1 Lake Hughes/Gorman/West of Lancaster

The Lake Hughes/Gorman/West of Lancaster subarea is located in an area generally west of State Highway 14 and north of the Angeles National Forest; however, there are also several National Forest inholding parcels located along San Francisquito Canyon and Lake Hughes Road. The topography of this subarea is generally flat, except for the parcels located along San Francisquito Canyon and Lake Hughes Road, which are located in mountainous terrain. The highest elevation within this subarea is approximately 4,768 feet above mean sea level (MSL), and the lowest elevation is approximately 2,315 feet above MSL. State Highway 14 provides access to the subarea from the east, and Interstate 5 provides access to the subarea from the west. The main existing land uses in this subarea are agriculture and rural residential uses. The established communities of Del

Sur, Gorman, Lake Hughes, Leona Valley, and Quartz Hill are located in this subarea. The Angeles National Forest surrounds 39 private inholding parcels within this subarea. The parcels that are located within National Forest boundaries are private inholdings that have been designated in the 2005 update to the *Angeles National Forest Land Management Plan* as Non-Forest System Land Ownership and therefore are not subject to the national land management plan.[2,3] Three Significant Ecological Areas (SEAs) (approximately 44,093.7 acres) intersect with the subject parcels within this subarea and are subject to the provisions of the 1982 Hillside Management and Significant Ecological Areas Ordinance: Joshua Tree Woodland, San Andreas, and Santa Clara River.[4,5]

2.2.2 Lancaster Northeast

The Lancaster Northeast subarea is located in an area generally east of State Highway 14 and north of East Avenue J. The topography of this subarea is generally flat; the highest elevation within this subarea is approximately 2,688 feet above MSL, and the lowest elevation is approximately 2,298 feet above MSL. State Highway 14 provides access to the subarea from the west. The predominant existing land uses in this subarea consist of agricultural, recreation, and rural residential uses. The established communities of Hi Vista and a small portion of Del Sur are located in this subarea. One SEA (approximately 23,278 acres) intersects with the subject parcels within this subarea: Antelope Valley.[6,7]

2.2.3 Antelope Valley Northeast

The Antelope Valley Northeast subarea is located in an area generally north of East Avenue E and east of 165th Street East in the far northeastern portion of Los Angeles County. The topography of this subarea is mainly flat, with a few hills to the north. The highest elevation within this subarea is approximately 3,296 feet above MSL, and the lowest elevation is approximately 2,547 feet above MSL. There are no existing primary access roads to the area; however, East Avenue G provides access to the area from the Lancaster area. Presently, the entirety of this subarea is vacant. Saddleback Butte State Park is located to the south of the subarea. A small portion of the established community of Hi Vista is located in this subarea. One SEA (approximately 10,870.5 acres) intersects with the subject parcels within this subarea: Antelope Valley.[8,9]

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[2] United States Department of Agriculture Forest Service, Angeles National Forest. April 2006. Record of Decision, Angeles National Forest Land Management Plan. Available online at: http://www.fs.usda.gov/detail/angeles/landmanagement/planning/?cid=stelprdb5324056#I

[3] United States Department of Agriculture Forest Service. September 2005. Final Land Management Plan Alternative 4a Selected: Land Use Zones [Map]. Available online at: http://www.fs.usda.gov/Internet/FSE_MEDIA/stelprdb5311720.pdf

[4] Los Angeles County Department of Regional Planning. Accessed 4 November 2015. SEA Program: SEA Ordinance. Available online at: http://planning.lacounty.gov/sea/ordinance

[5] Los Angeles County Department of Regional Planning. Adopted 16 June 2015. Antelope Valley Area Plan – Town & Country: A Component of the Los Angeles County General Plan. Available at: http://planning.lacounty.gov/tnc

[6] Los Angeles County Department of Regional Planning. Accessed 4 November 2015. SEA Program: SEA Ordinance. Available online at: http://planning.lacounty.gov/sea/ordinance

[7] Los Angeles County Department of Regional Planning. Adopted 16 June 2015. Antelope Valley Area Plan – Town & Country: A Component of the Los Angeles County General Plan. Available at: http://planning.lacounty.gov/tnc

[8] Los Angeles County Department of Regional Planning. Accessed 4 November 2015. SEA Program: SEA Ordinance. Available online at: http://planning.lacounty.gov/sea/ordinance

[9] Los Angeles County Department of Regional Planning. Adopted 16 June 2015. Antelope Valley Area Plan – Town & Country: A Component of the Los Angeles County General Plan. Available at: http://planning.lacounty.gov/tnc

2.2.4 Lake Los Angeles/Llano/Valyermo/Littlerock

The Lake Los Angeles/Llano/Valyermo/Littlerock subarea is located in an area generally south of East Avenue J, east of 47th Street East. The topography of this subarea is generally flat, except for several parcels that are located on slopes of the San Gabriel Mountains to the south. The highest elevation within this subarea is approximately 5,626 feet above MSL, and the lowest elevation is approximately 2,443 feet above MSL. State Highways 138 and 18 provide the primary access to this subarea. Predominant existing land uses within this subarea consist of vacant land, single-family residential subdivisions, agricultural uses, and scattered rural residential uses. The Angeles National Forest forms the southern border of this subarea. The established communities of Llano, Valyermo, Pearblossom, Littlerock, Lake Los Angeles and portions of Hi Vista are located within this subarea. One SEA (approximately 49,384.1 acres) intersects with the subject parcels within this subarea: Antelope Valley.[10,11]

2.2.5 Acton

The Acton subarea is located in an area generally east of Hubbard Road and West of 47th Street East. The topography of the subarea is mainly mountainous and hilly. The highest elevation within this subarea is approximately 4,900 feet above MSL, and the lowest elevation is approximately 2,290 feet above MSL. State Highway 14 provides the primary access to this subarea. Predominant existing land uses consist of rural residential uses, single-family residential uses, and scattered agricultural uses. The Angeles National Forest forms the southern border of this subarea. The established communities of Acton, South Antelope Valley, and portions of Agua Dulce are located in this subarea. One SEA (approximately 3,684.5 acres) intersects with the subject parcels within this subarea: Santa Clara River.[12,13]

2.2.6 Castaic/Santa Clarita/Agua Dulce

The Castaic/Santa Clarita/Agua Dulce subarea is located generally west of Hubbard Road and north of the 210 Freeway excluding Kagel Canyon. The topography of this subarea is generally mountainous. The highest elevation within this subarea is approximately 4,430 feet above MSL, and the lowest elevation is approximately 994 feet above MSL. Interstate 5 and State Highway 14 are the primary access roads for this subarea. Additionally, State Highway 126 provides access to areas in the western portion of the subarea. Predominant existing land uses consist of rural residential, single-family residential, and scattered agricultural. The Angeles National Forest forms the northern and southern borders of this subarea. The established communities of Agua Dulce, Castaic Val Verde, Stevenson Ranch, Newhall, Canyon Country, and portions of Acton are located within this subarea. Four SEAs (approximately 14,922.4 acres) intersect with the subject parcels

[10] Los Angeles County Department of Regional Planning. Accessed 4 November 2015. SEA Program: SEA Ordinance. Available online at: http://planning.lacounty.gov/sea/ordinance

[11] Los Angeles County Department of Regional Planning. Adopted 16 June 2015. Antelope Valley Area Plan – Town & Country: A Component of the Los Angeles County General Plan. Available at: http://planning.lacounty.gov/tnc

[12] Los Angeles County Department of Regional Planning. Accessed 4 November 2015. SEA Program: SEA Ordinance. Available online at: http://planning.lacounty.gov/sea/ordinance

[13] Los Angeles County Department of Regional Planning. Adopted 16 June 2015. Antelope Valley Area Plan – Town & Country: A Component of the Los Angeles County General Plan. Available online at: http://planning.lacounty.gov/tnc

within this subarea: Santa Clara River, Santa Felicia, Cruzan Mesa Vernal Pools, Santa Susana Mountains/Simi Hills.[14,15]

2.2.7 East San Gabriel Mountains

The East San Gabriel Mountains subarea consists mainly of private inholding parcels located within the eastern San Gabriel Mountain range and is generally located east of State Highway 14, north of the 210 Freeway, south of the Pearblossom Highway, and west of the San Bernardino County line. The topography of the subarea is very mountainous. The highest elevation within this subarea is approximately 7,409 feet above MSL, and the lowest elevation is approximately 862 feet above MSL. Primary access to this subarea is provided by Mount Baldy Road, San Gabriel Canyon Road (Highway 39), Angeles Crest Highway (Highway 2), Big Tujunga Canyon Road, and Little Tujunga Canyon Road from the 210 Freeway to the south and Soledad Canyon Road and Big Pines Road from the north. Predominant existing land uses consist of National Forest recreation, open space, and resource uses; widely scattered residential uses exist in places such as Wrightwood and Mt. Baldy Village. Communication infrastructure uses are located on Mount Wilson. The Angeles National Forest surrounds all 658 private inholding parcels within this subarea, which have been designated in the 2005 update to the Angeles National Forest Land Management Plan as Non-Forest System Land Ownership and therefore are not subject to the national land management plan.[16,17] The established communities of Angeles National Forest, Altadena, Sylmar, and portions of Acton, Valyermo, Pearblossom, Llano, and Littlerock are located in this subarea. Five SEAs (approximately 561 acres) intersect with the subject parcels within this subarea: Antelope Valley, Santa Clara River, San Dimas Canyon/San Antonio Wash, Altadena Foothills and Arroyos, San Gabriel Canyon.[18,19]

2.3 PROJECT DESCRIPTION

The Los Angeles County Board of Supervisors has directed the preparation of a proposed ordinance that would allow hauled water as the primary source of potable water for new development of single-family residences on existing vacant legal lots, or lots that are eligible for a certificate of compliance, where the property owner has demonstrated that there is no other feasible source of private or municipal potable water, or capability of developing an on-site well to provide potable water to the property, and only if the property lies outside of the boundaries of the local private and municipal water districts, and is not eligible for service by the nearest public-community water purveyor. The proposed initiative is proposed for parcels that consists of at least 2,000 square feet

[14] Los Angeles County Department of Regional Planning. Accessed 4 November 2015. SEA Program: SEA Ordinance. Available online at: http://planning.lacounty.gov/sea/ordinance

[15] Los Angeles County Department of Regional Planning. Adopted 16 June 2015. Antelope Valley Area Plan – Town & Country: A Component of the Los Angeles County General Plan. Available online at: http://planning.lacounty.gov/tnc

[16] United States Department of Agriculture Forest Service, Angeles National Forest. April 2006. Record of Decision, Angeles National Forest Land Management Plan. Available at: http://www.fs.usda.gov/detail/angeles/landmanagement/planning/?cid=stelprdb5324056#I.

[17] United States Department of Agriculture Forest Service. September 2005. Final Land Management Plan Alternative 4a Selected: Land Use Zones [Map]. Available at: http://www.fs.usda.gov/Internet/FSE_MEDIA/stelprdb5311720.pdf

[18] Los Angeles County Department of Regional Planning. Accessed 4 November 2015. SEA Program: SEA Ordinance. Available online at: http://planning.lacounty.gov/sea/ordinance

[19] Los Angeles County Department of Regional Planning. Adopted 16 June 2015. Antelope Valley Area Plan – Town & Country: A Component of the Los Angeles County General Plan. Available at: http://planning.lacounty.gov/tnc

net parcel size of land under 50 percent average slope (26.6 degrees). The term vacant is used as identified by the County Assessor.

In order to determine which areas would be subject to the proposed initiative, Los Angeles County developed a geographic information system (GIS) suitability model in 2012 based on five criteria defined by the Task Force:

- Parcels located in the unincorporated territory of Los Angeles County
- Vacant parcels
- Parcels located in areas where there is no designated water purveyor
- Zoning and General Plan designation that allow for development of a single-family residence
- Parcel size >2,000 net square feet with slopes under 50 percent (26.6 degrees)

The model was re-run in 2015 to incorporate the recently adopted Antelope Valley Town and Country Plan and General Plan amendment.[20]

2.4 CONSTRUCTION SCENARIO

The proposed initiative would not authorize construction of single-family residential development per se. It simply provides for the use of hauled water as an allowable source of potable water during the building permit application process where the property is not located within a public or private water district and where potable water for domestic and fire protection requirements cannot be provided by an on-site groundwater well. To determine historical development trends, 17 years of building permit application data from 1997 through 2014 were reviewed to determine the average number of building permits issued per year for single-family residential development not associated with subdivision development.[21] An anticipated growth factor of 25 percent has been applied based on Southern California Association of Governments (SCAG) projections for the unincorporated area of Los Angeles County from 2008 to 2035.[22]

The reasonable worst-case scenario assumes the annual average rate of issuance of building permits over the 20-year 2015 to 2035 planning horizon would be approximately 32 per year in the Santa Clarita Valley and approximately 151 per year in the Antelope Valley for a total of 184 permits per year for both areas. The total anticipated building permits issued over the 20-year 2015 to 2035 planning horizon would be approximately 3,680. As a result, it is anticipated that the disturbance area for the single-family residences constructed on these parcels would be approximately 5,299 acres (Table 2.4-1, *Estimated Number of Parcels to Be Developed and Disturbance Area in the Unincorporated Antelope Valley and Santa Clarita Valley, 2015–2035*).

[20] Los Angeles County Department of Regional Planning. Adopted 6 October 2015. Los Angeles County 2035 General Plan: Chapter 6: Land Use Element. Available online at: planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch6.pdf

[21] County Building and Safety Division building permit records have been digitally tracked since 1997; records were not readily available from before 1997.

[22] Southern California Association of Governments. 12 March 2012. 2012 Adopted RTP Growth Forecast. Available online at: http://www.scag.ca.gov/Documents/2012AdoptedGrowthForecastPDF.pdf

TABLE 2.4-1
ESTIMATED NUMBER OF PARCELS TO BE DEVELOPED AND DISTURBANCE AREA IN THE UNINCORPORATED ANTELOPE VALLEY AND SANTA CLARITA VALLEY, 2015–2035*

Estimated Annual Santa Clarita Valley Building Permits	Estimated Annual Antelope Valley Building Permits	Total Estimated Annual Building Permits** in Unincorporated Santa Clarita and Antelope Valleys[1]	Total Estimated Building Permits over 20-Year Planning Horizon	Total Estimated Disturbance Area over 20-Year Planning Horizon (acres)***
32	151	184	3,680	5,299

NOTES:
* Includes a 25 percent growth factor based on SCAG population projections.[2]
** Including mobile homes.
*** Based on an average parcel size of four acres with 36 percent disturbance.[3]

SOURCE:
[1] Los Angeles County Department of Public Works, Building and Safety Division. Electronic Building Permit Data from January 1, 1997 to June 30, 2014.
[2] Southern California Association of Governments. 12 March 2012. 2012 Adopted RTP Growth Forecast. Available online at: http://www.scag.ca.gov/Documents/2012AdoptedGrowthForecastPDF.pdf
[3] Sapphos Environmental, Inc. 27 August 2014. Memorandum for the Record. Subject: "Analysis of Residential Development and Existing Disturbance for Parcels within or near the Proposed Hauled Water Initiative Study Area." Prepared for: Los Angeles County Hauled Water Task Force.

An analysis of a small subset of parcels in each subarea was performed in order to determine potential impacts from hauled water infrastructure including a storage tank, a septic leach field, and access for hauled water delivery vehicles. Based on the analysis it was determined that the average area of disturbance for each parcel was approximately 36 percent. The average size of lots analyzed was four gross acres (Table 2.4-1).

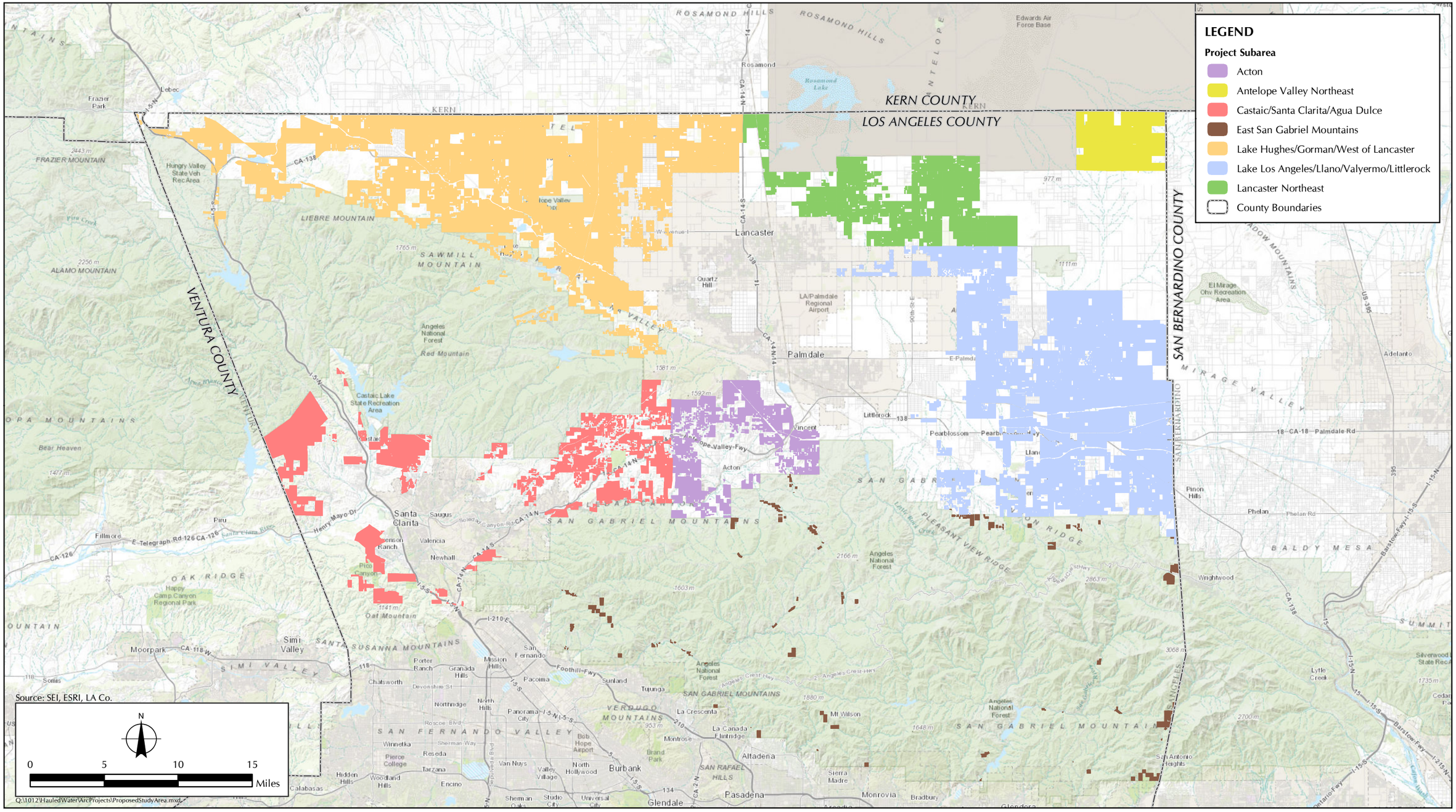

FIGURE 2.1-1

Proposed Initiative Study Area

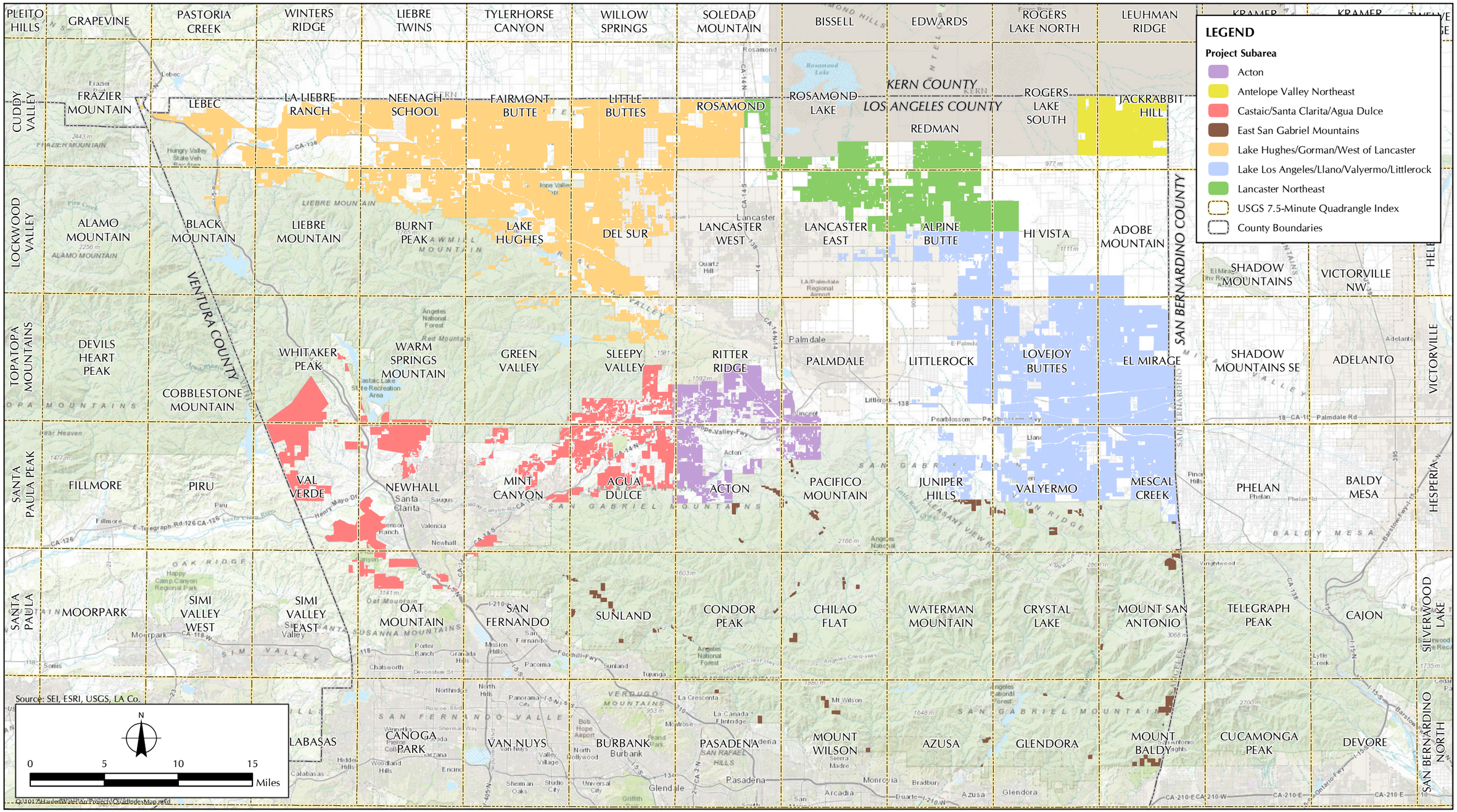

FIGURE 2.1-2

USGS 7.5-Minute Quadrangle Index

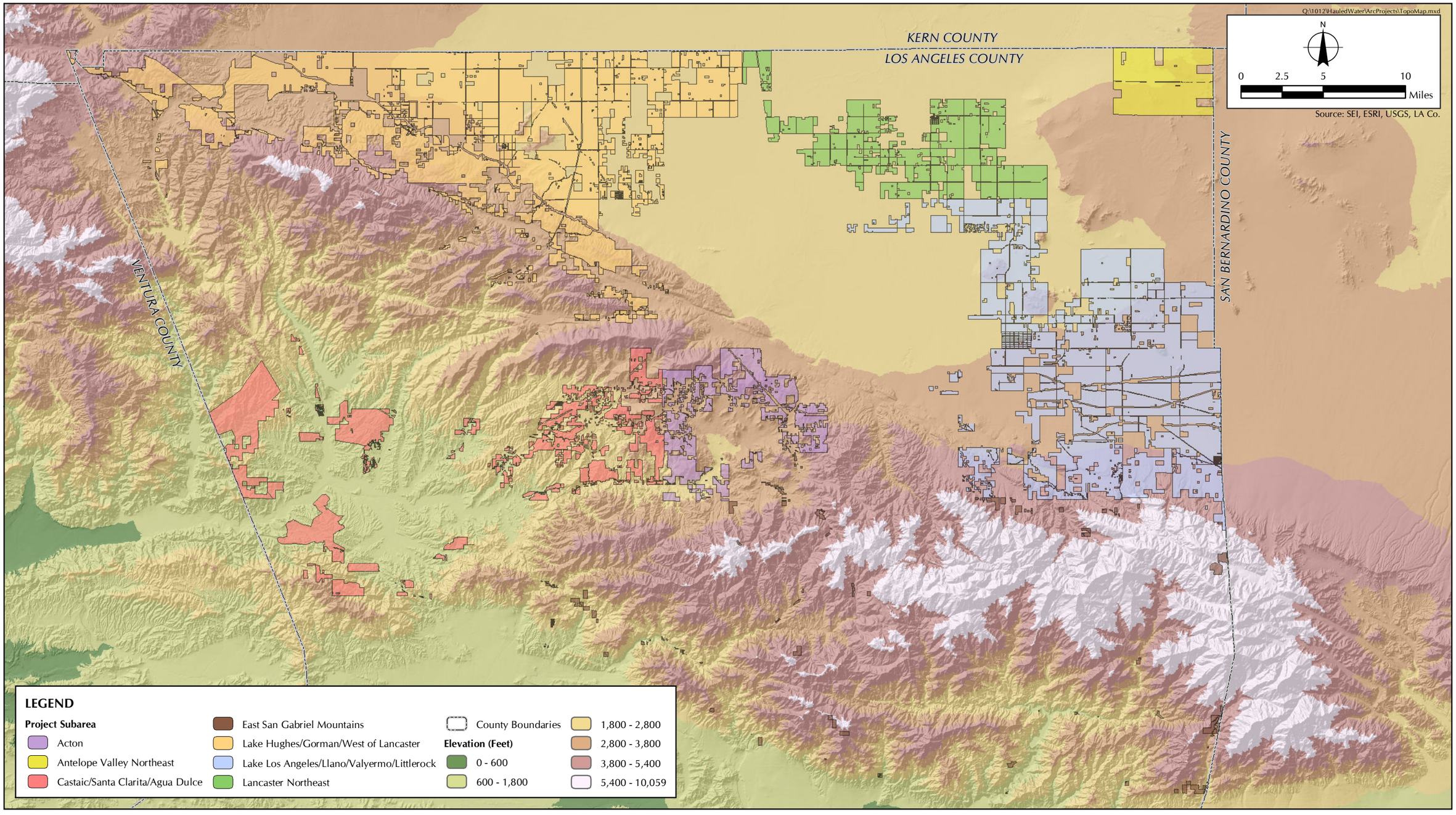

FIGURE 2.1-3

Topographic Map

SECTION 3.0
REGULATORY FRAMEWORK

The potential for the proposed initiative to result in significant impacts to biological resources was evaluated in light of the applicable federal, State, and local statutes and regulations that afford protection to rare, threatened, and endangered species; waters of the State and Waters of the United States; special categories of species, including migratory birds, fur-bearing mammals, and mature oak and walnut trees; and lands afforded long-term conservation.

3.1 FEDERAL

3.1.1 Federal Endangered Species Act

The federal ESA defines listed species as "endangered" or "threatened" and provides regulatory protection for listed species. The federal ESA provides a program for conservation and recovery of threatened and endangered species; it also ensures the conservation of designated critical habitat that the USFWS has determined is required for the survival and recovery of these listed species. Section 9 of the federal ESA prohibits the "take" of species listed by USFWS as threatened or endangered. Take is defined as follows: "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in such conduct." In recognition that take cannot always be avoided, Section 10(a) of the federal ESA includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. Section 10(a)(1)(B) permits (incidental take permits) may be issued if take is incidental and does not jeopardize the survival and recovery of the species. As defined in the federal ESA, individuals, organizations, states, local governments, and other nonfederal entities are affected by the designation of critical habitat only if their actions occur on federal lands; require a federal permit, license, or other authorization; or involve federal funding.[1]

Compliance with the applicable provisions of the Federal Endangered Species Act, in relation to the development of a property using hauled water as the source of potable water, would be the sole responsibility of the property owner.

3.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) makes it unlawful to pursue, capture, kill, or possess any migratory bird or part, nest, or egg of any such bird listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and Russia (formerly the Soviet Union).[2] Similar to the federal ESA, the MBTA authorizes the Secretary of the Interior to issue permits for incidental take.

Compliance with the applicable provisions of the MBTA, in relation to the development of a property using hauled water as the source of potable water, would be the sole responsibility of the property owner.

[1] U.S. Fish and Wildlife Service. Accessed July 2009. Federal Endangered Species Act. Available online at: http://www.fws.gov/Endangered/pdfs/esaall.pdf

[2] U.S. Fish and Wildlife Service. 1918. Migratory Bird Treaty Act of 1918. Available online at: http://www.fws.gov/laws/lawsdigest/migtrea.html

3.1.3 Bald and Golden Eagle Protection Act

The purpose of the federal Bald and Golden Eagle Protection Act (BGEPA) of 1940 (BGEPA; 16 USC 668–668c, as amended) that is administered by the USFWS protects bald and golden eagles, their nests, eggs, and parts.[3] The BGEPA prohibits the "take" of bald and golden eagles unless pursuant to regulations. Take is defined by the BGEPA as an action "to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb (i.e., agitate or bother to a degree that causes injury, decreased productivity, or nest abandonment)."[4] In addition, the *National Bald Eagle Management Guidelines* were published by the USFWS in May 2007 in conjunction with delisting the bald eagle to provide provisions to continue to protect bald eagles from harmful actions and impacts.[5] Under the BGEPA, a final rule was published in May 2008 in the *Federal Register* that proposed authorization for take of bald eagles for those with existing authorization under the federal ESA where the bald eagle is covered in an HCP or the golden eagle is covered as a non-listed species.[6]

Compliance with the applicable provisions of the BGEPA, in relation to the development of a property using hauled water as the source of potable water, would be the sole responsibility of the property owner.

3.1.4 Section 404 of the Federal Clean Water Act

Section 404 of the federal Clean Water Act, which is administered by the USACOE, regulates the discharge of dredged and fill material into waters of the United States, which include surface waters such as navigable waters and their tributaries, all interstate waters and their tributaries, natural lakes, all wetlands adjacent to other waters, and all impoundments of these waters. USACOE has established a series of nationwide permits that authorize certain activities in waters of the United States, provided that a proposed activity can demonstrate compliance with standard conditions. Projects that result in the loss of less than the acreage specified by the applicable nationwide permit can normally be conducted pursuant to one of the nationwide permits, if consistent with the standard permit conditions. If the conditions of a nationwide permit cannot be met, or the project results in more than minimal adverse environmental impact, an individual permit may be required.

Compliance with the applicable provisions of the Section 404 of the Federal Clean Water Act, in relation to the development of a property using hauled water as the source of potable water, would be the sole responsibility of the property owner.

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[3] U.S. Fish and Wildlife Service. n.d. Bald Eagle Management Guidelines and Conservation Measures: Bald and Golden Eagle Protection Act. Available online at: http://www.fws.gov/midwest/Eagle/guidelines/bgepa.html

[4] U.S. Fish and Wildlife Service. n.d. Bald Eagle Management Guidelines and Conservation Measures: Bald and Golden Eagle Protection Act. Available online at: http://www.fws.gov/midwest/Eagle/guidelines/bgepa.html

[5] U.S. Fish and Wildlife Service. May 2007. National Bald Eagle Management Guidelines. Available online at: http://www.fws.gov/pacific/eagle/NationalBaldEagleManagementGuidelines.pdf

[6] Federal Register. 20 May 2008. "Notices." 73(98): 29075–29084.

3.2 STATE

3.2.1 State Fish and Game Code

Sections 1600 through 1603, Notification to CDFW of Lake or Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California are subject to the regulatory authority of the CDFW (California Fish and Game Code Sections 1600 through 1603) and require preparation of a Streambed Alteration Agreement. Pursuant to the Code, a *stream* is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that support or have supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial waterways valuable to fish and wildlife are subject to CDFW jurisdiction.

Compliance with Section 1600 of the state Fish and Game Code, in relation to the development of a property using hauled water as the source of potable water, would be the sole responsibility of the property owner.

Sections 1900–1913—Native Plant Protection Act

The Native Plant Protection Act includes measures to preserve, protect, and enhance rare and endangered native plants. The list of native plants afforded protection pursuant to the Native Plant Protection Act includes those listed as rare and endangered under the California ESA. The Native Plant Protection Act provides limitations that no person would import into this state—or take, possess, or sell within the State of California—any rare or endangered native plant, except in compliance with provisions of the Act. Where individual landowners have been notified by the CDFW that rare or native plants are growing on their land, the landowners are required to notify the CDFW at least 10 days in advance of changing land uses to allow the CDFW to salvage any rare or endangered native plant material.

Compliance with the Native Plant Protection Act where suitable habitat for rare or endangered native plant species exists on their private land, in relation to the development of a property using hauled water as the source of potable water, would be the sole responsibility of the property owner.

Sections 2080 and 2081—California Endangered Species Act

The California ESA (California Fish and Game Code §§ 2050 et seq.) prohibits the take of listed species, except as otherwise provided in State law. The *take* for the California ESA is defined as it is in the federal ESA; however, unlike the federal ESA, the California ESA also applies the take prohibitions to species petitioned for listing as State candidates rather than only those listed species. State lead agencies are required to consult with CDFW to ensure that any actions undertaken by the lead agency are not likely to jeopardize the continued existence of any State-listed species or result in destruction or degradation of required habitat. CDFW is authorized to enter into Memoranda of Understanding (MOUs) with individuals, public agencies, universities, zoological gardens, and scientific or educational institutions to import, export, take, or possess listed species for scientific, educational, or management purposes. Permits for incidental take of species protected pursuant to the California ESA are available under certain circumstances as described in Sections 2080 and 2081 of the California Fish and Game Code described below.

Section 2080 of the California ESA states:

> No person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission [State Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act.

Pursuant to Section 2081 of the Fish and Game Code, CDFW may authorize individuals or public agencies to import, export, take, or possess, any State-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or MOUs as follows: (1) if the take is incidental to an otherwise lawful activity, (2) if impacts of the authorized take are minimized and fully mitigated, (3) if the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and (4) if the applicant ensures adequate funding to implement the measures required by CDFW. CDFW shall make this determination based on available scientific information and shall include consideration of the ability of the species to survive and reproduce.

Compliance with the California ESA where suitable habitat for state-listed species exists on their private land, in relation to the development of a property using hauled water as the source of potable water, would be the sole responsibility of the property owner.

Section 2800–2835, Natural Community Conservation Planning Act of 1991, as Amended

The Natural Community Conservation Planning Act of 1991, as amended in 2003 (California Fish and Game Code Section 2800-2835) established the Natural Community Conservation Planning program for the protection and perpetuation of the State's biological diversity. The CDFW established the program in order to conserve natural communities at the ecosystem level while accommodating compatible land use. An NCCP identifies and provides for the regional or area-wide protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity. The CDFW provides support, direction, and guidance to participants in order to ensure that NCCPs are consistent with the State ESA.

Sections 3503 and 3503.5 State Protection for Birds

Sections 3503 and 3503.5 of the State Fish and Game Code provide regulatory protection to resident and migratory birds and all birds of prey within the State of California, including the prohibition of the taking of nests and eggs, unless otherwise provided for by the Code. Specifically, these sections of the Code make it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the Code.

Compliance with Sections 3503 and 3503.5 of the State Fish and Game Code where suitable nesting habitat for resident and migratory bird species exists on their private land, in relation to the development of a property using hauled water as the source of potable water, would be the sole responsibility of the property owner.

Section 3511, 4700, 5050 and 5515 State Fully Protected Species

The state of California classifies certain animals as "Fully Protected," in Section 3511 of the State Fish and Game Code. This classification was the State's initial effort in the 1960s to identify and provide additional protection to certain species that were rare or faced possible extinction. Lists were made for fish, mammals, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under the State and/or federal ESAs. Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code state that Fully Protected species (birds, mammals, fish, reptiles, amphibians) or parts thereof may not be taken or possessed at any time, and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Compliance with the applicable provisions of Sections 3511, 4700, 5050, and 5515 of the State Fish and Game Code, in relation to the development of a property using hauled water as the source of potable water, would be the sole responsibility of the property owner.

Section 4150—Non-Game Mammal or Furbearing Mammal

All mammals occurring naturally in California which are not game mammals, fully protected mammals, or fur-bearing mammals, are nongame mammals. Nongame mammals or parts thereof may not be taken or possessed except as provided in this code or in accordance with regulations adopted by the commission. The regulations of take of furbearing mammals are established within the California Code of Regulations (CCR), Title 14, Division 1 (Subdivision 2), Chapter 5. Take is prohibited for several furbearing mammals under Title 14, § 460 of the CCR, including but not limited to desert kit fox (*Vulpes macrotis arsipus*), coyote (*Canis latrans*), and American badger (*Taxidea taxus*). Title 14 § 460 is supported by Sections 200, 202, 203, and 4009.5 of the Fish and Game Code.

Compliance with the applicable provisions of Section 4150 of the State Fish and Game Code, in relation to the development of a property using hauled water as the source of potable water, would be the sole responsibility of the property owner.

3.2.2 Division 23 of the California Food and Agriculture Code

The main purpose of the California Desert Native Plant Act (Division 23 of the California Food and Agriculture Code) is to preserve and enhance desert native plants by protecting certain species from unlawful harvesting on both public and privately owned lands. The list of desert native plants afforded protection pursuant to the Desert Native Plant Act includes species within the Mojave Desert portion of Los Angeles County. The Desert Native Plant Act provides limitations that no person will harvest, transport, or possess certain native desert plants without authorization (i.e., valid permit or wood receipt). Authorization for take of native desert plants can be obtained through the sheriff or commissioner of the county where harvesting will occur and subject to county-designated fees. The following species are regulated by the Desert Native Plant Act and may occur within Los Angeles County: panamint dudleya (*Dudleya saxosa*), all species of the family Agavaceae (century plants and yuccas), all species of the family Cactaceae (cacti), all species of mesquites (*Prosopis*), catclaw (*Acacia greggii*), and desert holly (*Atriplex hymenelytra*).

Compliance with the applicable provisions of Division 23 of the California Food and Agriculture Code, in relation to the development of a property using hauled water as the source of potable water, would be the sole responsibility of the property owner.

3.3 LOCAL

The proposed initiative study area is located entirely within unincorporated Los Angeles County and is subject to the County of Los Angeles General Plan 2035 Update.

3.3.1 Los Angeles County General Plan 2035

The Conservation and Natural Resources Element of the Los Angeles County General Plan 2035 Update has established two goals and 13 policies related to biological resources. Of those, 10 of the 12 policies in regard to biological resources are relevant to the consideration of the proposed initiative.[7] The two goals and seven supporting policies that apply to the proposed initiative are:

- ***Goal C/NR 3***: Permanent, sustainable preservation of genetically and physically diverse biological resources and ecological systems including: habitat linkages, forests, coastal zone, riparian habitats, streambeds, wetlands, woodlands, alpine habitat, chaparral, shrublands, andSignificant Ecological Area (SEAs).
    - Policy C/NR 3.1: Conserve and enhance the ecological function of diverse natural habitats and biological resources.
    - Policy C/NR 3.6: Assist state and federal agencies and other agencies, as appropriate, with the preservation of special-status species and their associated habitat and wildlife movement corridors through the administration of the SEAs and other programs.
    - Policy C/NR 3.8: Discourage development in areas with identified significant biological resources, such as SEAs.
    - Policy C/NR 3.9: Consider the following in the design of a project that is located within an SEA, to the greatest extent feasible:
        - Preservation of biologically valuable habitats, species, wildlife corridors and linkages;
        - Protection of sensitive resources on the site within open space;
        - Protection of water sources from hydro-modification in order to maintain the ecological function of riparian habitats;
        - Placement of the development in the least biologically sensitive areas on the site (prioritize the preservation or avoidance of the most sensitive biological resources onsite).
        - Maintenance of watershed connectivity by capturing, treating, retaining, and/or infiltrating storm water flows on site.

[7] Los Angeles County Department of Regional Planning. January 2014. Los Angeles County General Plan Public Review Draft: Chapter 9: Conservation and Natural Resources Element. Available online at: http://planning.lacounty.gov/assets/upl/project/gp_2035_Chapter9_2014.pdf Page 146.

- Policy C/NR 3.10: Require environmentally superior mitigation for unavoidable impacts on biologically sensitive areas, and permanently preserve mitigation sites.

- Policy C/NR 3.11: Discourage development in riparian habitats, streambeds, wetlands, and other native woodlands in order to maintain and support their preservation in a natural state, unaltered by grading, fill, or diversion activities.

- ***Goal C/NR 4***: Conserved and sustainably managed woodlands.

  - Policy C/NR 4.1: Preserve and restore oak woodlands and other native woodlands that are conserved in perpetuity with a goal of no net loss of existing woodlands.

3.3.2 Santa Clarita Valley Area Plan

All parcels located within the Santa Clarita Valley are situated within the 2012 Santa Clarita Valley Area Plan, a component of the Los Angeles County General Plan. The Santa Clarita Valley Area Plan has a Conservation and Open Space Element that covers biological resources. There are seven objectives and 32 policies related to Biological Resources but four objectives and eight policies are relevant directly to the consideration of the proposed initiative:

- ***Objective CO-3.2***: Identify and protect areas which have exceptional biological resource value due to a specific type of vegetation, habitat, ecosystem, or location.

  - Policy CO-3.2.1: Protect wetlands from development impacts, with the goal of achieving no net loss (or functional reduction) of jurisdictional wetlands within the planning area.

  - Policy CO-3.2.2: Ensure that development is located and designed to protect oak and other significant indigenous woodlands. (Guiding Principle #9)

  - Policy CO-3.2.3: Ensure protection of any endangered or threatened species or habitat, in conformance with State and federal laws.

  - Policy CO-3.2.4: Protect biological resources in the designated Significant Ecological Areas (SEAs) through the siting and design of development which is highly compatible with the SEA resources. Specific development standards shall be identified to control the types of land use, density, building location and size, roadways and other infrastructure, landscape, drainage, and other elements to assure the protection of the critical and important plant and animal habitats of each SEA. In general, the principle shall be to minimize the intrusion and impacts of development in these areas with sufficient controls to adequately protect the resources. (Guiding Principle #10)

- ***Objective CO-3.3***: Protect significant wildlife corridors from encroachment by development that would hinder or obstruct wildlife movement.

- Policy CO-3.3.1: Protect the banks and adjacent riparian habitat along the Santa Clara River and its tributaries, to provide wildlife corridors.

- Policy CO-3.3.3: Identify and protect one or more designated wildlife corridors linking the Los Padres and Angeles National Forests through the Santa Clarita Valley (the San Gabriel-Castaic connection).

- ***Objective CO-3.5***: Maintain, enhance, and manage the urban forest throughout developed portions of the Santa Clarita Valley to provide habitat, reduce energy consumption, and create a more livable environment.

  - Policy CO-3.5.3: Pursuant to the requirements of the Zoning Ordinance, protect heritage oak trees that, due to their size and condition, are deemed to have exceptional value to the community.

- ***Objective CO-3.6***: Minimize impacts of human activity and the built environment on natural plant and wildlife communities.

  - Policy CO-3.6.5: Ensure revegetation of graded areas and slopes adjacent to natural open space areas with native plants (consistent with fire prevention requirements).

3.3.3 2015 Antelope Valley Area Plan – Town & Country

The Antelope Valley Areawide Plan – Town and Country (Antelope Valley Areawide Plan) was approved by the County Board of Supervisors on November 12, 2014, and adopted on June 16, 2015.[8] The Town and Country Planning Area of the Antelope Valley Area Plan, a component of the Los Angeles County General Plan, provides planning policies for approximately 1,800 square miles of elevated desert terrain bounded by the southern foothills of the San Gabriel Mountains on the south, Kern County to the north, and extending from the eastern border of the community of Agua Dulce and the Ventura County line on the west to the San Bernardino County line on the east, including 94.8 percent of the parcels that would be potentially affected by the proposed initiative.[9] The Antelope Valley Areawide Plan has one goal and ten policies related to biological resources, seven of which are relevant directly to the consideration of the proposed initiative:

- ***Goal COS 4:*** Sensitive habitats and species are protected to promote biodiversity.

  - Policy COS 4.1: Direct the majority of the unincorporated Antelope Valley's future growth to rural town centers and economic opportunity areas, minimizing the potential for habitat loss and negative impacts in Significant Ecological Areas.

  - Policy COS 4.2: Limit the amount of potential development in Significant Ecological Areas, including the Joshua Tree Woodlands, wildlife corridors,

[8] Los Angeles County Department of Regional Planning. Accessed 1 May 2015. Town & Country: Latest News. Available online at: http://planning.lacounty.gov/tnc

[9] Los Angeles County Department of Regional Planning. November 12, 2014. Antelope Valley Area Plan – Town & Country: A Component of the Los Angeles County General Plan. Available online at: http://planning.lacounty.gov/tnc/documents/

and other sensitive habitat areas, through appropriate land use designations with very low residential densities

- Policy COS 4.3: Require new development in Significant Ecological Areas to comply with applicable Zoning Code requirements, ensuring that development occurs on the most environmentally suitable portions of the land.

- Policy COS 4.4: Require new development in Significant Ecological Areas, to consider the following in design of the project, to the greatest extent feasible:

    - Preservation of biologically valuable habitats, species, wildlife corridors and linkages;
    - Protection of sensitive resources on the site within open space;
    - Protection of water sources from hydromodification in order to maintain the ecological function of riparian habitats;
    - Placement of development in the least biologically sensitive areas on the site, prioritizing the preservation or avoidance of the most sensitive biological resources onsite;
    - Design of required open spaces to retain contiguous undisturbed open space that preserves the most sensitive biological resources onsite and/or serves to maintain connectivity;
    - Maintenance of watershed connectivity by capturing, treating, retaining and/or infiltrating storm water flows on site; and
    - Consideration of the continuity of onsite open space with adjacent open space in project design.

- Policy COS 4.5: Subject to local, state or federal laws, require new development to provide adequate buffers from preserves, sanctuaries, habitat areas, wildlife corridors, State Parks, and National Forest lands, except within Economic Opportunity Areas.

- Policy COS 4.6: Encourage connections between natural open space areas to allow for wildlife movement.

- Policy COS 4.7: Restrict fencing in wildlife corridors. Where fencing is necessary for privacy or safety, require appropriate development standards that maximize opportunities for wildlife movement.

3.3.4 County Municipal Los Angeles County Code Section 22.56.215 – Hillside Management and Significant Ecological Areas – Additional Regulations

Under the adopted ordinance, conditional use permits are required prior to granting a building permit or grading permit within an SEA and must be approved to allow development within SEAs, subject to review by the Significant Ecological Areas Technical Advisory Committee (SEATAC) and a public hearing. However, under the adopted ordinance 22.56.215, single-family residences where not more than one such residence is proposed to be built by the same person on contiguous lots or parcels are exempt from the conditional use permit. Therefore, this ordinance is not applicable to parcels included within the proposed initiative study area.

3.3.5 County Municipal – Los Angeles County Code Sections 22.56.2050 – 22.56.2260 – Oak Trees

The Los Angeles County Oak Tree Ordinance requires a permit prior to the cutting, removing, destroying, relocating, inflicting damage on, or encroaching into a protected zone of any tree within the oak genus.[10] The Ordinance regulates only oak trees (genus *Quercus*) located within unincorporated areas of Los Angeles County. In addition, the circumference of an oak tree with one trunk must be 25 inches (8 inches in diameter) or more. For oak trees with multiple trunks, any two trunks must have a circumference of 38 inches (12 inches in diameter) or more. Measurements must be recorded at 4.5 feet above mean natural grade.

3.3.6 Acton Community Standards District

The Acton Community Standards District (CSD) requires that development plans emphasize the protection of, and revegetation with, native vegetation, including the native plants, grasses, shrubs and trees which intercept, hold and more slowly release rainfall than bare earth surfaces. On any parcel consisting of one acre or greater, the removal or destruction of native vegetation exceeding 10 percent of the parcel area within any 12-month period shall require the director's approval. All permit applications involving grading must include a site plan for director's review. Within hillside areas, such site plan must comply with Section 22.56.215, which requires a conditional use permit for projects in hillside management areas. This information shall not substitute for oak tree permit requirements. Material submitted shall include a landscaping plan supportive of the Acton CSD showing existing and proposed landscaping, acceptable to the department of regional planning. Such plan shall specifically identify California junipers, manzanita, Great Basin sage and Joshua trees and generally describe the type and condition of native vegetation. Relandscaping of disturbed areas should emphasize the use of existing native, drought tolerant vegetation. The director shall approve the site plan with appropriate conditions, for all or a portion of the proposed work when satisfied that the performance of such work is consistent with the intent of the Acton CSD to preserve native vegetation.

3.3.7 Juniper Hills Community Standards District

The Juniper Hills CSD requires that the removal or destruction of vegetation of any kind on a lot or parcel of land two-and-one-half acres or greater in size shall require a conditional use permit pursuant to Part 1 of Chapter 22.56 where the area of removal or destruction is greater than 30 percent of the gross area of the lot or parcel. This requirement does not apply to the removal or destruction of vegetation that is necessary to allow for the construction of additions to existing single-family residences. Where a new single-family residence is proposed on an existing unimproved lot or parcel of land two-and-one-half acres or greater in size, site plans shall be submitted to the director pursuant to Part 12 of Chapter 22.56 that depict existing vegetation. A fuel modification plan shall also be submitted to the director that demonstrates that the proposed removal or destruction of vegetation shall not occur on more than 30 percent of the gross area of the lot or parcel unless such removal or destruction meets the exclusions contained in subsection E.9.b of the CSD. A vegetation conservation covenant shall be recorded with the county recorder for each such parcel or lot to ensure the permanent maintenance of the vegetation on each lot as

[10] Los Angeles County Department of Regional Planning. Accessed 27 March 2014. Los Angeles County, California, Code of Ordinances – Title 22 Planning and Zoning. Available online at: http://library.municode.com/index.aspx?clientId=16274

depicted in the approved fuel modification plan. Transplantation of vegetation is encouraged as an alternative to removal.

3.3.8 Elizabeth Lake and Lake Hughes Community Standards District

The Elizabeth Lake and Lake Hughes CSD defines native vegetation as those plants designated for the corresponding Ecological Zone in the Los Angeles County Drought-tolerant Approved Plant List, maintained by the Department of Regional Planning. This CSD requires that all property development shall use only native vegetation in landscaped areas and to re-vegetate graded slopes, provided the available species are determined adequate to prevent erosion by the Department of Public Works. Where fuel modification is required, species from the Desirable Plan List, maintained by the Fire Department, may be used in Fuel Modification Zones A and B. The CSD also determines that in order to remove or destroy greater than thirty (30) percent of the native vegetation on a lot or parcel of land, the applicant shall substantiate that the applicant has obtained verification by an engineer, architect, biologist, or equivalent that removal or destruction is necessary because continued existence at present location(s) precludes the reasonable use of the property for a permitted use in the zone and the cost of alternative development plans would be prohibitive, or that it is required by the Fire Department, or that it is necessary for work performed under a permit issued by the Department of Public Works to control erosion or flood hazards.

3.3.9 Castaic Area Community Standards District

The Castaic Area CSD determines that the removal or destruction of locally indigenous vegetation is prohibited on a parcel of land one acre or greater in size, where the area of removal or destruction is greater than ten percent of the parcel. Locally indigenous vegetation is defined as the vegetation listed on the Castaic Area List of Indigenous Plants, prepared and maintained by regional planning. In addition, the channelization of the Castaic, Hasley Canyon, Violin Canyon, Tapia Canyon, Charlie Canyon, San Martinez Grande Canyon, and San Martinez/Chiquito Canyon creeks shall be permitted by the Castaic Area CSD provided that appropriate mitigation measures are implemented, as approved by the county departments of regional planning and public works, to preserve the indigenous habitats of the creeks and to protect the aesthetics of the creek settings. In formulating such mitigation measures, input from the Castaic Area Town Council and state and federal agencies with expertise in this field shall be considered. The CSD requires that the channels are maintained with soft bottoms, the channel sides slope downward such that, at each cross-section along the length of the channel, the channel has a trapezoidal configuration, channel bank materials are matched with local soils and stone for color and texture compatibility, adequate setbacks are incorporated to allow for the preservation or replanting of locally indigenous vegetation, and to the greatest extent possible, watercourses shall flow naturally within the full width of the improved natural flood plain. In addition, an oak tree permit for the removal or relocation of one oak tree in conjunction with a single-family residence use in the Castaic Area CSD, shall require publishing and hearing as otherwise required in Part 16 of Chapter 22.56 The exemptions permitted in Chapter 22.56 are not applicable in the Castaic Area CSD.

SECTION 4.0
METHODS

This section of the BRTR describes the methods employed in the characterization and evaluation of biological resources within the seven subareas of the proposed initiative study area. The study methods were designed to provide the substantial evidence required to address the scope of analysis recommended in Appendix G of the State CEQA Guidelines, as well as the Conservation and Natural Resources Element of the Los Angeles County General Plan 2035;[1]and the Los Angeles County Code of Ordinances – Title 22 Planning and Zoning goals and policies related to biological resources. The methods used for the characterization and evaluation of biological resources consider the Los Angeles County General Plan 2035, Santa Clarita Valley Area General Plan, Antelope Valley Areawide General Plan goals and policies related to biological resources, [2,3] areas potentially subject to the jurisdiction of the USACOE pursuant to Section 404 of the Clean Water Act, riparian and other State-designated sensitive habitats including those requiring a Streambed Alteration Agreement pursuant to Section 1600 of the State Fish and Game Code, special-status species and designated critical habitat, native resident or migratory species of fish and wildlife, and any federal, State, and regional conservation plans.

4.1 SPECIAL STATUS SPECIES

4.1.1 Listed and Sensitive Species

Records of listed and sensitive plants and animals were reviewed to determine what the federally and State-listed species and sensitive species are that have the potential to occur within the limits of the proposed initiative. The purpose of reviewing species records was to provide information to characterize the potential for suitable habitat, designated critical habitat, or previously recorded occupied habitat to be affected by the development of single-family residences on parcels that are not served by a water district, and may be developed due to the availability of hauled water, where the provision of potable water from a well is determined to be infeasible. For the purposes of this analysis, species were assumed to be present if the parcel lies within the known historic range of the species and has suitable habitat. In this way, the publicly accessible data can be used to determine (1) if there is designated critical habitat for listed species, (2) if listed or sensitive species have the potential to occur on proposed initiative parcels, or (3) if a species has been determined to be present as a result of a survey. Directed surveys would need to be undertaken to assess the presence or absence of sensitive species and make a determination as to whether or not permits would be required pursuant to Section 10(a)(1) of the federal ESA or Section 2081 of the California ESA.

The search considered federally and State-listed species, other special-status species, and locally important species with the potential to occur within and adjacent to the proposed initiative. The CNDDB query was supplemented with information from published and unpublished literature, including program- and project-level environmental documents prepared pursuant to CEQA and

[1] Los Angeles County Department of Regional Planning. Adopted 6 October 2015. Los Angeles County 2035 General Plan: Chapter 9: Conservation and Natural Resources Element Available online at: http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch6.pdf

[2] Los Angeles County Department of Regional Planning. November 27, 2012. Santa Clarita Valley Area Plan Update. PDF available online at: http://planning.lacounty.gov/assets/upl/project/ovov_2012-fulldoc.pdf

[3] Los Angeles County Department of Regional Planning. Adopted 16 June 2015. Antelope Valley Area Plan – Town & Country: A Component of the Los Angeles County General Plan. Available at: http://planning.lacounty.gov/tnc

the National Environmental Policy Act (NEPA) in the vicinity of the proposed initiative study area. The CNDDB database query for occurrence data within and surrounding the proposed initiative parcels included 53 USGS 7.5-minute series topographic quadrangles:

- Acton[4]
- Adobe Mountain[5]
- Agua Dulce[6]
- Alpine Butte[7]
- Azusa[8]
- Black Mountain[9]
- Burnt Peak[10]
- Chilao Flat[11]
- Condor Peak[12]
- Crystal Lake[13]
- Del Sur[14]
- El Mirage[15]
- Fairmont Butte[16]
- Frazier Mountain[17]
- Glendora[18]
- Green Valley[19]
- Hi Vista[20]
- Jackrabbit Hill[21]
- Juniper Hills[22]
- La Liebre Ranch[23]
- Lake Hughes[24]

[4] U.S. Geologic Survey. 2012. 7.5-minute Series, Acton, California, Topographic Quadrangle. Reston, VA.

[5] U.S. Geologic Survey. 2012. 7.5-minute Series, Adobe Mountain, California, Topographic Quadrangle. Reston, VA.

[6] U.S. Geologic Survey. 2012. 7.5-minute Series, Agua Dulce, California, Topographic Quadrangle. Reston, VA.

[7] U.S. Geologic Survey. 2012. 7.5-minute Series, Alpine Butte, California, Topographic Quadrangle. Reston, VA.

[8] U.S. Geologic Survey. 2012. 7.5-minute Series, Azusa, California, Topographic Quadrangle. Reston, VA.

[9] U.S. Geologic Survey. 2012. 7.5-minute Series, Black Mountain, California, Topographic Quadrangle. Reston, VA.

[10] U.S. Geologic Survey. 2012. 7.5-minute Series, Burnt Peak, California, Topographic Quadrangle. Reston, VA.

[11] U.S. Geologic Survey. 2012. 7.5-minute Series, Chilao Flat, California, Topographic Quadrangle. Reston, VA.

[12] U.S. Geologic Survey. 2012. 7.5-minute Series, Condor Peak, California, Topographic Quadrangle. Reston, VA.

[13] U.S. Geologic Survey. 2012. 7.5-minute Series, Crystal Lake, California, Topographic Quadrangle. Reston, VA.

[14] U.S. Geologic Survey. 2012. 7.5-minute Series, Del Sur, California, Topographic Quadrangle. Reston, VA.

[15] U.S. Geologic Survey. 2012. 7.5-minute Series, El Mirage, California, Topographic Quadrangle. Reston, VA.

[16] U.S. Geologic Survey. 2012. 7.5-minute Series, Fairmont Butte, California, Topographic Quadrangle. Reston, VA.

[17] U.S. Geologic Survey. 2012. 7.5-minute Series, Frazier Mountain, California, Topographic Quadrangle. Reston, VA.

[18] U.S. Geologic Survey. 2012. 7.5-minute Series, Glendora, California, Topographic Quadrangle. Reston, VA.

[19] U.S. Geologic Survey. 2012. 7.5-minute Series, Green Valley, California, Topographic Quadrangle. Reston, VA.

[20] U.S. Geologic Survey. 2012. 7.5-minute Series, Hi Vista, California, Topographic Quadrangle. Reston, VA.

[21] U.S. Geologic Survey. 2012. 7.5-minute Series, Jackrabbit Hill, California, Topographic Quadrangle. Reston, VA.

[22] U.S. Geologic Survey. 2012. 7.5-minute Series, Juniper Hills, California, Topographic Quadrangle. Reston, VA.

[23] U.S. Geologic Survey. 2012. 7.5-minute Series, La Liebre Ranch, California, Topographic Quadrangle. Reston, VA.

- Lancaster East[25]
- Lancaster West[26]
- Lebec[27]
- Liebre Mountain[28]
- Little Buttes[29]
- Littlerock[30]
- Lovejoy Buttes [31]
- Mescal Creek[32]
- Mint Canyon[33]
- Mount Baldy[34]
- Mount San Antonio[35]
- Mount Wilson[36]
- Neenach School[37]
- Newhall[38]
- Oat Mountain[39]
- Pacifico Mountain[40]
- Palmdale[41]
- Pasadena[42]
- Redman[43]
- Ritter Ridge[44]
- Rogers Lake South[45]
- Rosamond[46]

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[24] U.S. Geologic Survey. 2012. 7.5-minute Series, Lake Hughes, California, Topographic Quadrangle. Reston, VA.
[25] U.S. Geologic Survey. 2012. 7.5-minute Series, Lancaster East, California, Topographic Quadrangle. Reston, VA.
[26] U.S. Geologic Survey. 2012. 7.5-minute Series, Lancaster West, California, Topographic Quadrangle. Reston, VA.
[27] U.S. Geologic Survey. 2012. 7.5-minute Series, Lebec, California, Topographic Quadrangle. Reston, VA.
[28] U.S. Geologic Survey. 2012. 7.5-minute Series, Liebre Mountain, California, Topographic Quadrangle. Reston, VA.
[29] U.S. Geologic Survey. 2012. 7.5-minute Series, Little Buttes, California, Topographic Quadrangle. Reston, VA.
[30] U.S. Geologic Survey. 2012. 7.5-minute Series, Littlerock, California, Topographic Quadrangle. Reston, VA.
[31] U.S. Geologic Survey. 2012. 7.5-minute Series, Lovejoy Buttes, California, Topographic Quadrangle. Reston, VA.
[32] U.S. Geologic Survey. 2012. 7.5-minute Series, Mescal Creek, California, Topographic Quadrangle. Reston, VA.
[33] U.S. Geologic Survey. 2012. 7.5-minute Series, Mint Canyon, California, Topographic Quadrangle. Reston, VA.
[34] U.S. Geologic Survey. 2012. 7.5-minute Series, Mount Baldy, California, Topographic Quadrangle. Reston, VA.
[35] U.S. Geologic Survey. 2012. 7.5-minute Series, Mount San Antonio, California, Topographic Quadrangle. Reston, VA.
[36] U.S. Geologic Survey. 2012. 7.5-minute Series, Mount Wilson, California, Topographic Quadrangle. Reston, VA.
[37] U.S. Geologic Survey. 2012. 7.5-minute Series, Neenach School, California, Topographic Quadrangle. Reston, VA.
[38] U.S. Geologic Survey. 2012. 7.5-minute Series, Newhall, California, Topographic Quadrangle. Reston, VA.
[39] U.S. Geologic Survey. 2012. 7.5-minute Series, Oat Mountain, California, Topographic Quadrangle. Reston, VA.
[40] U.S. Geologic Survey. 2012. 7.5-minute Series, Pacifico Mountain, California, Topographic Quadrangle. Reston, VA.
[41] U.S. Geologic Survey. 2012. 7.5-minute Series, Palmdale, California, Topographic Quadrangle. Reston, VA.
[42] U.S. Geologic Survey. 2012. 7.5-minute Series, Pasadena, California, Topographic Quadrangle. Reston, VA.
[43] U.S. Geologic Survey. 2012. 7.5-minute Series, Redman, California, Topographic Quadrangle. Reston, VA.
[44] U.S. Geologic Survey. 2012. 7.5-minute Series, Ritter Ridge, California, Topographic Quadrangle. Reston, VA.
[45] U.S. Geologic Survey. 2012. 7.5-minute Series, Rogers Lake South, California, Topographic Quadrangle. Reston, VA.
[46] U.S. Geologic Survey. 2012. 7.5-minute Series, Rosamond, California, Topographic Quadrangle. Reston, VA.

- Rosamond Lake[47]
- San Fernando[48]
- Simi Valley East[49]
- Sleepy Valley[50]
- Sunland[51]
- Val Verde[52]
- Valyermo[53]
- Warm Springs Mountain[54]
- Waterman Mountain[55]
- Whitaker Peak[56]

The initial consideration of listed and sensitive species of plants and animals was presented in the Initial Study. After the Initial Study was completed, the addition of new parcels to be analyzed under the proposed initiative added additional species for consideration. A total of 181 listed and sensitive species were considered in the Initial Study. As a result of the revised study area, three additional listed species (one federally endangered, one State rare, and one federally threatened and State endangered) and 13 sensitive species were evaluated after the parcels were updated. For all evaluated species, one of the following determinations were made for each species: (1) Present (many recent records within subareas), (2) Presumed Present (many recent records near or next to subareas), (3) Potentially Present (fewer, less recent records but these species are hard to detect and habitat is present), (4) Presumed Absent (few, old records without definite locational data and not likely to occur), and (5) Absent (no habitat present, records distant from parcels, or species has been extirpated).

Species previously determined to be absent or presumed absent were disclosed only within the Initial Study unless additional scoping letters specified that the absent species were indeed present or additional records or reports were uncovered as a result of preparation of this BRTR. The additional reports or records evaluated included the Los Angeles County General Plan 2035,[57] Santa Clarita Valley Area General Plan,[58] Antelope Valley Areawide General Plan,[59] Inventory of

[47] U.S. Geologic Survey. 2012. 7.5-minute Series, Rosamond Lake, California, Topographic Quadrangle. Reston, VA.

[48] U.S. Geologic Survey. 2012. 7.5-minute Series, San Fernando, California, Topographic Quadrangle. Reston, VA.

[49] U.S. Geologic Survey. 2012. 7.5-minute Series, Simi Valley East, California, Topographic Quadrangle. Reston, VA.

[50] U.S. Geologic Survey. 2012. 7.5-minute Series, Sleepy Valley, California, Topographic Quadrangle. Reston, VA.

[51] U.S. Geologic Survey. 2012. 7.5-minute Series, Sunland, California, Topographic Quadrangle. Reston, VA.

[52] U.S. Geologic Survey. 2012. 7.5-minute Series, Val Verde, California, Topographic Quadrangle. Reston, VA.

[53] U.S. Geologic Survey. 2012. 7.5-minute Series, Valyermo, California, Topographic Quadrangle. Reston, VA.

[54] U.S. Geologic Survey. 2012. 7.5-minute Series, Warm Springs Mountain, California, Topographic Quadrangle. Reston, VA.

[55] U.S. Geologic Survey. 2012. 7.5-minute Series, Waterman Mountain, California, Topographic Quadrangle. Reston, VA.

[56] U.S. Geologic Survey. 2012. 7.5-minute Series, Whitaker Peak, California, Topographic Quadrangle. Reston, VA.

[57] Los Angeles County Department of Regional Planning. Adopted 6 October 2015. Los Angeles County 2035 General Plan: Chapter 9: Conservation and Natural Resources Element Available online at: http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch6.pdf

[58] Los Angeles County, Santa Clarita Valley Area Plan, 2012. PDF available online at: http://planning.lacounty.gov/assets/upl/data/pd_santa-clarita-area-plan-2012.pdf Page 3-4, Section IV. Planning Area.

Rare and Endangered Plants,[60] Consortium of California Herbaria,[61] CalFlora,[62] California Bird Species of Special Concern,[63] ebird[64] and contact with the United States Forest Service (USFS) and the Transition Habitat Conservancy, which manage lands adjacent to parcels. Species that were determined to be absent or presumed absent in the Initial Study that were later determined to be present, presumed present, or potentially present within or adjacent to the additional parcels were also evaluated in this BRTR. All species that were categorized previously as present, presumed present, or potentially present were classified as "Present" for the purpose of this BRTR, unless there was sufficient evidence that the species had been extirpated or no habitat was present.

4.1.2 Critical Habitat

Sapphos Environmental, Inc. used geographic information systems (GIS) to overlay the parcels affected by the proposed initiative with designated critical habitat for all federally threatened and endangered species. The designated critical habitat information was obtained from the USFWS critical habitat portal.[65]

4.1.3 Locally Important Plants and Animals

Some species are protected by local and State policies but the species themselves are considered common. For example, all native cacti are protected in the Mojave Desert but few are listed or considered sensitive. Sapphos Environmental, Inc. reviewed the list of species protected under the Native Plant Protection Act, Division 23 of the California Food and Agriculture Code (Desert Native Plant Act), and California Fish and Game Code Sections 3511 and 4150 regarding State Fully Protected Species and Non-game Furbearing Mammals. Common species were evaluated as having a potential presence using range maps, Consortium of California Herbaria,[66] CalFlora,[67] and other environmental documents and surveys completed in the vicinity of the study area.[68] Portions of the study area containing suitable habitat were overlaid with parcels using GIS to determine where habitat for these species may be affected by the proposed initiative.

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[59] Los Angeles County Department of Regional Planning. Adopted 16 June 2015. Antelope Valley Area Plan – Town & Country: A Component of the Los Angeles County General Plan. Available at: http://planning.lacounty.gov/tnchttp://planning.lacounty.gov/assets/upl/data/pd_antelope-valley.pdf Page I-2

[60] California Native Plant Society. 2011. Inventory of Rare and Endangered Plants. Available at: http://www.rareplants.cnps.org/

[61] Consortium of California Herbaria. 2011. Consortium of California Herbaria: Search Page. Available at: http://ucjeps.berkeley.edu/consortium.

[62] CalFlora Information on California Plants for Education, Research and Conservation [Web Application]. 2011. The Cal Flora Database. Available at: http://www.calflora.org/

[63] Shuford, W.D., and T. Gardali, eds. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Camarillo, CA: Western Field Ornithologists; and Sacramento, CA: California Department of Fish and Game.

[64] See www.ebird.org

[65] See http://ecos.fws.gov/crithab/

[66] Consortium of California Herbaria. 2011. Consortium of California Herbaria: Search Page. Available at: http://ucjeps.berkeley.edu/consortium.

[67] CalFlora Information on California Plants for Education, Research and Conservation [Web Application]. 2011. The Cal Flora Database. Available at: http://www.calflora.org/

[68] CalFlora Information on California Plants for Education, Research and Conservation [Web Application]. 2011. The Cal Flora Database. Available at: http://www.calflora.org/

4.2 RIPARIAN AND SENSITIVE PLANT COMMUNITIES

4.2.1 State Sensitive Native Plant Communities

Existing published literature, maps, aerial photographs, and the results of previously completed surveys in the vicinity of the study area were evaluated to characterize the riparian and other state-designated plant communities that may be present on parcels that would be potentially eligible for development of a single-family residence if the proposed initiative were approved. The analysis resulted in the identification of the plant communities that have a potential to occur in the study area. In this way, the publicly accessible data were used to characterize the baseline conditions for riparian and other State-designated plant communities to be present in relation to four criteria: (1) presence determination based on recorded survey work; (2) likelihood to be present based on elevation, aspect, soil, and dominant vegetation; (3) if riparian areas and isolated wetlands subject to CDFW jurisdiction may be present based on the presence or absence of drainages or other aquatic or wetland features as mapped by the USGS; or the presence of riparian, aquatic, or wetland resources as mapped on the National Wetlands Inventory.
All of the parcels that would be potentially affected by the proposed initiative are privately held parcels, and the condition of the plant communities present on these parcels can range from undisturbed parcels with native plants, to grazing lands dominated primarily by non-native species, to highly degraded or cleared lots. Furthermore, surveys cannot be conducted on private parcels without permission; therefore, existing plant communities can only be assessed through existing available plant community data. However, private parcel owners would still be required to comply with any applicable federal, State, and local regulations.

Two types of plant community data are publically available within the study area of the proposed initiative: the Desert Renewable Energy Conservation Plan (DRECP) and Classification and Assessment with LANDSAT of Visible Ecological Groupings (CalVeg).[69] Both data sets used aerial imagery to preliminarily classify the communities and then used ground-truthing (i.e., physically checking the accuracy of the plant community) to determine dominant plant community. The DRECP plant community data are newer than the CalVeg data, and the areas covered by this data have been more recently ground-truthed.

Parcels located within the Mojave Desert have DRECP plant community data available, but parcels south of the Mojave Desert only have CalVeg plant community data available. Plant communities from these data sets were intersected with the parcel data using GIS. No overlap exists between the two data sets on any individual parcel; however, a single subarea may be covered by both data sets. The parcels within the Castaic/Santa Clarita/Agua Dulce subarea exist exclusively within the CalVeg data set and parcels within the Antelope Valley Northeast and Lancaster Northeast subareas exist exclusively within the DRECP data set. All other proposed initiative subareas are covered by both data sets to some degree, such that the entirety of the proposed initiative study area was covered by these data sets (Table 4.2.1-1, *Plant Community Data Sources for Each Subarea*). The Lake Hughes/Gorman/West of Lancaster and Lake Los Angeles/Llano/Valyermo/Littlerock subareas are located primarily within the DRECP data limits except for parcels located in the foothills of the San Gabriel Mountains, along Portal Ridge, and within the Sierra Pelona Mountains and valleys.

[69] See www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347188

TABLE 4.2.1-1
PLANT COMMUNITY DATA SOURCES FOR EACH SUBAREA

Type of Publically Available Plant Community Data	Proposed Initiative Subareas						
	C	A	LH	LL	AV	LN	SG
Desert Renewable Energy Conservation Plan (DRECP)		X	X	X	X	X	X
Classification and Assessment with LANDSAT of Visible Ecological Groupings (CalVeg)	X	X	X	X			X

KEY: C = Castaic/Santa Clarita/Agua Dulce subarea; LL = Lake Los Angeles/Llano/Valyermo/Littlerock subarea; A = Acton subarea; LH = Lake Hughes/Gorman/West of Lancaster subarea; AV = Antelope Valley Northeast subarea; LN = Lancaster Northeast subarea; SG = East San Gabriel Mountains subarea

The classification system used by the DRECP differed from CalVeg. Therefore, both sets of data needed to be converted into the standard plant communities recognized by CDFW. By converting the plant community data into one standard system, the plant communities could be assessed with regard to potential CDFW sensitive plant communities that could be present.[70] The current classification system for plant communities recognized by CDFW is based on *A Manual of California Vegetation*, second edition (MCV).[71]

The Appendices of the MCV allow for the conversion of plant communities from other vegetation classification systems into MCV format/recognized CDFW plant communities.[72,73] Although both data sets had to be converted to MCV format, converting the DRECP data to MCV standards is simpler than converting from CalVeg to MCV standards because:

- The DRECP data has more recently been ground-truthed
- The DRECP data uses the U.S. National Vegetation Classification System (NVCS), which closely matches the communities within the MCV. The NVCS classification system uses a hierarchical system with macrogroups, groups, and specific communities (e.g., macrogroup-California Forest and Woodland, group-Californian broadleaf forest and woodland, community-coast live oak woodland)
- The DRECP data generally provides notes on the dominant plant species; most of the DRECP data lists the dominant plant within the community

Conversely, CalVeg data tends to be less reliable and harder to convert to MCV format without field verification because:

- The CalVeg data is older, resulting in plant community changes that would not be detected, such as the result of fire or recent development
- CalVeg mapping covers a broader area than the DRECP, resulting in misclassifications of the plant community
- CalVeg data often lumps together a broad range of plant communities into one term, resulting in multiple corresponding plant communities

[70] See http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf

[71] Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation. Second Edition. Sacramento, CA: California Native Plant Society Press.

[72] Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation. Second Edition. Sacramento, CA: California Native Plant Society Press.

[73] See http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf

- CalVeg data requires a thorough review of the plant community descriptions, which often do not provide information on the most dominant plant species[74]

Given the potential errors in the existing data, Sapphos Environmental, Inc. reviewed the DRECP and CalVeg data carefully. Each data set was converted to MCV format using the appendices in the MCV.[75] The boundaries of the CalVeg and DRECP designated communities were not changed but the names of the communities were changed to the MCV format. In cases where plant communities were grouped within datasets, all corresponding MCV plant communities within the group with ranges in the study area were presumed to be present. For example, the plant community group "Mediterranean California naturalized annual and perennial grassland" corresponds to four different MCV plant communities; therefore, all four communities were assumed to be present within areas designated as "Mediterranean California naturalized annual and perennial grassland" on proposed initiative parcels. If the DRECP/CalVeg designation was a type of development (e.g., orchard, agriculture, urban), then these areas were grouped to be classified as "Developed."

Plant communities were ranked based on their State sensitivity, where State ranks S1–S3 are considered sensitive and S4–S5 are not considered sensitive. However, some of the S4–S5 communities could have sensitive associations, which were verified with the CDFW list of sensitive plant alliances and associations.[76] Whenever a sensitive association was determined to be potentially present, the entire community was classified as sensitive. This resulted in a potentially inflated estimate of the presence of sensitive plant communities in the study area. For example, Creosote Bush–White Burr Sage Scrub (*Larrea tridentata–Ambrosia dumosa* Shrubland Alliance) has a State rank of S5 and has the potential for the *Larrea tridentata–Ambrosia dumosa–Petalonyx thurberi* Association, which is designated as State-designated sensitive habitat. Therefore, any area noted as Creosote Bush–White Burr Sage Scrub must be considered sensitive. All plant communities that are known to occur within wetlands and riparian areas were noted, given that CDFW jurisdiction on wetlands and waterways is based on presence of riparian habitat.

After the data sets were converted to MCV format, any plant communities that could not occur within the study area based on range maps and descriptions in MCV were removed from analysis.[77] Discrepancies were investigated using aerial imagery to determine if the plant community type was appropriate. As a result of reviewing the range and aerial imagery, three main problems were observed: (1) converting from CalVeg to MCV often resulted in plant communities that occur only in northern and central parts of California, (2) trees were dominant in areas designated only as shrub communities, and (3) recent fire and development resulted in a change of the plant community.

The methods described above allowed for an informed estimate of the number and type of sensitive plant communities present within the proposed initiative study area. Definitive classification of the plant community(s) present on any given parcel within the proposed initiative subarea would require on-site plant community mapping by a qualified botanist.

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[74] See http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev3_045405.pdf

[75] Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation. Second Edition. Sacramento, CA: California Native Plant Society Press.

[76] See http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf

[77] Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation. Second Edition. Sacramento, CA: California Native Plant Society Press.

4.2.2 State Wetlands and Riparian

The purpose of evaluating state wetlands and riparian areas is to assess the potential for the proposed initiative to result in development of properties that may potentially require a Streambed Alteration Agreement from CDFW pursuant to Section 1600 of the State Fish and Game Code. Pursuant to Section 1600 of the California Fish and Game Code, all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California are subject to the regulatory authority of CDFW. CDFW's jurisdiction over State wetland and waterways places emphasis on riparian plant community habitat, dry lakes and playas, and other isolated wetlands that do not connect to navigable water. CDFW jurisdictional wetlands and waterways are defined by wetland or riparian vegetation and a defined bed and bank, and does not need to exhibit wetland hydrology, hydrophytic vegetation, and hydric soils.

For the purpose of this BRTR, State wetlands and waterways were determined to be: (1) all USGS blue-line drainages (as no width is associated with blue-line drainage data, a reasonable buffer was added to account for acreage); and (2) National Wetlands Inventory (NWI) features. To avoid overestimating the size of potential State Jurisdictional Areas, riparian plant communities and plant communities with associated wetland plants that fell outside of existing blue line drainages and NWI features were not included in the analysis of State Jurisdictional Areas for the purposes of this BRTR, although the State may choose to take jurisdiction over these communities during the Streambed Alteration Agreement process. Individual properties would require a jurisdictional delineation to be undertaken to assess the presence or absence of lake or streambed habitat and the potential to for alterations to such features subject to Notification of Lake or Streambed Alteration Application to the CDFW pursuant to Section 1600 of the State Fish and Game Code.

4.3 FEDERAL WETLANDS

The purpose of evaluating federal Waters of the United States was to determine what federal wetlands and waterways are present and which agency (federal or State) may have jurisdiction. The purpose was not to definitively perform a jurisdictional delineation. Rather, the purpose was to use existing data to develop a list of *potential* federal wetlands and waterways that could be subject to jurisdiction by the USACOE. In this way, publically accessible data on the blue-line features, existing plant communities, and known wetlands can be used to determine which parcels have the potential for jurisdictional wetlands and waterways to be present.

Federal wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."[78] Furthermore, federal wetland definition requirements state that "evidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland determination."[79] Sapphos Environmental, Inc. used the NWI database to determine if federal wetlands are known to occur on parcels affected by the proposed initiative. All NWI wetlands within the Santa Clara River, Los Angeles River, and San Gabriel River watersheds were considered federal wetlands; NWI wetlands within the western Mojave generally are not subject to USACOE jurisdiction and were only considered to be classified as State wetlands and riparian. For the purpose of this BRTR, all NWI wetlands are assumed to be USACOE jurisdictional wetlands, but these wetlands may also fall under other jurisdictions. If an NWI

[78] U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetland Delineation Manual. Vicksburg, MS.

[79] U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetland Delineation Manual. Vicksburg, MS.

wetland occurred on the parcels, federal wetlands were considered to be present and were evaluated based on potential impacts.

Federal waterways are based waterways that connect to navigable water bodies.[80] For instance, for rivers that drain into large lakes or oceans, the river and all tributaries would be subject to USACOE jurisdiction, including periodically wet washes with a defined bed and bank. The USACOE jurisdiction within these federal waterways is limited to the Ordinary High Water Mark (OHWM). The OHWM is defined as "that line on the shore established by the fluctuation of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas."[81] Sapphos Environmental, Inc. used USGS maps and blue-line drainage data to find navigable water bodies and blue-line features that connect to the Santa Clara, Los Angeles, and San Gabriel Rivers. In addition, Sapphos Environmental, Inc. reviewed reports on the Santa Clara River watershed.[82,83] For the purpose of this BRTR, all potentially navigable water bodies and blue-line streams, rivers, and washes that connect to them were assumed to be federal waterways. Individual properties would require a jurisdictional delineation to be undertaken to assess the presence or absence of Waters of the United States and the potential to for development of a property to result in dredge or fill activities within such features subject to Section 404 of the Federal Clean Water Act and requiring either a pre-construction notification pursuant to a Nationwide Permit or an individual permit from USACOE.

4.4 MIGRATORY CORRIDORS AND NURSERY SITES

Sapphos Environmental, Inc. used GIS to overlay the parcels affected by the proposed initiative with topographic, plant community, and published data for migratory corridors and nursery sites for wildlife species to characterize the baseline conditions for these resources within the study area. Where parcels within the subareas affected by the proposed initiative have the potential to be located within wildlife corridors and nursery sites, the empirical data from the analysis of single-family residences developed with hauled water and historically issued permits were used to estimate the level of impact that would be expected as a result of the proposed initiative. Publicly accessible data were used to determine (1) which areas are mostly important to wildlife movement and (2) potential locations of nursery sites.

The County has established SEAs primarily with the goal of protecting plants and animals and their corridors. During the selection of these SEAs, qualified biologists evaluated the significant wildlife corridors in the County and SEAs where these corridors were determined to be essential. Sapphos Environmental, Inc. reviewed the SEAs. Sapphos Environmental, Inc. used the SEAs as indicators of the presence of wildlife corridors. After reviewing South Coast Missing Linkages,[84,85,86,87] additional

[80] U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetland Delineation Manual. Vicksburg, MS.

[81] Code of Federal Regulations 328.3(e).

[82] U.S. Army Corps of Engineers. 2012. Santa Clara River Watershed Feasibility Study. Prepared by CDM Smith, Irvine, CA.

[83] Los Angeles Department of Public Works. 2014. Upper Santa Clara River Integrated Regional Water Management Plan. Prepared by Kennedy/Jenks Consultants

[84] http://www.scwildlands.org/reports/SCMLRegionalReport.pdf

[85] http://www.scwildlands.org/reports/SCML_SantaMonica_SierraMadre.pdf

[86] http://www.scwildlands.org/reports/SCML_SierraMadre_Castaic.pdf

[87] http://www.scwildlands.org/reports/SCML_SanGabriel_Castaic.pdf

migratory corridors were added to the analysis using GIS to overlay the parcels affected by the proposed initiative. In addition, Sapphos Environmental, Inc. reviewed comment letters on the newly adopted SEAs, specifically for comments on the size, location, and width of the proposed SEA wildlife corridors. Individual properties would require a directed survey to assess the presence or absence of migratory corridors or nursery sties and the potential to for development of a property to result in impacts to such resources. In particular, those parcels that are located in or adjacent to an SEA would be subject to a Conditional Use Permit and discretional review by the Significant Ecological Area Technical Advisory Committee (SEATAC). As part of the mandated discretionary review process, those parcels located in or adjacent to an SEA would require preparation of a Biological Constraints Analysis. Where the presence of sensitive biological resources, including migratory corridors or nursery sites, are identified and would have the potential to be effected by development of a single-family residence or appurtenant facilities, the development would be subject to additional evaluation of impacts pursuant to a Biota Report, subject to the review and approval of SEATAC.[88]

4.5 GENERAL PLANS AND POLICIES

The County General Plan, Specific Plans, and Community Service District Plans were evaluated to determine if the proposed initiative has the potential to conflict with adopted goals, policies, and ordinances related to conservation of biological resources that are applicable to the parcels within the proposed initiative study area. The parcels affected by the proposed initiative are within the unincorporated territory of the County that is managed consistent with the Los Angeles County General Plan 2035, including provisions related to SEAs, was reviewed with respect to its application regarding the proposed initiative and the parcels within. Sapphos Environmental, Inc. also reviewed goals and policies within the 2012 Santa Clarita Valley Area Plan and 2015 Antelope Valley Areawide General Plan – Town and Country. The parcels affected by the proposed initiative also fall under the jurisdiction of the Los Angeles County Oak Tree Ordinance and the existing and proposed SEA Ordinances as well as the Acton, Juniper Hills, Elizabeth Lake and Lake Hughes, and Castaic Area Community Standards Districts (CSDs). To quantify the most likely locations where the Oak Tree Ordinance applies, Sapphos Environmental, Inc. used existing plant community data sources (see Section 4.2) as a the basis of evaluation. Oak trees were assumed to be most likely present within plant communities designated as forested, oak woodland/scrub communities, or urban (given oaks are commonly planted); while oaks may occur occasionally within desert environs and scrub communities, this is generally the exception rather than the norm.

4.6 HCPs AND NCCPs

Adopted and proposed HCPs and NCCPs within and adjacent to the proposed initiative study area were mapped using data obtained from the USFWS and CDFW. The boundaries of any HCP or NCCP were compared to the subareas being evaluated within this BRTR using CDFW's NCCP California Regional Conservation Plans Map, which features all NCCPs and HCPs in the State of California.[89] All applicable HCPs and NCCPs were intensively reviewed to identify provisions for the management of biological resources that are applicable to the proposed initiative.

[88] Los Angeles County Department of Regional Planning. 2013. Significant Ecological Areas Technical Advisory Committee Procedures Manual. Available online at http://planning.lacounty.gov/assets/upl/case/sea_proc-guide.pdf

[89] See https://www.wildlife.ca.gov/Conservation/Planning/NCCP

SECTION 5.0
RESULTS

This section of the BRTR characterizes the baseline conditions for biological resources; evaluates the potential for the proposed initiative to result in significant direct, indirect, and cumulative impacts and identifies feasible measures capable of avoiding or reducing the significant impacts that would result from reasonably foreseeable development of single-family residences on selected parcels supported by the use of hauled water pursuant to the proposed initiative. The results described in this section address the scope of analysis recommended in Appendix G of the State CEQA Guidelines[1] for biological resources. The analysis includes the consideration of rare, threatened and endangered species and other special status and locally important species; goals and policies, related to the conservation of biological resources articulated in the Los Angeles County General Plan 2035; the 2012 Santa Clarita Valley Area Plan; the 2015 Antelope Valley Areawide General Plan; the Los Angeles County Oak Tree Ordinance; areas potentially subject to the jurisdiction of the USACOE pursuant to Section 404 of the Clean Water Act; riparian and other State-designated sensitive habitats, including those requiring a Lake or Streambed Alteration Agreement pursuant to Section 1600 of the State Fish and Game Code; special-status species and designated critical habitat; native resident or migratory species of fish and wildlife; and the consideration of federal, State, and regional conservation plans.

5.1 EXISTING CONDITIONS

5.1.1 Listed and Sensitive Plants and Animals

Listed and Candidate Species and Critical Habitat

As a result of the records and literature review, coordination with USFWS and CDFW, and focused surveys completed for other County projects in the north County, there are 27 species that are listed or candidate species under protection of the federal ESA or California ESA (CESA) (Table 5.1.1-1, *Total Number of Federally and State-Listed Species with the Potential to Occur in Each Subarea*; see Figure 5.1.1-1, *Federally and State-Listed Species with the Potential to Occur within the Proposed Initiative Subareas*, at the end of this section) that have the potential to be present on or within the vicinity of parcels affected by the proposed initiative including eight listed plants and 19 listed animals. The number of listed and candidate species within a given subarea ranges from six to 20:

[1] California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15386, Appendix G

TABLE 5.1.1-1
TOTAL NUMBER OF FEDERALLY AND STATE LISTED SPECIES WITH THE POTENTIAL TO OCCUR IN EACH SUBAREA

Number of Potentially Present Listed Species	C	A	LH	LL	AV	LN	SG
Plants	6	2	1	—	—	—	5
Invertebrates	1	—	—	—	—	—	—
Fish	2	2	2	—	—	—	1
Amphibians	3	2	3	2	—	—	2
Reptiles	—	—	1	1	1	1	—
Birds	7	3	6	2	1	2	4
Mammals	1	1	2	4	4	4	1
TOTAL*	**20**	**10**	**15**	**9**	**6**	**7**	**13**

KEY: C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains.

NOTE: *Each species may occur in more than one subarea; therefore, the total is not necessarily the sum of the data from each subarea.

The proposed initiative study area contains designated critical habitat for six species: spreading navarretia, Santa Ana sucker, southern mountain yellow-legged frog, desert tortoise, coastal California gnatcatcher, and Arroyo toad. Furthermore, critical habitat occurs in only four of the subareas (Table 5.1.1-2, *Critical Habitat within Subareas*; see Figure 5.1.1-2, *Critical Habitat within the Proposed Initiative Subareas*, at the end of this section). The Antelope Valley Northeast subarea is almost entirely, 99 percent, designated as critical habitat for desert tortoise. Designated critical habitat comprises 5 percent or less of the remaining six subareas. Critical habitat for spreading narvarretia is only within the Castaic/Santa Clarita/Agua Dulce subarea at the Cruzan Mesa. For coastal California gnatcatcher, critical habitat is limited to along the lower slopes of the San Gabriel and Santa Susana Mountains in the Castaic/Santa Clarita/Agua Dulce subarea. Arroyo toad critical habitat is within the Castaic/Santa Clarita/Agua Dulce, Acton, and East San Gabriel Mountains subareas but only within the vicinity of the Santa Clara and San Gabriel Rivers. Santa Ana sucker critical habitat is only within the East San Gabriel Mountains subarea and is limited to the vicinity of the San Gabriel River. Southern mountain yellow-legged frog critical habitat only exists on a very small segment of a single parcel in the East San Gabriel Mountains subarea.

TABLE 5.1.1-2
CRITICAL HABITAT WITHIN SUBAREAS

Subarea	Total Subarea Acres	Acres of Critical Habitat	Percentage of Subarea Critical Habitat
C	35,340	1,775	5%
A	18,065	80	<0.1%
LH	125,040	0	0%
LL	108,065	0	0%
AV	14,530	14,530	99%
LN	35,325	0	0%
SG	4,090	85	2%
TOTAL	**340,460**	**16,740**	**5%**

KEY: C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains.

Each of the 27 federally and/or State-listed or candidate species with the potential to be present in the proposed initiative subareas is discussed in detail below (Table 5.1.1-3, *Federally and State-Listed Species with the Potential to Occur within the Proposed Initiative Area*).

TABLE 5.1.1-3
FEDERALLY AND STATE-LISTED SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROPOSED INITIATIVE AREA

Species	Federal/State/ Other Status	Habitat	Potential to Occur within the Proposed Initiative Area						
			C	A	LH	LL	AV	LN	SG
Plants									
Braunton's milk-vetch (*Astragalus brauntonii*)	FE/ CRPR 1B.1	Chaparral, Closed-cone coniferous forest, Coastal scrub, Limestone, Valley & foothill grassland. Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland. Recent burns or disturbed areas; in saline, somewhat alkaline soils high in Ca, Mg, with some K. Soil specialist; requires shallow soils to defeat pocket gophers and open areas, preferably on hilltops, saddles or bowls between hills. 200–650 meters.	X	X					X
California Orcutt grass (*Orcuttia californica*)	FE/ SE/ CRPR 1B.1	Occurs in vernal-pools and volcanic terraces from Ventura County south to Baja California.	X						
Mt. Gleason paintbrush (*Castilleja gleasoni*)	SR/ CRPR 1B.2	Occurs within chaparral, lower montane coniferous forest, and pinyon and juniper woodland habitats in granitic soils.							X
Nevin's barberry (*Berberis nevinii*)	FE/ SE/ CRPR 1B.1	Occurs within riparian habitats, but generally in non-wetlands with sandy to gravelly soils, including washes and chaparral.	X						X
San Fernando Valley spineflower (*Chorizanthe parryi var. fernandina*)	FC/ SE/ CRPR 1B.1	Occurs in the western Transverse mountains in sandy soils.	X						
slender horned spineflower (*Dodecahema leptoceras*)	FE/ SE/ CRPR1B.1	Alluvial fans in chaparral and coastal sage scrub communities in the adjacent foothills of the Transverse and Peninsular ranges.	X	X					X
spreading navarretia (*Navarretia fossalis*)	FE, CRPR 1B.1	Vernal pools and freshwater marshes including ditches in southwestern California and the Mojave desert.	X		X				
thread-leaved brodiaea (*Brodiaea filifolia*)	FT/ SE/ CRPR 1B.1	Occurs in chaparral, cismontane woodland, coastal scrub, playa, valley and foothill grassland, and vernal pool habitats, often in clay soils.							X
Invertebrates									
vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Vernal pools from the Transverse Range north into southern Oregon.	X						
Fish									
Santa Ana sucker (*Catostomus santaanae*)	FT/SSC	Various substrates within water courses for different life stages with cooler waters, intermediate velocities and water courses that contain both pools and riffles.	X	X	X				X
unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*)	FE/ SE (FP)	Clear water systems Los Angeles and Santa Barbara Counties with a low current.	X	X	X				
Amphibians									
arroyo toad (*Anaxyrus californicus*)	FE/SSC	Washes, arroyos, sandy riverbanks, riparian areas with willows, sycamores, oaks, and cottonwoods.	X	X	X	X			X
California red-legged frog (*Rana draytonii*)	FT/SSC	Humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover, especially in lowlands and foothills.	X	X	X				
southern mountain yellow-legged frog (*Rana muscosa*)	FE/ SE, SSC/FS	In southern California, inhabits rocky streams in narrow canyons and in the chaparral belt.				X			X
Tehachapi slender salamander (*Batrachoseps stebbinsi*)	ST	Needs north facing moist canyons and ravines in oak and mixed woodlands in arid to semi-arid locations.	X		X				
Reptiles									
desert tortoise (*Gopherus agassizii*)	FT/ ST	Arid sandy or gravelly locations along riverbanks, washes, sandy dunes, alluvial fans, canyon bottoms, desert oases, rocky hillsides, creosote flats and hillsides.			X	X	X	X	
Birds									
bald eagle (*Haliaeetus leucocephalus*)	FDEL, BGEPA /SE (FP)/FS	Found near water that provides fish or waterfowl as a food source. Breeds in forested areas near large bodies of water; winters in coastal areas, along large rivers, and large unfrozen lakes.	X		X				X
California condor (*Gymnogyps californianus*)	FE/SE	Chaparral, coniferous forests, and oak savannah in southern and central California.	X		X				
coastal California gnatcatcher	FT/SSC	Coastal chaparral and sage scrub.	X		X				X

TABLE 5.1.1-3
FEDERALLY AND STATE-LISTED SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROPOSED INITIATIVE, *Continued*

Species	Federal/State/ Other Status	Habitat	Potential to Occur within the Proposed Initiative Area						
			C	A	LH	LL	AV	LN	SG
(*Polioptila californica californica*)									
least Bell's vireo (*Vireo bellii pusillus*)	FE/ SE	Dense willow-dominated riparian habitat, usually with a well-developed understory. The thick understory provides nesting habitat.	X	X	X				X
southwestern willow flycatcher (*Empidonax traillii extimus*)	FE/SE	Riparian areas and large wet meadows with abundant willows.	X	X					X
Swainson's hawk (*Buteo swainsoni*)	ST	Requires large, open grassland with abundant prey, with suitable nest trees. Foraging areas may include native grassland, lightly grazed pastures, alfalfa and hay crops, and other croplands.	X		X	X	X	X	
tricolored blackbird (*Agelaius tricolor*)	SCT	Freshwater marsh, Marsh & swamp, Swamp, Wetland. Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony.	X	X	X	X		X	
Mammals									
Mohave ground squirrel (*Xerospermophilus mohavensis*)	ST	Found in desert scrub and Joshua Tree woodland plant communities in the western Mojave desert, and is generally found in flat to moderate terrain.			X	X	X	X	
Nelson's antelope squirrel (*Ammospermophilus nelsoni*)	ST	Found in grasslands with moderate shrub cover which may include the following species, salt bush, ephedra, bladder pod, goldenbush, and snakeweed.				X	X	X	
San Bernardino kangaroo rat (*Dipodomys merriami parvus*)	FE/SSC	Two CNDDB records from a specimen collected in 1958 and 1962 at an unknown location near Pearblossom.				X	X	X	
Townsend's big-eared bat (*Corynorhinus townsendii*)	SCT/WBWG:H	Cliff, desert, conifer forest, hardwood forest, mixed forest, grassland/herbaceous, old field, savanna, shrubland/chaparral, conifer woodland, hardwood woodland, mixed woodland. Roosts in caves and mine tunnels. Nests and roosts in caves or mines. CNDDB records within parcels date from before 1950. Recent records are all outside impact areas.	X	X	X	X	X	X	X
TOTAL			**20**	**10**	**15**	**9**	**6**	**7**	**13**

KEY:
BGEPA = Bald and Golden Eagle Protection Act ; FDEL = federal delisted species; FC = federal candidate; FE = federal endangered; FT = federal threatened; SCT = State candidate threatened SE = state endangered SE (FP) = state endangered fully protected; SSC = California species of special concern SR = State Rare FS = Forest Service Sensitive ST = State threatened CRPR = California Rare Plant Rank WBWG:H = Western Bat Working Group High Priority.
C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains

NOTE:
CNPS categories: California Rare Plant Rank:
List 1B: Rare, threatened, or endangered in California and elsewhere (0.1: Seriously endangered in California, 0.2: Fairly endangered in California, 0.3: Not very endangered in California)

Plant Species

Braunton's milk-vetch is listed as endangered pursuant to the Federal ESA, and has a California Rare Plant Rank (CRPR) of 1B.1, which is considered seriously endangered in California. Critical habitat has been designated for this species by the USFWS; however, no critical habitat for Braunton's milk-vetch exists within 500 feet of the proposed initiative subarea parcels. A member of the legume family, Braunton's milk-vetch is found in recently burned or disturbed areas in chaparral, coastal scrub, and valley and foothill grassland habitats with sandstone soils with carbonate layers. Braunton's milk-vetch is a soil specialist that requires shallow soils and open areas. Braunton's milk-vetch is threatened by development, alteration of fire regimes, and vegetation and fuel management activities. Only 21 records of Braunton's milk-vetch in Los Angeles County have been reported in the past 100 years. The proposed initiative study area is within the known historic range of this species. Habitat and records for the Braunton's milk-vetch exist within the Castaic/Santa Clarita/Agua Dulce, Acton, and East San Gabriel Mountains subareas.

California Orcutt grass is listed as endangered pursuant to the Federal ESA and CESA, and has a CRPR of 1B.1, which is considered seriously endangered in California. No critical habitat has been designated for this species by the USFWS. California Orcutt grass is in the grass family, and is a densely tufted bright green annual grass. California Orcutt grass blooms from April through June, and seeds can remain dormant for over three years, germinating after the vernal pools have flooded in the spring. As vernal pools flood, the California Orcutt grass produces aquatic leaves that will float on the pool surface. After the pools dry, new foliage will emerge for flowering. The proposed initiative study area is within the known historic range of this species. Habitat and records for the California Orcutt grass exists within the Castaic/Santa Clarita/Agua Dulce and specifically in the vernal pools of the Cruzan Mesa.

Mt. Gleason paintbrush is listed as rare pursuant to CESA, and has a CRPR of 1B.2, which is considered fairly endangered in California. No critical habitat has been designated for this species by the USFWS. A member of the broomrape family, Mt. Gleason paintbrush is found in granitic soils in chaparral, lower montane coniferous forest, and pinyon and juniper woodland habitats. Mt. Gleason paintbrush is often found near campgrounds in the Angeles National Forest and is threatened by recreation associated with campgrounds including off-highway vehicle use, fuel wood cutting, and maintenance to roads. The proposed initiative study area is within the known historic range of this species. Only 45 records of Mt. Gleason Paintbrush in Los Angeles County have been reported in the past 100 years. Habitat and records for the Mt. Gleason Paintbrush exist within the East San Gabriel Mountains subarea.

Nevin's barberry is listed as endangered pursuant to the Federal ESA and CESA, and has a CRPR of 1B.1, which is considered seriously endangered in California. Critical habitat has been designated for this species by the USFWS; however, no critical habitat for Nevin's barberry exists within 500 feet of the proposed initiative subarea parcels. A member of the barberry family, Nevin's barberry is an evergreen shrub with prickly compound leaves. It has yellow flowers, and produces yellow-red berries. Nevin's barberry is found in gravelly wash margins in alluvial scrub habitats, and coarse soils in chaparral habitats. The proposed initiative study area is within the known historic range of this species. Most records from the CNDDB adjacent to parcels within the proposed initiative subareas have been extirpated; however some recent records are located near the East San Gabriel Mountains and Castaic/Santa Clarita/Agua Dulce subareas. Habitat for the Nevin's barberry exists within the East San Gabriel Mountains and Castaic/Santa Clarita/Agua Dulce subareas.

San Fernando Valley spineflower is listed as endangered pursuant to CESA, and has a CRPR of 1B.1, which is considered seriously endangered in California. No critical habitat has been designated for this species by the USFWS. A member of the buckwheat family, the San Fernando Valley spineflower is found in open sites in coastal sage scrub and chaparral plant communities, and forms clusters of white flowers, enclosed in a covering with spines, at the end of branches stemming from a rosette of basal leaves. Though the plant had previously been thought to have been extirpated from the San Fernando Valley, populations have recently been rediscovered along the slopes of the Santa Clara River as well as within the Upper Las Virgenes Canyon Open Space Preserve. The proposed initiative study area is within the known historic range of this species. Habitat for the San Fernando Valley spineflower exists within the Castaic/Santa Clarita/Agua Dulce subarea, particularly near the communities of Val Verde and Stevenson Ranch.

Slender-horned spineflower is listed as endangered pursuant to the Federal ESA and CESA, and has a CRPR of 1B.1, which is considered seriously endangered in California. No critical habitat has been designated for this species by the USFWS. The slender-horned spineflower is a member of the buckwheat family, and can be found in alluvial fans, floodplains, stream terraces, washes, and their benches. It is commonly found in soils that are generally silty and low in organic matter, and can be found in areas with other species of spineflower, along with brittlebush, California buckwheat, yucca, white sage, and lemonade berry. The slender-horned spineflower blooms from April until June, and is characterized by a small rosette of basal leaves, and spreading flowering stems. The proposed initiative study area is within the known historic range of this species. CNDDB records for the species occur within the Big Tujunga Creek, Santa Clara River, and Mint Canyon areas. Habitat for the slender-horned spineflower exists within the Castaic/Santa Clarita/Agua Dulce, East San Gabriel Mountains, and Acton subareas.

Spreading navarretia is listed as endangered pursuant to the Federal ESA, and has a CRPR of 1B.1, which is considered seriously endangered in California. There is less than one acre of critical habitat for the spreading navarretia within parcels in the Castaic/Santa Clarita/Agua Dulce subarea. The spreading navarretia can be found in wet areas including vernal pools, riparian areas and ditches. CNDDB records for the species occur within the Cruzan Mesa area. The proposed initiative study area is within the known historic range of this species. Habitat for spreading navarretia exists within the Lake Hughes/Gorman/West of Lancaster subarea and the Castaic/Santa Clarita/Agua Dulce subarea, specifically within the vernal pools of the Cruzan Mesa. Critical habitat has been designated for this species by the USFWS.

Thread-leaved brodiaea is listed as threatened pursuant to the Federal ESA and endangered pursuant to CESA, and has a CRPR of 1B.1, which is considered seriously endangered in California. Critical habitat has been designated for this species by the USFWS; however, no critical habitat for thread-leaved brodiaea exists within 500 feet of the proposed initiative subarea parcels. A member of the family Themidaceae, thread-leaved brodiaea is often found in clay soils in chaparral, cismontane woodland, coastal scrub, playa, valley and foothill grassland, and vernal pool habitats. Thread-leaved brodiaea is threatened by residential development and agriculture and the factors associated with these such as grazing, foot and vehicular traffic, and non-native plants. The proposed initiative study area is within the known historic range of this species. Only 12 records of thread-leaved brodiaea in Los Angeles County have been reported in the past 100 years. Habitat and records for the thread-leaved brodiaea exist within the East San Gabriel Mountains subarea.

Invertebrates

Vernal pool fairy shrimp is listed as threatened pursuant to the Federal ESA. Critical habitat has been designated for this species by the USFWS; however, no critical habitat for vernal pool fairy shrimp exists within 500 feet of the proposed initiative subarea parcels. Vernal pool fairy shrimp are generally found in cool-water pools with low to moderate dissolved solids that are less predictable and short lived. The proposed initiative study area is within the known historic range of this species. Vernal pool fairy shrimp were observed in the Cruzan Mesa during surveys conducted in 2010/2011.[2] The vernal pools on the Cruzan Mesa, within the Castaic/Santa Clarita/Agua Dulce subarea are habitat and have the potential to support vernal pool fairy shrimp.

Fish Species

The Santa Ana sucker is listed as threatened pursuant to the Federal ESA and a SSC by CDFW. There are 40 acres of critical habitat for Santa Ana sucker within parcels in the East San Gabriel Mountains subarea. The proposed initiative study area is within the known historic range of this species. Habitat for the Santa Ana sucker exists within the Castaic/Santa Clarita/Agua Dulce, Acton, Lake Hughes/Gorman/West of Lancaster, and East San Gabriel Mountains subareas, primarily along the Santa Clara and San Gabriel Rivers but also within tributaries with flowing water. Critical habitat has been designated for this species by the USFWS.

Unarmored threespine stickleback is listed as endangered pursuant to the Federal ESA and CESA. It is also a fully protected species in the State of California. No critical habitat has been designated for this species by the USFWS. The unarmored threespine stickleback is a small scaleless fish that is smaller than two and a half inches long. These fish are found in shallow pools and riffles that have abundant cover. The proposed initiative study area is within the known historic range of this species. Recent records in the CNDDB are located within the Santa Clara River south of Agua Dulce and west of Acton, San Francisquito Canyon, and Castaic Creek. Habitat for the Santa Ana sucker exists within the Castaic/Santa Clarita/Agua Dulce, Acton and Lake Hughes/Gorman/West of Lancaster subareas.

Amphibian Species

Arroyo toad is listed as endangered pursuant to the Federal ESA and a SSC by CDFW. Critical habitat has been designated for this species by the USFWS. There are 80 acres of critical habitat for Arroyo toad within parcels in the Acton subarea, 310 acres of critical habitat within parcels in the Castaic/Santa Clarita/Agua Dulce subarea, and 50 acres of critical habitat within parcels in the East San Gabriel Mountains subarea. The Arroyo toad is generally nocturnal, and is active from as early as January to as late as September. The Arroyo toads are plump and stocky with warty skin that can secrete a poison that can deter predators. Arroyo toads have specialized habitat needs, and can be found in washes, arroyos, sandy riverbanks, and riparian areas with willows, sycamores, oaks, and cottonwoods with quiet water free of predatory fishes and with silt free sandy bottoms. The proposed initiative study area is within the known historic range of this species. Habitat for the arroyo toad exists within the Castaic/Santa Clarita/Agua Dulce, Acton, Lake Hughes/Gorman/West of Lancaster, Lake Los Angeles/Llano/Valyermo/Littlerock, and East San Gabriel Mountains subareas. Critical habitat has been designated for this species by the USFWS.

[2] Juhasz, Thomas. 2011. 90-Day Protocol Survey Report for U.S. Fish and Wildlife Service Listed Vernal Pool Banchipods; City of Santa Clarita. Prepared for Impact Sciences Inc. Pasadena, CA

California red-legged frog is listed as threatened pursuant to the Federal ESA and a SSC by CDFW. Critical habitat has been designated for this species by the USFWS; however, no critical habitat for California red-legged frog exists within 500 feet of the proposed initiative subarea parcels. The California red-legged frog is a medium sized frog, with prominent dorsolateral folds and long legs. The hind legs and lower belly are red underneath, and the red coloring extends to the belly and sides in older frogs. Generally active during the day, California red-legged frogs are usually found near water, but are known to wander over dry land, and can also be found in damp places far from water. California red-legged frogs can be active all year if there is water, or they will find somewhere moist to estivate. The proposed initiative study area is within the known historic range of this species. California red-legged frogs have been documented in the CNDDB within the Santa Clara River and its tributaries, as well as ponds near Leona Valley. Habitat for the California red-legged frog exists within the Castaic/Santa Clarita/Agua Dulce, Acton and Lake Hughes/Gorman/West of Lancaster subareas.

Southern mountain yellow-legged frog is listed as endangered pursuant to the Federal ESA and CESA, as well as a SSC by CDFW, and a sensitive species by the U.S. Forest Service. Critical habitat has been designated for this species by the USFWS. There is less than one acre of critical habitat for southern Mountain yellow-legged frog within a parcel in the East San Gabriel Mountains subarea. The southern mountain yellow-legged frog is a medium-sized frog, without distinct dorsolateral folds. The hind legs and below are a pale orange to yellow. Generally found at higher elevations, southern mountain yellow-legged frogs are diurnal, and found near the water in rocky streams in narrow canyons and in the chaparral belt. The proposed initiative study area is within the known historic range of this species. Recent CNDDB records in the San Gabriel Mountains are located upstream from parcels within the proposed initiative. Habitat for the southern mountain yellow-legged frog exists within the Lake Los Angeles/ Llano/ Valyermo/Littlerock and East San Gabriel Mountains subareas.

Tehachapi slender salamander is listed as threatened pursuant to CESA. No critical habitat has been designated for this species by the USFWS. Habitats are usually those that contain loamy soils, or woodland or hardwood communities capable of producing organic debris to provide the required cover of this species, such as blue oak and gray pine-oak woodlands. The Tehachapi slender salamander is relatively large compared to other slender salamanders, with a broad head, long leads, and broad toes. The proposed initiative study area is within the known historic range of this species. The closest CNDDB records of Tehachapi slender salamanders to the proposed initiative are located approximately five miles to the north of parcels near the intersection of Kern-Los Angeles county border and Interstate 5. Habitat for the Tehachapi slender salamander is found within the Castaic/Santa Clarita/Agua Dulce and Lake Hughes/Gorman/West of Lancaster subareas.

Reptile Species

Desert tortoise is listed as threatened pursuant to the ESA and CESA. There are 14,530 acres of critical habitat for desert tortoise within parcels in the Antelope Valley Northeast subarea. Typical vegetation used by the desert tortoise throughout their geographic range includes Mojave Creosote Bush Scrub, Joshua Tree Woodland, and Joshua Tree Woodland/Juniper Woodland. The proposed initiative study area is within the known historic range of this species. Habitat for the desert tortoise is found within the Lake Hughes/Gorman/West of Lancaster, Lake Los Angeles/Llano/ Valyermo/ Littlerock, Antelope Valley Northeast and Lancaster Northeast subareas; however, areas west of Lancaster/Palmdale are less suitable given much of the area is now dominated by nonnative grasslands. Critical habitat has been designated for this species by the USFWS.

Avian Species

Bald eagle is listed as endangered pursuant to CESA. The bald eagle has been delisted under the Federal ESA. Bald eagles continue to be protected from "take" pursuant to BGEPA, and are a fully protected species in the State of California. As this species has been delisted, no critical habitat is designated for this species. The proposed initiative study area is within the known historic range of this species. Habitat is found within the vicinity of the Castaic/Santa Clarita/Agua Dulce, Lake Hughes/Gorman/West of Lancaster, and East San Gabriel Mountains subareas. This species typically forages over and is found near open water bodies such as lakes and reservoirs. This species winters along Castaic Reservoir, Quail Lake, and Lake Elizabeth. A pair of bale eagles was recently reported to be nesting adjacent to the San Gabriel Reservoir in the East San Gabriel Mountains subarea.

California condor is listed as endangered pursuant to the Federal ESA and CESA. Critical habitat has been designated for this species by the USFWS; however, no critical habitat for the California condor exists within 500 feet of the proposed initiative subarea parcels. California condors are the largest birds in North America, and are scavengers. California condors forage in open grasslands, and nest on cliffs. They are found in central and southern California in the coastal, transverse, and southern Sierra Nevada ranges. The proposed initiative study area is within the known historic range of this species. Foraging habitat is found within the vicinity of the Castaic/Santa Clarita/Agua Dulce and Lake Hughes/Gorman/West of Lancaster subareas, especially within the Sierra Pelona Mountains. These subareas are located within the historic range for this species. More likely, any observations of this species in the subareas will be of individuals moving through the area as they disperse between populations in Sespe Condor Preserve and the Tehachapi Mountains.

Coastal California gnatcatcher is listed as threatened pursuant to the Federal ESA and an SSC by CDFW. There are 1,465 acres of critical habitat for coastal California gnatcatcher within parcels in the Castaic/Santa Clarita/Agua Dulce subarea. This species depends on coastal scrub habitat found along the slopes of the San Gabriel Mountains. The proposed initiative study area is within the known historic range of this species. This species has recently been seen in Santa Clarita Valley within Placerita Canyon. Habitat is found within the Castaic/Santa Clarita/Agua Dulce, Lake Hughes/Gorman/West of Lancaster, and East San Gabriel Mountains subareas, but only Placerita Canyon and portions of the Santa Susana Mountains are highly suitable habitat. Critical habitat has been designated for this species by the USFWS.

Least Bell's vireo is listed as endangered pursuant to the Federal ESA and CESA. Critical habitat has been designated for this species by the USFWS; however, no critical habitat for the least Bell's vireo exists within 500 feet of the proposed initiative subarea parcels. Least Bell's vireos are small songbirds that are a drab gray to green. This species needs riparian areas with dense understory. The proposed initiative study area is within the known historic range of this species. Habitat is found within the Castaic/Santa Clarita/Agua Dulce, Acton, Lake Hughes/Gorman/West of Lancaster, and East San Gabriel Mountains subareas. More specifically, suitable habitat may be provided by riparian habitats associated with the Santa Clara and San Gabriel Rivers, and tributaries with a wide riparian band comprised of willows and cottonwoods.

Southwestern willow flycatcher is listed as endangered pursuant to the Federal ESA and CESA. Critical habitat has been designated for this species by the USFWS; however, no critical habitat for the Southwestern willow flycatcher exists within 500 feet of the proposed initiative subarea parcels. Southwestern willow flycatchers are small flycatchers with drab coloration. They are found in wet brushy areas in riparian habitat with a moderate-dense understory. The proposed initiative

study area is within the known historic range of this species. Generally, there are few records of recent breeding of southwestern willow flycatcher in the Santa Clara River watershed. Habitat is found within the Castaic/Santa Clarita/Agua Dulce, Acton, and East San Gabriel Mountains subareas. More specifically, this species would most likely occur within areas of a broad riparian forest dominated by cottonwood located within San Fransquito Canyon and Soledad Canyon; however, the species could be found nearly anywhere along the Santa Clara River, San Gabriel River, and tributaries.

Swainson's hawk is listed as threatened pursuant to CESA. No critical habitat has been designated for this species by the USFWS. Swainson's hawks are known to migrate through the Antelope Valley and the surrounding areas in Southern California. In addition, a handful of Swainson's hawks nest in the Antelope Valley. The proposed initiative study area is within the known historic range of this species. Habitat is found within the Castaic/Santa Clarita/Agua Dulce, Lake Hughes/Gorman/West of Lancaster, Lake Los Angeles/ Llano/Valyermo/Littlerock, Antelope Valley Northeast and Lancaster Northeast subareas; however, recent breeding has only been documented within the proposed initiative subareas located within the Mojave Desert, usually near agricultural areas where planted trees serve as nest sites.

Tricolored blackbird is a candidate for listing pursuant to CESA. No critical habitat has been designated for this species by the USFWS. Tricolored blackbirds occur in grasslands and agricultural areas and have been experiencing a drastic population decline. As a result, CDFW is currently reviewing a petition to list tricolored blackbird as State endangered. Therefore, this species is currently treated as all other listed species. The proposed initiative study area is within the known historic range of this species. Habitat is found within the Castaic/Santa Clarita/Agua Dulce, Acton, Lake Hughes/Gorman/West of Lancaster, Lake Los Angeles/Llano/Valyermo/Littlerock, and Lancaster Northeast subareas; however, recent breeding has only been documented within the Lake Hughes/Gorman/West of Lancaster subarea particularly at Holiday Lake which is considered the most important tricolored blackbird breeding site in Los Angeles County.

Mammals

Mohave ground squirrel is listed as threatened pursuant to CESA. No critical habitat has been designated for this species by the USFWS. Mohave ground squirrel is found in open desert scrub, alkali scrub, and Joshua tree woodland habitats. It is also known to feed in annual grasslands. The range of the Mohave ground squirrel is restricted to the Mojave Desert where it prefers sandy to gravelly soils and avoids rocky areas. The Mohave ground squirrel usually burrows at the base of shrubs for cover and uses its burrows as nests. The proposed initiative study area is within the known historic range of this species. Habitat is found within the Lake Hughes/Gorman/West of Lancaster, Lake Los Angeles/Llano/Valyermo/Littlerock, Antelope Valley Northeast and Lancaster Northeast subareas. Numerous records of Mohave ground squirrel exist within or in the vicinity of the proposed initiative subareas located within the Mojave Desert.

Nelson's antelope squirrel is listed as threatened pursuant to CESA. Nelson's antelope squirrel is found in the western San Joaquin Valley in chenopod scrub habitat from 200 to 1,200 feet in elevation. Nelson's antelope squirrel is typically found on dry, sparsely vegetated loam soils where it will either dig its own burrows or use old kangaroo rat burrows. This species requires widely scattered shrubs, forbs, and grasses in its habitat and is often found in broken terrain with gullies and washes. The proposed initiative study area is within the known historic range of this species. Habitat is found within the Lake Los Angeles/Llano/Valyermo/Littlerock, Antelope Valley Northeast

and Lancaster Northeast subareas. The most recent record of Nelson's antelope squirrel is south of Highway 18 approximately six miles east of Llano in the Mojave Desert within the Lake Los Angeles/Llano/Valyermo/Littlerock subarea. No critical habitat has been designated for this species by the USFWS.

San Bernardino kangaroo rat is listed as endangered pursuant to the Federal ESA and is a California SSC. Critical habitat has been designated for this species by the USFWS; however, no critical habitat for the San Bernardino kangaroo rat exists within 500 feet of the proposed initiative subarea parcels. The San Bernardino kangaroo rat is found in coastal scrub habitat within alluvial scrub vegetation on sandy loam substrates. This species requires early to intermediate seral stages of coastal scrub habitat. The proposed initiative study area is within the known historic range of this species. Habitat is found within the Lake Los Angeles/Llano/Valyermo/Littlerock, Antelope Valley Northeast and Lancaster Northeast subareas. There are two recent records of San Bernardino Kangaroo Rat within the vicinity of the parcels affected by the proposed initiative. Both records are within the Lake Los Angeles/Llano/Valyermo/Littlerock subarea in the Mojave Desert within the vicinity of Highway 18.

Townsend's Big Eared Bat is listed as a candidate threatened species pursuant to CESA and is a California SSC. No critical habitat has been designated for this species by the USFWS. Habitat for Townsend's big-eared bat ranges throughout most of California in a wide variety of vegetation communities including forest, chaparral, grassland, and scrub habits, but is most common within mesic sites. The proposed initiative study area is within the known historic range of this species. The Townsend's big-eared bat will roost in open habitats and hang from walls and ceilings of buildings. This species of bat is highly sensitive to human roost disturbance and will often abandon a roosting site once it has been discovered by humans. Habitat is found within the Lake Hughes/Gorman/West of Lancaster, Lake Los Angeles/Llano/Valyermo/Littlerock, Antelope Valley Northeast and Lancaster Northeast subareas. There are five records of Townsend's big-eared bat within the vicinity of parcels affected by the proposed initiative.

Fully Protected and Sensitive Species

A total of 75 potentially present species that are considered sensitive or rare in the State of California have the potential to be present in the proposed initiative study area (Table 5.1.1-4, *Total Number of Rare Plants and Sensitive Wildlife Species with the Potential to Occur in Each Subarea;* see Figure 5.1.1-3, *Other Sensitive Plant Species with the Potential to Occur within the Proposed Initiative*; and Figure 5.1.1-4, *Other Sensitive Wildlife Species with the Potential to Occur within the Proposed Initiative*, at the end of this section). This includes: 41 plants, two fish, two amphibians, five reptiles, nine birds, and 16 mammals. There are 41 rare plants and 34 sensitive animals potentially present in the proposed initiative study area. The number of rare plants and sensitive wildlife species within a given subarea ranges from 12 to 49.

TABLE 5.1.1-4
TOTAL NUMBER OF RARE PLANTS AND SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR IN EACH SUBAREA

Number of Potentially Present Rare Plants and Sensitive Wildlife Species	C	A	LH	LL	AV	LN	SG
Plants	16	12	16	14	4	6	27
Fish	1	1	—	—	—	—	2
Amphibians	2	1	1	—	—	—	—
Reptiles	4	4	4	3	—	1	4
Birds	7	6	8	5	2	3	3
Mammals	14	10	15	12	6	7	13
TOTAL*	**44**	**10**	**44**	**34**	**12**	**17**	**49**

KEY: C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains.

NOTE: *Each species may occur in more than one subarea; therefore, the total is not necessarily the sum of the data from each subarea.

Each of the 75 rare plant and sensitive wildlife species with the potential to be present in the proposed initiative subareas is discussed in detail below (Table 5.1.1-5, *Rare Plants and Sensitive Wildlife Species with the Potential to Occur within the Proposed Initiative Area*).

TABLE 5.1.1-5
RARE PLANTS AND SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROPOSED INITIATIVE AREA

Species	Status	Habitat	Potential to Occur within the Proposed Initiative Area						
			C	A	LH	LL	AV	LN	SG
Plants									
alkali mariposa-lily *(Calochortus striatus)*	CRPR 1B.2	Chaparral, Chenopod scrub, Desert wash, Meadow & seep, Mojavean desert scrub, Wetland. Alkaline meadows and ephemeral washes. 90-1595 m.			X	X	X	X	X
Baja navarretia *(Navarretia peninsularis)*	CRPR 1B.2	Chaparral, Lower montane coniferous forest. Wet areas in open forest. 1500-2425 m.	X		X				X
Big Bear Valley woollypod (*Astragalus leucolobus*)	CRPR 1B.2	Lower montane coniferous forest, pebble (pavement) plain, pinyon and juniper woodland, upper montane coniferous forest. Occurs in rocky soils. 1,100 – 2885 m.							X
California satintail *(Imperata brevifolia)*	CRPR 2B.1	Coastal scrub, chaparral, riparian scrub, Mojavean scrub, meadows and seeps (alkali), riparian scrub. Mesic sites, alkali seeps, riparian areas. 0-1215 m.	X	X	X				X
Clokey's cryptantha *(Cryptantha clokeyi)*	CRPR 1B.2	Mojavean desert scrub. Sandy or gravelly soils. One site: 850m.	X	X	X	X			
Davidson's bush-mallow *(Malacothamnus davidsonii)*	CRPR 1B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland. Sandy washes. 185-855 m.	X	X	X	X		X	X
desert cymopterus *(Cymopterus deserticola)*	CRPR 1B.2	Joshua tree woodland, Mojavean desert scrub. Most occurrences located near or in Edwards AFB. On fine to coarse, loose, sandy soil of flats in old dune areas with well-drained sand. 625-910m.			X	X	X	X	
Ewan's cinquefoil (*Drymocallis cuneifolia var. ewanii*)	CRPR 1B.3	Lower montane coniferous forest (near seeps and springs), meadows and seeps. Occurs between 1,900 and 2,400 meters.							X
Greata's aster *(Symphyotrichum greatae)*	CRPR 1B.3	Broadleaved upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Riparian woodland. Mesic canyons. 300-2010 m.	X	X					X
grey-leaved violet (*Viola pinetorum var. grisea*)	CRPR 1B.3	Meadows and seeps, subalpine coniferous forest, upper montane coniferous forest. Occurs between 1,500 and 3,400 meters.							X
Hall's monardella (*Monardella macrantha ssp. hallii*)	CRPR 1B.3	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Occurs between 730 and 2.195 m.							X
Kern Canyon clarkia *(Clarkia xantiana ssp. parviflora)*	CRPR 4.3	Cismontane woodland, Great Basin scrub. Dry slopes. 800-3620 m.	X	X	X	X			
late-flowered mariposa-lily *(Calochortus fimbriatus)*	CRPR 1B.3	Chaparral, Cismontane woodland, Riparian woodland, Ultramafic. Dry, open coastal woodland, chaparral; on serpentine. 275-1905 m.	X						
lemon lily *(Lilium parryi)*	CRPR 1B.2	Lower montane coniferous forest, Meadow & seep, Riparian forest, Upper montane coniferous forest, Wetland. Wet, mountainous terrain; generally in forested areas; on shady edges of streams, in open boggy meadows & seeps. 1220-2745 m.				X			X
Lincoln rockcress *(Boechera lincolnensis)*	CRPR 2B.3	Chenopod scrub, Limestone, Mojavean desert scrub. On limestone. 1100-2075m.			X				
Mason's neststraw *(Stylocline masonii)*	CRPR 1B.1	Chenopod scrub, Desert wash, Pinyon & juniper woodlands. Sandy washes. 100-1200 m.	X	X					
Newhall sunflower *(Helianthus inexpectatus)*	CRPR 1B.1	Marsh & swamp, Meadow & seep, wetland, riparian woodland. 305 m.	X						
Ojai navarretia *(Navarretia ojaiensis)*	CRPR 1B.1	Chaparral, Coastal scrub, Valley & foothill grassland. Openings in shrublands or grasslands. 275-620 m.	X	X					
Palmer's mariposa-lily *(Calochortus palmeri var. palmeri)*	CRPR 1B.2	Chaparral, Lower montane coniferous forest, Meadow & seep. Vernally moist places in yellow-pine forest, chaparral. 1000-2390 m.			X	X			X
Peirson's lupine (*Lupinus peirsonii*)	CRPR 1B.3	Joshua tree woodland, lower montane coniferous forest, pinyon and juniper woodland, lower montane coniferous forest, pinyon and							X

TABLE 5.1.1-5
RARE PLANTS AND SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROPOSED INITIATIVE, *Continued*

Species	Status	Habitat	Potential to Occur within the Proposed Initiative Area						
			C	A	LH	LL	AV	LN	SG
		juniper woodland, upper montane coniferous forest. Occurs in gravelly or rocky soil between 1,000 and 2,500 m.							
Peirson's morning-glory *(Calystegia peirsonii)*	CRPR 4.2	Chaparral, Chenopod scrub, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley & foothill grassland. Often in disturbed areas or along roadsides or in grassy, open areas. 30-1500 m.	X	X	X	X			
Piute Mountains navarretia *(Navarretia setiloba)*	CRPR 1B.1	Cismontane woodland, Pinyon & juniper woodlands, Valley & foothill grassland. Red clay soils, other clay soils (?), or on gravelly loam. 285-2100 m.	X	X	X				
Plummer's mariposa-lily *(Calochortus plummerae)*	CRPR 4.2	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley & foothill grassland. Occurs on rocky and sandy sites, usually of granitic or alluvial material. Can be very common after fire. 100-1700 m.	X	X					X
Robinson's pepper-grass (*Lepidium virginicum var. robinsonii*)	CRPR 4.3	Chaparral and coastal scrub habitat. Occurs between 1 and 885 m.							X
Rock Creek broomrape *(Orobanche valida ssp. valida)*	CRPR 1B.2	Chaparral, Pinyon & juniper woodlands. On slopes of loose decomposed granite; parasitic on various chaparral shrubs. 1705-1820m.				X			X
round-leafed filaree (*California macrophylla*)	CRPR 1B.1	Cismontane woodland, Valley & foothill grassland. Clay soils. 15-1200 m.	X		X				
Rosamond eriastrum (*Eriastrum rosamondense*)	CRPR 1B.1	Chenopod scrub and vernal pool habitat. Occurs in alkaline hummocks often in sandy soils. 700 to 715 m.						X	
sagebrush loeflingia *(Loeflingia squarrosa var. artemisiarum)*	CRPR 2B.2	Desert dunes, Great Basin scrub, Sonoran desert scrub. Sandy flats and dunes. Sandy areas around clay slicks w/Sarcobatus, Atriplex, Tetradymia, etc. 700-1615 m.			X	X	X	X	
San Antonio milk-vetch (*Astragalus lentiginosus var. antonius*)	CRPR 1B.3	Lower and upper montane coniferous forests, occurs between 1,500 and 2,600 m.							X
San Bernardino aster *(Symphyotrichum defoliatum)*	CRPR 1B.2	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Valley & foothill grassland, Wetland. Vernally mesic grassland or near ditches, streams and springs; disturbed areas. 2-2040m.			X				X
San Gabriel bedstraw (*Galium grande*)	CRPR 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest. Occurs between 425 and 1,500 m.							X
San Gabriel linanthus (*Linanthus concinnus*)	CRPR 1B.2	Chaparral, lower montane coniferous forest, upper montane coniferous forest. Occurs in rocky openings between 1,520 and 2,800 m.				X			X
San Gabriel manzanita (*Arctostaphylos glandulosa ssp. gabrielensis*)	CRPR 1B.2	Chaparral habitat in rocky soil. Occurs between 595 and 1,500 m.							X
San Gabriel Mountains dudleya (*Dudleya densiflora*)	CRPR 1B.1	Chaparral, cismontane woodland, coatal scrub, lower montane coniferous forest , riparian woodland. Found in granitic soils on cliffs and canyon walls. Between 244 and 610 m.							X
short-jointed beavertail *(Opuntia basilaris var. brachyclada)*	CRPR 1B.2	Chaparral, Joshua tree woodland, Mojavean desert scrub, Pinyon & juniper woodlands, Riparian woodland. Sandy soil or coarse, granitic loam. 425-1800 m.	X	X	X	X			X
slender mariposa-lily *(Calochortus clavatus var. gracilis)*	CRPR 1B.2	Chaparral, Coastal scrub, Valley & foothill grassland. Shaded foothill canyons; often on grassy slopes within other habitat. 320-1000 m.	X	X	X	X			X
Sonoran maiden fern (*Thelypteris puberula var. sonorensis*)	CRPR 2B.2	Meadow and seep, streams, wetland. Between 50 and 610 meters.							X
southern alpine buckwheat (*Eriogonum kennedyi var. alpigenum*)	CRPR 1B.3	Alpine boulder and rock field, subalpine coniferous forest. Found in granitic and gravelly soils. Between 2,600 and 3,500 m.							X
western sedge (*Carex occidentalis*)	CRPR 2B.3	Lower montane coniferous forests, meadeows and seeps. Between 1,645 and 3,135 m.							X
white pygmy-poppy *(Canbya candida)*	CRPR 4.2	Joshua tree woodland, Mojavean desert scrub, Pinyon & juniper woodlands. Sandy places. 600-1460 m.				X	X	X	
woolly mountain-parsley (*Oreonana vestita*)	CRPR 1B.3	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest; found in gravel or talus; between 1,615 and 3,500 m.							X

TABLE 5.1.1-5
RARE PLANTS AND SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROPOSED INITIATIVE, *Continued*

Species	Status	Habitat	Potential to Occur within the Proposed Initiative Area						
			C	A	LH	LL	AV	LN	SG
Fish									
arroyo chub (*Gila orcuttii*)	SSC/FS	Aquatic, South coast flowing waters. Native to streams from Malibu Cr to San Luis Rey River basin. Introduced into streams in Santa Clara, Ventura, Santa Ynez, Mohave & San Diego river basins. Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation & associated invertebrates.	X	X					X
Santa Ana speckled dace (*Rhinichthys osculus* ssp. 3)	SSC	Aquatic, south coast flowing waters; freshwater creeks, shallow gravel and cobble riffles.							X
Amphibians									
western spadefoot (*Spea hammondii*)	SSC	Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland. Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	X	X					
yellow-blotched salamander (*Ensatina eschscholtzii croceator*)	SSC/FS	Broadleaved upland forest, Chaparral. Forests and well-shaded canyons, as well as oak woodlands and old chaparral. Needs surface objects, such as logs, boards, and rocks. Also needs old rodent burrows or other underground retreats.	X		X				
Reptiles									
California mountain kingsnake (San Bernardino population) (*Lampropeltis zonata (parvirubra*)	SSC	Coniferous forest, oak-pine woodland, riparian woodland, chaparral, manzanita, coastal sage scrub. Often found near streams and rock outcrops.							X
coast horned lizard (*Phrynosoma blainvillii*)	SSC	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Desert wash, Pinyon & juniper woodlands, Riparian scrub, Riparian woodland, Valley & foothill grassland. Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, & abundant supply of ants & other insects.	X	X	X	X			X
silvery legless lizard (*Anniella pulchra pulchra*)	SSC/FS	Chaparral, Coastal dunes, Coastal scrub. Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	X	X	X	X		X	
two-striped garter snake (*Thamnophis hammondii*)	SSC	Marsh & swamp, Riparian scrub, Riparian woodland, Wetland. Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	X	X	X	X			X
western pond turtle (*Emys marmorata*)	SSC/FS	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland. A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	X	X	X				X
Birds									
American peregrine falcon (*Falco peregrinus anatum*)	FDEL/ FP nesting	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	X	X	X	X			X
black swift (*Cypseloides niger*)	SSC	Coastal bluffs, canyons with waterfalls; aerial; forages over forests and in open areas; may forage far from nesting sites; nests behind or next to waterfalls and wet cliffs, on sea cliffs and in sea caves, and occasionally in limestone caves; nests in dark inaccessible sites with unobstructed flight path; nest is a cup-like structure of mud, mosses and algae.							X
burrowing owl (*Athene cunicularia*)	SSC	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland. Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	X	X	X	X	X	X	
golden eagle (*Aquila chrysaetos*)	BGEPA/FP	Broadleaved upland forest, Cismontane woodland, Coastal prairie, Great Basin grassland, Great Basin scrub, Lower montane coniferous forest, Pinyon & juniper woodlands, Upper montane coniferous forest, Valley & foothill grassland. Rolling foothills, mountain areas, sage-juniper flats, & desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	X	X	X	X			
grasshopper sparrow (*Ammodramus savannarum*)	SSC	Valley & foothill grassland. Dense grasslands on rolling hills, lowland plains, in valleys & on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs & scattered shrubs. Loosely colonial when nesting.	X		X				
loggerhead shrike (*Lanius ludovicianus*)	SSC	Broadleaved upland forest, Desert wash, Joshua tree woodland, Mojavean desert scrub, Pinon & juniper woodlands, Riparian woodland, Sonoran desert scrub. Broken woodlands, savannah, pinyon-juniper, Joshua tree, & riparian woodlands, desert oases, scrub & washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	X	X	X	X	X	X	X
mountain plover (*Charadrius montanus*)	SSC	Chenopod scrub, Valley & foothill grassland. Short grasslands, freshly plowed fields, newly sprouting grain fields, & sometimes sod farms. Short vegetation, bare ground & flat topography. Prefers grazed areas & areas with burrowing rodents.			X	X		X	

TABLE 5.1.1-5
RARE PLANTS AND SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROPOSED INITIATIVE, *Continued*

Species	Status	Habitat	Potential to Occur within the Proposed Initiative Area						
			C	A	LH	LL	AV	LN	SG
white-tailed kite *(Elanus leucurus)*	FP	Cismontane woodland, Marsh & swamp, Riparian woodland, Valley & foothill grassland, Wetland. Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	X	X	X				
yellow warbler *(Dendroica petechia brewsteri)*	SSC nesting	Riparian forest, Riparian scrub, Riparian woodland. Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	X	X	X				
Mammals									
American badger *(Taxidea taxus)*	SSC	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Great Basin grassland, Great Basin scrub, Interior dunes, Ione formation, Joshua tree woodland, Limestone, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Mojavean desert scrub, Montane dwarf scrub, North coast coniferous forest, Old growth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic, Upper montane coniferous forest, Upper Sonoran scrub, Valley & foothill grassland. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils & open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	X	X	X	X	X	X	X
desert bighorn sheep (*Ovis canadensis nelsoni*)	FP	Alpine, alpine dwarf scrub, chaparral, chenopod scrub, great basin scrub, Mojavean desert scrub, pinyon and juniper woodlands, riparian woodland, Sonoran desert scrub. This species prefers steep and rocky habitat on or near mountainous terrain above the desert floor.							X
fringed myotis *(Myotis thysanodoes)*	WBWG:H, FS	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood & hardwood-conifer. Uses caves, mines, buildings or crevices for maternity colonies and roosts.	X	X	X	X	X	X	X
hoary bat *(Lasiurus cinereus)*	WBWG:M	Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North coast coniferous forest. Prefers open habitats or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water. Ranges throughout most of California.	X	X	X	X			X
long-eared myotis *(Myotis evotis)*	WBWG:M	Found in all brush, woodland & forest habitats from sea level to about 9000 ft. prefers coniferous woodlands & forests. Also found in grassland/herbaceous and shrubland/chaparral habitats. Nursery colonies in buildings, crevices, spaces under bark, & snags. Also roosts in buildings, caves, hollow trees, and mines. Caves used primarily as night roosts.	X	X	X	X			X
pallid bat *(Antrozous pallidus)*	SSC/ WBWG:H, FS	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland. Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	X	X	X	X			X
pallid San Diego pocket mouse *(Chaetodipus fallax pallidus)*	SSC	Desert wash, Pinyon & juniper woodlands, Sonoran desert scrub. Desert border areas in eastern San Diego Co. in desert wash, desert scrub, desert succulent scrub, pinyon-juniper, etc. Sandy herbaceous areas, usually in association with rocks or coarse gravel.	X	X	X	X	X	X	X
San Diego black-tailed jackrabbit *(Lepus californicus bennettii)*	SSC	Coastal scrub. Intermediate canopy stages of shrub habitats & open shrub / herbaceous & tree / herbaceous edges. Coastal sage scrub habitats in Southern California.	X		X				X
San Diego desert woodrat *(Neotoma lepida intermedia)*	SSC	Coastal scrub. Coastal scrub of Southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops & rocky cliffs & slopes.	X		X				X
silver-haired bat *(Lasionycteris noctivagans)*	WBWG:M	Lower montane coniferous forest, old growth, riparian forest. Primarily a coastal & montane forest dweller feeding over streams, ponds & open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes & rarely under rocks. Primarily forested areas adjacent to lakes, ponds, or streams, including areas that have been altered by humans. Summer roosts and nursery sites are in tree foliage, cavities, or under loose bark, sometimes in buildings.	X	X	X	X			X
southern grasshopper mouse *(Onychomys torridus ramona)*	SSC	Chenopod scrub. Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions & orthopteran insects.	X		X	X			
spotted bat (*Euderma maculatum*)	SSC/ WBWG:M	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water and along washes. Feeds almost entirely on moths. Needs rock crevices in cliffs or caves for roosting.	X		X	X	X	X	
Tehachapi pocket mouse *(Perognathus alticolus inexpectatus)*	SSC/FS	Chaparral, Joshua tree woodland, Valley & foothill grassland. Arid annual grassland & desert shrub communities, but also taken in fallow grain field & in Russian thistle. Burrows for cover & nesting. Aestivates and hibernates during extreme weather. Forages on open ground & under shrubs.			X				

TABLE 5.1.1-5
RARE PLANTS AND SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROPOSED INITIATIVE, *Continued*

Species	Status	Habitat	Potential to Occur within the Proposed Initiative Area						
			C	A	LH	LL	AV	LN	SG
western mastiff bat *(Eumops perotis californicus)*	SSC/ WBWG:H	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland. Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral etc. Roosts in crevices in cliff faces, high buildings, trees & tunnels. This species can utilize a variety of habitat types including chaparral, oak woodland, pine forests, agricultural areas and desert washes; roosts primarily in vertical rock crevices on cliffs; common in open habitats when foraging.	X	X	X	X	X	X	X
western small-footed myotis *(Myotis ciliolabrum)*	WBWG:M	Bare rock/talus/scree, cliff, grassland/herbaceous, shrubland/chaparral, conifer woodland, mixed woodland. Also common in arid desert, badland, and semiarid habitats. Roosts primarily in caves and trees, and is extremely sensitive to the disturbance of roosting sites; will abandon the maternity roost if disturbed.	X	X	X	X	X	X	X
Yuma myotis *(Myotis yumanensis)*	WBWG:LM	Lower montane coniferous forest, Riparian forest, Riparian woodland, Upper montane coniferous forest. Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.	X	X	X	X		X	X
TOTAL			**44**	**34**	**44**	**34**	**12**	**17**	**49**

KEY: SSC = California species of special concern; BGEPA = Bald and Golden Eagle Protection Act; FDEL = federal delisted species; CRPR = California Rare Plant Rank; FS = Forest Service Sensitive; SDEL = State delisted species; CNDDB = California Natural Diversity Database; CNPS = California Native Plant Society. C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains.

NOTE:

Western Bat Working Group categories:

WBWG:H = High Priority, WBWG:M = Medium Priority, WBWG:LM = Low-Medium Priority

CNPS categories:

California Rare Plant Rank: List 1B: Rare, threatened, or endangered in California and elsewhere (0.1: Seriously endangered in California, 0.2: Fairly endangered in California, 0.3: Not very endangered in California)

List 2: Rare, threatened, or endangered in California, but more common elsewhere (0.2: Fairly endangered in California)

List 3: Review list, more information required; List 4: Limited distribution (Watch List) (0.1: Seriously endangered in California, 0.2: Fairly Endangered in California, 0.3: Not very endangered in California).

Plant Species

There are 41 rare plant species with historic ranges and records present within the proposed initiative study area. Seven of these species have a CNPS ranking of 1B.1, indicating that they are rare, threatened, or endangered in California and elsewhere and seriously threatened in California with over 80 percent of occurrences of the plant threatened and a high degree and immediacy of threat: Mason's neststraw, Newhall sunflower, Ojai navarretia, Piutte Mountains navarretia, round-leafed filaree, Rosamond eriastrum, and San Gabriel Mountains dudleya.

Fifteen of these species have a CNPS ranking of 1B.2 indicating that they are rare, threatened, or endangered in California and elsewhere and moderately threatened in California with 20 to 80 percent occurrences threatened and a moderate degree and immediacy of threat: alkalai mariposa-lily, baja navarretia, Big Bear Valley woollypod, Clokey's cryptantha, Davidson's bush-mallow, desert cympoterus, lemon lily, Palmer's mariposa-lily, rock creek broomrape, San Bernardino aster, San Gabriel bedstraw, San Gabriel linanthus, San Gabriel manzanita, short-jointed beavertail, and slender mariposa lily.

Nine of these species have a CNPS ranking of 1B.3 indicating that they are rare, threatened, or endangered in California and elsewhere and not very threatened in California with less than 20 percent of occurrences threatened and a low degree and immediacy of threat or no current threats known: Ewan's cinquefoil, Greata's Aster, grey-leaved violet, Hall's monardella, late-flowered mariposa-lily, Peirson's lupine, San Antonio milk-vetch, southern alpine buckwheat, and woolly mountain-parsley.

One species, California satintail, has a CNPS ranking of 2B.1, indicating that it is rare, threatened, or endangered in California but more common elsewhere and is seriously threatened in California with over 80 percent of occurrences of the plant threatened and a high degree and immediacy of threat. Two species, sagebrush loeflingia and Sonoran maiden fern, have a CNPS ranking of 2B.2, indicating that they are rare, threatened, or endangered in California but more common elsewhere and are moderately threatened in California with 20 to 80 percent occurrences threatened and a moderate degree and immediacy of threat. Two species, Lincoln rockcress and western sedge, have a CNPS ranking of 2B.3, indicating that they are rare, threatened, or endangered in California but more common elsewhere and not very threatened in California with less than 20 percent of occurrences threatened and a low degree and immediacy of threat or no current threats known.

Three species, Peirson's morning-glory, Plummer's mariposa-lily, white pygmy-poppy, have a CNPS ranking of 4.2 indicating that they are Watch List species with limited distribution that are moderately threatened in California with 20 to 80 percent occurrences threatened and a moderate degree and immediacy of threat. Two species, Kern Canyon clarkia and Robinson's pepper-grass, have a CNPS ranking of 4.3 indicating that they are a Watch List species with limited distribution and are and not very threatened in California with less than 20 percent of occurrences threatened and a low degree and immediacy of threat or no current threats known.

Of these species, 66 percent are potentially present in the East San Gabriel Mountains subarea, 39 percent are potentially present in the Lake Hughes/Gorman/West of Lancaster subarea, 39 percent are potentially present in the Castaic/Santa Clarita/Agua Dulce subarea, 34 percent are potentially present in the Lake Los Angeles/Llano/Valyermo/Littlerock subarea, 29 percent are potentially present in the Acton subarea, 15 percent are potentially present in the Lancaster Northeast and East San Gabriel Mountains subareas, and 10 percent are potentially present in the Antelope Valley Northeast subarea.

The high percentage of potentially present plant species in the Acton, Lake Hughes/Gorman/West of Lancaster, and Lake Los Angeles/Llano/Valyermo/Littlerock subareas is likely due to the presence of transition areas between mountainous and desert habitats allowing for the diversity of plants and plant community types. In contrast, there is a smaller percentage of potentially present plants in the Lancaster Northeast and Antelope Valley Northeast subareas because desert sensitive plants tend to congregate around alkali areas which are concentrated in small areas in the desert habitats. The high percentage of potentially present plants in the East San Gabriel Mountains subarea is primarily because this subarea covers the broadest area and includes the San Gabriel Mountains, which have a high elevation gradient and are habitat for rare endemic plants. There is a high percentage of potentially present plants in the Castaic/Santa Clarita/Agua Dulce subarea because there is a high number and diversity of plant communities in this subarea and the Santa Clara River and Cruzan Vernal Pools are present in this subarea.

Fish Species

There are two sensitive fish species with historic ranges and records present within the proposed initiative study area: arroyo chub and Santa Ana speckled dace. Both species are California SSC and USFWS sensitive species. The arroyo chub is a small fish that is found in south coast flowing waters in southern California. It is found in small to medium rivers, creeks, and intermittent streams. The arroyo chub only has the potential to be present in the Castaic/Santa Clarita/Agua Dulce, Acton, and East San Gabriel Mountains subareas because these subareas contain the only habitat for this species, the Santa Clara River and the San Gabriel River. The Santa Ana speckled dace is also small fish found in south coast flowing waters and is also found in freshwater creeks, particularly those with shallow gravel and cobble riffles. The range of the Santa Ana speckled dace is limited the Los Angeles, Santa Ana, and San Gabriel Rivers. The Santa Ana speckled dace only has the potential to be present in the East San Gabriel Mountains subarea because this subarea contains the only habitat in the study area for this species, the San Gabriel River.

Amphibian Species

There are two sensitive amphibian species with historic ranges and records present within the proposed initiative study area: western spadefoot and yellow-blotched salamander. Both species are California SSC, and the yellow-blotched salamander is also a USFWS sensitive species. The western spadefoot only has the potential to be present within the Castaic/Santa Clarita/Agua Dulce and Acton subareas. Historical records for the western spadefoot within the proposed initiative study area occur only within the vicinity of these subareas and these subareas contain the only habitat for western spadefoot in the proposed initiative study area within the Santa Clara River. Historical records for the yellow-blotched salamander in the proposed initiative study area only occur within the vicinity of the Lake Hughes/Gorman/West of Lancaster subarea. However, habitat for this species also occurs within well-shaded canyon areas within the Castaic/Santa Clarita/Agua Dulce subarea.

Reptile Species

There are five sensitive reptile species with historic ranges and records present within the proposed initiative study area: California mountain kingsnake (San Bernardino population), coast horned lizard, silvery legless lizard, two-striped garter snake, and western pond turtle. All of these species are California SSC, and California mountain kingsnake, silvery legless lizard, and western pond turtle are also USFWS sensitive species. None of these species have the potential to be present in

the Antelope Valley Northeast subareas as this subarea does not contain habitat for any of these species, and there are no records of these species in this subarea. Historical records within the proposed initiative study area for the California mountain kingsnake (San Bernardino population) only exist within the East San Gabriel Mountains subarea, as this is the only subarea that is within the historical range for this subspecies.

Three of the five species, coast horned lizard, two-striped garter snake, and western pond turtle, have the potential to be present within the Acton, Castaic/Santa Clarita/Agua Dulce, Lake Hughes/Gorman/West of Lancaster, and East San Gabriel Mountains subareas due to historical records of these species and habitat within the vicinity of these subareas. With the exception of the western pond turtle, these three species also have the potential to be present in the Lake Los Angeles/Llano/Valyermo/Littlerock subarea as a result of habitat and historical records of these species in this subarea. There is no potential for the western pond turtle to be present in the Lake Los Angeles/Llano/Valyermo/Littlerock subarea because this subarea lacks the aquatic habitat typically required by this species. The silvery legless lizard has the potential to be present in the Acton, Castaic/Santa Clarita/Agua Dulce, Lake Hughes/Gorman/West of Lancaster, Lake Los Angeles/Llano/Valyermo/Littlerock, and Lancaster Northeast subareas as a result of habitat and historical records of this species in these subareas.

Avian Species

There are nine sensitive bird species with historic ranges and records present within the proposed initiative study area. Mountain Plovers generally congregate near agricultural areas. Agricultural areas east and west of Lancaster are especially important overwintering areas for Mountain Plover. As such, mountain plover has the potential to be present within the Lake Hughes/Gorman/West of Lancaster, Lake Los Angeles/Llano/Valyermo/Littlerock, and Lancaster Northeast subareas. Peregrine Falcons and Golden Eagle can occur anywhere during migration and winter; however, subareas with portions located in the mountains are foraging habitat for both species. Nesting habitat on the proposed initiative parcels is unlikely given the terrain (i.e., lack of cliffs), current level of development, and the availability of better quality nesting habitat within adjacent, remote mountains. As such, these two species are both potentially present within the Acton, Castaic/Santa Clarita/Agua Dulce, Lake Hughes/Gorman/West of Lancaster, and Lake Los Angeles/Llano/Valyermo/Littlerock subareas. The American peregrine falcon is also potentially present in the East San Gabriel Mountains subarea due to the presence of large reservoirs in the subarea as is the black swift, which requires large forests and wet cliffs present in the San Gabriel Mountains. In contrast, loggerhead shrike and burrowing owl can occur almost anywhere within the study area, but the burrowing owl tends to be more abundant in areas with burrowing ground animals. As such, both species are potentially present in all seven subareas, with the exception of burrowing owl which is not present in the East San Gabriel Mountains subarea only. Grasshopper Sparrow is a rare grassland sparrow that could occur within grasslands of the Lake Hughes/Gorman/West of Lancaster and Castaic/Santa Clarita/Agua Dulce subareas but there are scant records in Los Angeles County, although it was documented in 2013 in the Santa Clarita Valley. White-Tailed Kite is similar, but generally needs oak interspersed within grassland; areas that meet this condition are along the southern portions of the Santa Clarita Valley and western portions of Portal Ridge in the Acton, Castaic/Santa Clarita/Agua Dulce, and Lake Hughes/Gorman/West of Lancaster subareas. Yellow Warbler has habitat within the Santa Clara River and tributaries, generally within cottonwoods and large willow trees and are potentially present in the Acton, Castaic/Santa Clarita/Agua Dulce, and Lake Hughes/Gorman/West of Lancaster subareas.

Mammal Species

There are 16 sensitive mammal species with historic ranges and records present within the proposed initiative study area: American badger, desert bighorn sheep, fringed myotis, hoary bat, long-eared myotis, pallid bat, pallid San Diego pocket mouse, San Diego black-tailed jackrabbit, San Diego desert woodrat, silver-haired bat, southern grasshopper mouse, Tehachapi pocket mouse, western mastiff bat, western small-footed myotis, and yuma myotis. The American badger, pallid bat, pallid San Diego pocket mouse, San Diego black-tailed jackrabbit, San Diego desert woodrat, southern grasshopper mouse, spotted bat, Tehachapi pocket mouse, and western mastiff bat are all California Species of Special Concern. The desert bighorn sheep is a California Fully Protected Species. All of the bat species have sensitivity rankings designated by the Western Bat Working Group.

Of these 16 species, 15 species are potentially present in the Lake Hughes/Gorman/West of Lancaster subarea, 14 species are potentially present in the Castaic/Santa Clarita/Agua Dulce subarea, 13 species are potentially present in the East San Gabriel Mountains subarea, 12 species are potentially present in the Lake Los Angeles/Llano/Valyermo/Littlerock subarea, 10 species are potentially present in the Acton subarea, seven species are potentially present in the Lancaster Northeast subarea, and six species are potentially present in the Antelope Valley Northeast subarea.

With the exception of the desert bighorn sheep and Tehachapi pocket mouse, all of these mammal species have the potential to be present within the Castaic/Santa Clarita/Agua Dulce due to the presence of historical records and habitat. The Tehachapi pocket mouse is an isolated subspecies that is only found within the Tehachapi Mountains. The western range of the desert bighorn sheep is limited to the San Gabriel Mountains. In addition, all of the mammal species are potentially present in the Lake Hughes/Gorman/West of Lancaster subarea with the exception of desert bighorn sheep. The only mammal species potentially present within the Antelope Valley Northeast subarea are species that are adapted to and commonly found in arid desert environments.

The high number of potentially present mammal species in the Acton, Lake Hughes/Gorman/West of Lancaster, and Lake Los Angeles/Llano/Valyermo/Littlerock subareas is likely due to the presence of transition areas between mountainous and desert habitats allowing for the diversity of habitat types to support several mammal species. In contrast, there are a smaller number of potentially present mammals in the Lancaster Northeast and Antelope Valley Northeast subareas due to the arid desert environments and limited habitat diversity. The high number of potentially present mammals in the East San Gabriel Mountains subarea is primarily because this subarea covers the broadest area and includes the San Gabriel Mountains which are habitat for rare endemic species. There is a high number of potentially present mammals in the Castaic/Santa Clarita/Agua Dulce subarea because there is a high number and diversity of habitat types in this subarea and the Santa Clara River and Cruzan Vernal Pools are present in this subarea which provide year-round aquatic resources that are essential to the persistence of many mammal species.

Locally Important Species

The proposed initiative study area is within the known historic range for 12 common plant species that are protected under the Desert Native Plant Act (DNPA) and two mammals protected under fur-bearing mammal regulations (Table 5.1.1-6, *Locally Important Species with the Potential to Occur within the Proposed Initiative Area*). Plants protected by the DNPA require coordination with the sheriff or commissioner of the county where harvesting will occur prior to their removal. Authorization of plant removal may also include the requirement to pay county-designated fees. Plants protected by the DNPA are not limited to only subareas within the Mojave Desert as a few of these species also occur in coastal scrub habitats. Fur-bearing mammals protected by the California Code of Regulations Title 14 cannot be taken at any time. The number of locally important species within a given subarea ranges from three to 12.

TABLE 5.1.1-6
LOCALLY IMPORTANT SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE PROPOSED INITIATIVE AREA

Species	Status	Habitat	Potential to Occur within the Proposed Initiative Area						
			C	A	LH	LL	AV	LN	SG
Plants									
Beavertail cactus (*Opuntia basilaris* var. *basilaris*)	DNPA	Creosote bush scrub, Joshua tree woodland, chaparral, southern oak woodland, coastal sage scrub, pinyon-juniper woodland, valley grassland.	X	X	X	X	X	X	X
Branched pencil cholla (*Cylindropuntia ramosissima*)	DNPA	Creosote bush scrub, Joshua Tree woodland.			X	X	X	X	
Buck horn cholla (*Cylindropuntia acanthocarpa*)	DNPA	Creosote bush scrub, Joshua Tree woodland. <1,600 m.			X	X	X	X	
Cane cholla (*Cylindropuntia californica var. parkeri*)	DNPA	Chaparral, Pinyon-juniper woodland. 700-1,900 m.	X	X					
Chaparral yucca (*Hesperoyucca whipplei*)	DNPA	Chaparral, Coastal Sage Scrub, Creosote Bush Scrub, Joshua Tree Woodland, Pinyon-Juniper Woodland, Yellow Pine Forest.	X	X	X	X			X
Desert holly (*Atriplex hymenelyta*)	DNPA	Creosote bush scrub.			X	X	X	X	
Honey mesquite (*Prosopis glandulosa*)	DNPA	Creosote bush scrub, alkali sink.			X	X	X	X	
Joshua Tree (*Yucca brevifolia*)	DNPA	Joshua tree woodland.			X	X	X	X	
Mojave prickly pear (*Opuntia phaeacantha*)	DNPA	Joshua Tree woodland, Pinyon-Juniper woodland.			X	X	X	X	
Panamint dudleya (*Dudleya saxosa*)	DNPA	Creosote Bush Scrub, Pinyon-Juniper Woodland, Chaparral.			X	X	X	X	
Western prickly pear (*Opuntia litttoralis*)	DNPA	Coastal sage scrub.	X	X					
Wiggins' cholla (*Cylindropuntia echinocarpa*)	DNPA	Creosote bush scrub, Joshua tree woodland, pinyon-juniper woodland.			X	X	X	X	
Mammals									
red fox (*Vulpes vulpes*)	FBM	Wide range of habitats. Coastal scrub, grasslands, woodlands and forests.	X	X	X	X			X
desert kit fox (*Vulpes macrotis macrotis*)	FBM	Occur within desert habitats, such as creosote bush scrub.			X	X	X	X	
TOTAL			**5**	**5**	**12**	**12**	**10**	**10**	**3**

KEY: DNPA = Desert Native Plant Act; FBM = Furbearing Mammal. C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains.

5.1.2 Riparian Communities and State-Designated Sensitive Habitat

Data Sources

Two data sources were used to analyze riparian habitat and other sensitive plant communities: DRECP and CalVeg (see Section 4.0, *Methods*, for a detailed explanation of these data sets). Parcels located within the Mojave Desert have DRECP plant community data available, but parcels south of the Mojave Desert only have CalVeg plant community data available. No overlap exists between the two data sets on any individual parcel; however, a single subarea may be covered by both data sets. The parcels within the Castaic/Santa Clarita/Agua Dulce subarea exist exclusively within the CalVeg data set and parcels within the Antelope Valley Northeast and Lancaster Northeast subareas exist exclusively within the DRECP data set. All other proposed initiative subareas are covered by both data sets to some degree, such that the entirety of the proposed initiative study area was covered by these data sets (see Figure 5.1.2-1, *CalVeg Plant Communities Present within the Proposed Initiative Subareas*; and Figure 5.1.2-2, *DRECP Plant Communities Present within the Proposed Initiative Subareas*, at the end of this section). Communities in both of these data sets were converted to standard plant communities recognized by CDFW (based on *A Manual of California Vegetation*, second edition).[3] As such, the analysis of the riparian habitats and sensitive plant communities below is presented for both the DRECP and CalVeg datasets. This allowed for the entirety of the study area to be analyzed for potentially present sensitive plant communities.

Sensitive Plant Communities

Based on the existing data and brief field visits, there are 136 plant community alliances with the *potential* of being present on parcels within the proposed initiative study area (Table 5.1.2-1, *Plant Communities Potentially Present within the Proposed Initiative Area*). This includes 27 woodland/forest alliances, 74 shrubland alliances, and 35 herbaceous alliances. Of the 137 plant community alliances, there are 59 State-designated sensitive habitats, including 55 plant community alliances and four additional alliances that have a sensitive association.

[3] Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation. Second Edition. Sacramento, CA: California Native Plant Society Press.

TABLE 5.1.2-1
PLANT COMMUNITIES POTENTIALLY PRESENT WITHIN THE PROPOSED INITIATIVE AREA

State Rarity Ranking	MCV Plant Community Name	Potential Wetland/Riparian Community	CalVeg Designation	DRECP dominant plants or NVCS groupings
Woodland Alliances				
S3.2	*Fraxinus latifolia* Oregon Ash Groves	Yes	White Alder	
	Juglans californica California Walnut Groves	No	California Walnut	
	Populus fremontii Fremont Cottonwood Forest	Yes	Bigcone Douglas-Fir, Fremont Cottonwood, Riparian Mixed Hardwood, Riparian Mixed Shrub, Willow, Willow (Shrub)	Madrean Warm Semi-Desert Wash Woodland/Scrub, *Populus fremontii*
	Prosopis glandulosa Mesquite Thicket	Yes		Madrean Warm Semi-Desert Wash Woodland/Scrub, *Prosopis glandulosa*
	Pseudotsuga macrocarpa Bigcone Douglas Fir Forest	No	Bigcone Douglas-Fir	*Pseudotsuga macrocarpa*
	Salix lucida (lasiandra) Shining Willow Thicket	Yes	Willow	
	Yucca brevifolia Joshua Tree Woodland	No	Joshua Tree, Semi-desert Chaparral	*Yucca brevifolia*
S3	*Aesculus californica* California buckeye scrub	No	California Buckeye	*Aesculus californica*
	Platanus racemosa California Sycamore Woodland	Yes	California Sycamore, Willow	Madrean Warm Semi-Desert Wash Woodland/Scrub, *Platanus racemosa*
	Populus trichocarpa Black Cottonwood Forest	Yes	Coastal Mixed Hardwood	
	Quercus lobata Valley Oak Woodland	No	Gray Pine, Interior Mixed Hardwood, Valley Oak	*Quercus douglasii, Quercus lobata*
	Salix gooddingii Black Willow Thicket	Yes	Willow	
	Salix laevigata Red Willow Thicket	Yes	Riparian Mixed Hardwood, Willow, Willow (Shrub)	*Salix laevigata*
	Umbellularia californica California Bay Forest	No	California bay	
S4 (Some Associations Sensitive)	*Pinus coulteri* Coulter Pine Woodland	No	Coulter Pine	
S4	*Alnus rhombifolia* White alder groves	Yes	White Alder	*Alnus rhombifolia*
	Juniperus californica California Juniper Woodland	No	California Juniper (shrub), California Juniper (tree), Desert Mixed Shrub, Great Basin - Desert Mixed Scrub, Great Basin - Mixed Chaparral Transition, Joshua Tree	*Juniperus californica*
	Pinus jeffreyi Jeffrey Pine Forest	No	Eastside Pine	
	Pinus ponderosa Ponderosa Pine Forest	No	Eastside Pine	
	Pinus ponderosa – Pseudotsuga menziesii Ponderosa Pine – Douglas Fir Forest	No	Douglas Fir – Ponderosa Pine	

TABLE 5.1.2-1
PLANT COMMUNITIES POTENTIALLY PRESENT WITHIN THE PROPOSED INITIATIVE AREA, *Continued*

State Rarity Ranking	MCV Plant Community Name	Potential Wetland/Riparian Community	CalVeg Designation	DRECP dominant plants or NVCS groupings
	Pinus sabiniana Ghost Pine Woodland	No	Gray Pine	*Pinus sabiniana*
	Pinus monophylla Singleleaf Pinyon Woodlands	No	Singleleaf Pinyon Pine, Tucker/Muller Scrub Oak	*Pinus monophylla*
	Quercus agrifolia Coast Live Oak Woodland	No	Bigcone Douglas-Fir, Canyon Live Oak, Coast Live Oak, Coastal Mixed Hardwood, Riparian Mixed Hardwood	
	Quercus (agrifolia, douglasii, garryana, kelloggi, lobata, wislizeni) Mixed Oak Forest	No	Interior Live Oak	
	Quercus douglasii Blue Oak Woodland	No	Blue Oak, Canyon Live Oak, Interior Mixed Hardwood	*Quercus douglasii*
	Quercus wislizeni Interior Live Oak Woodland	No	Canyon Live Oak, Interior Live Oak	*Quercus wislizeni* tree
S5	*Quercus chrysolepis* Canyon Live Oak Forest	No	Canyon Live Oak, Gray Pine, Riparian Mixed Hardwood	*Quercus chrysolepis* tree
Shrubland Alliances				
S2.2	*Forestiera pubescens* Desert Olive Patches	No		*Forestiera pubescens*
S2	*Ribes quercetorum* Oak Gooseberry Thickets	No		*Ribes quercetorum*
S2?	*Baccharis emoryi* Emory's Baccharis Thicket	Yes	Baccharis (riparian), Perennial Grasses and Forbs	
S3.2	*Atriplex spinifera* Spinescale Scrub	Yes		*Ambrosia dumosa, Atriplex spinifera,* North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat
	Suaeda moquinii Bush Seepweed Scrub	Yes		North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat, *Suaeda moquinii*
S3.3	*Ephedra california* California Joint Fir Scrub	No	Desert Mixed Shrub, Semi-desert Chaparral	*Lycium cooperi*, Madrean Warm Semi-Desert Wash Woodland/Scrub, *Ephedra nevadensis*
	Grayia spinosa Spiny Hop Sage Scrub	No	Desert Mixed Shrub	*Lycium cooperi, Encelia (actoni, virginesis), Ericameria teretifolia, Salazaria mexicana*
	Pluchea sericea Arrow Weed Thickets	Yes		Madrean Warm Semi-Desert Wash Woodland/Scrub
	Prunus fasciculata Desert Almond Scrub	Yes		Madrean Warm Semi-Desert Wash Woodland/Scrub, *Prunus fasciculata*
S3	*Adenostoma fasciculatum—Salvia apiana* Chamise—White Sage Scrub	No	Chamise	*Adenostoma fasciculatum*
	Allenrolfea occidentalis Iodine Bush Scrub	Yes		North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat
	Ceanothus greggii Cup Leaf Ceanothus Chaparral	No	Ceanothus Mixed Chaparral, Chaparral Yucca	*Fremontodendron californicum*
	Ceanothus oliganthus Hairy Leaf Ceanothus Chaparral	No	Ceanothus Mixed Chaparral, Chaparral Yucca	

TABLE 5.1.2-1
PLANT COMMUNITIES POTENTIALLY PRESENT WITHIN THE PROPOSED INITIATIVE AREA, *Continued*

State Rarity Ranking	MCV Plant Community Name	Potential Wetland/Riparian Community	CalVeg Designation	DRECP dominant plants or NVCS groupings
	Eriodictyon crassifolium Thick Leaf Yerba Santa Scrub	No	Ceanothus Mixed Chaparral, Lower Montane Mixed Chaparral	*Eriodictyon (crassifolium, trichocalx)*
	Ericameria paniculata Black-stem Rabbitbush Scrub	Yes	Desert Mixed Shrub	*Lycium cooperi,* Madrean Warm Semi-Desert Wash Woodland/Scrub
	Ericameria linearifolia Narrowleaf Goldenbush Scrub	No		*Ericameria linearifolia*
	Krascheninnikovia lanata Winterfat Scrubland	No		*Ericameria teretifolia, Salazaria mexicana*
	Lepidospartum squamatum Scale Broom Scrub	Yes	Riversidean Alluvial Scrub, Scalebroom	Madrean Warm Semi-Desert Wash Woodland/Scrub, *Ephedra nevadensis, Lepidospartum squamatum*
	Lycium andersonii Anderson's Boxthorn Scrub	No	Desert Mixed Shrub	*Ericameria teretifolia, Lycium cooperi, Salazaria mexicana*
	Prunus ilicifolia Holly Leaf Cherry Chaparral	No	Lower Montane Mixed Chaparral, Chaparral Yucca	
	Purshia tridentata Bitter Bush Scrub	No	Great Basin Mixed Scrub	*Ericameria teretifolia, Purshia tridentate, Salazaria mexicana*
	Quercus chrysolepis Canyon Live Oak Chaparral	No	Canyon Live Oak, Lower Montane Mixed Chaparral, Scrub Oak, Chaparral Yucca	
	Rhus integrifolia Lemonade Berry Scrub	No	Sumac Shrub	
S3?	*Ericameria linearifolia* Narrowleaf Goldenbush Scrub	No	Desert Mixed Shrub	
	Rhus trilobata Basket Bush Thickets	No	Tucker/Muller Scrub Oak	
S4 (Some Associations Sensitive)	*Quercus berberidifolia* Scrub Oak Chaparral	No	Lower Montane Mixed Chaparral, Scrub Oak, Soft Scrub Mixed Chaparral, Chaparral Yucca	
	Salix lasiolepis Arroyo Willow Thickets	Yes	Riparian Mixed Hardwood, Riparian Mixed Shrub, Willow, Willow (Shrub)	*Salix lasiolepis*
S4?	*Heteromeles arbutifolia* Toyon Chaparral	No	Chaparral	
S4.2	*Atriplex confertifolia* Shadscale Scrub	No		*Atriplex confertifolia,* North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat
	Quercus cornelius-mulleri Muller oak chaparral	No	Chaparral Yucca	
S4	*Acacia greggii* Catclaw Acacia Thorn Scrub	Yes		Madrean Warm Semi-Desert Wash Woodland/Scrub
	Ambrosia dumosa White Burr Sage Scrub	No	White Bursage	*Ambrosia dumosa, Encelia (actoni, virginesis)*
	Ambrosia salsola Cheesebush Scrub	No	Buckwheat, Desert Mixed Scrub, Riversidean Alluvial Shrub, White Burr Sage, Willow (Shrub)	*Ambrosia salsola*

TABLE 5.1.2-1
PLANT COMMUNITIES POTENTIALLY PRESENT WITHIN THE PROPOSED INITIATIVE AREA, *Continued*

State Rarity Ranking	MCV Plant Community Name	Potential Wetland/Riparian Community	CalVeg Designation	DRECP dominant plants or NVCS groupings
	Arctostaphylos glauca Bigberry Manzanita Chaparral	No	Lower Montane Mixed Chaparral, Manzanita Chaparral, Chaparral Yucca	*Arctostaphylos glauca*
	Arctostaphylos glandulosa Eastwood Manzanita Chaparral	No	Chaparral, Manzanita Chaparral, California Yucca	*Arctostaphylos glandulosa*
	Artemisia californica—Eriogonum fasciculatum California Sagebrush-— California Buckwheat Scrub	No	Barren, Buckwheat, California Sagebrush, Ceanothus Mixed Chaparral, Encelia Scrub	
	Atriplex canescens Fourwing Saltbush Scrub	Yes	Great Basin - Desert Mixed Scrub, Great Basin Mixed Scrub, Riversidean Alluvial Scrub	*Atriplex canescens, Atriplex confertifolia,* North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat
	Atriplex hymenelytra Desert Holly Scrub	No		North American Warm Desert Bedrock Cliff and Outcrop
	Atriplex lentiformis Quailbush Scrub	Yes		North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat
	Atriplex polycarpa Allscale Scrub	Yes		*Atriplex polycarpa*
	Baccharis salicifolia Mulefat Thicket	Yes	Baccharis (Riparian), Riparian Mixed Hardwood, Riparian Mixed Shrub, Willow (Shrub)	*Baccharis salicifolia,* Madrean Warm Semi-Desert Wash Woodland/Scrub
	Ceanothus crassifolius Hoary Leaf Ceanothus Chaparral	No	Ceanothus Mixed Chaparral, Lower Montane Mixed Chaparral, Chaparral Yucca	*Ceanothus crassifolius*
	Ceanothus cuneatus Wedge Leaf Ceanothus Chaparral	No	Lower Montane Mixed Chaparral, Chaparral Yucca	
	Ceanothus integerrimus Deer Brush Chaparral	No	Chaparral Yucca	
	Ceanothus leucodermis White Thorn Chaparral	No	Chaparral Yucca	*Ceanothus leucodermis*
	Ceanothus megacarpus Big Pod Ceanothus Chaparral	No	Chaparral Yucca	
	Ceanothus spinosus Green Bark Ceanothus Chaparral	No	Chaparral Yucca	
	Cercocarpus montanus Birch Leaf Mountain Mahogany Chaparral	No	Birchleaf Mountain Mahogany, Buckwheat, Lower Montane Mixed Chaparral, Urban or Industrial Impoundment, Chaparral Yucca	*Cercocarpus montanus, Fremontodendron californicum*
	Dendromecon rigida Bush Poppy Scrub	No	Chaparral Yucca	
	Coleogyne ramosissima Black Brush Scrub	No		*Ericameria teretifolia, Salazaria mexicana*
	Ericameria teretifolia Needeleaf Rabbitbush Scrub	No		*Encelia (actoni, virginesis), Ericameria teretifolia,* Madrean Warm Semi-Desert Wash Woodland/Scrub

TABLE 5.1.2-1
PLANT COMMUNITIES POTENTIALLY PRESENT WITHIN THE PROPOSED INITIATIVE AREA, *Continued*

State Rarity Ranking	MCV Plant Community Name	Potential Wetland/Riparian Community	CalVeg Designation	DRECP dominant plants or NVCS groupings
	Eriogonum fasciculatum—Salvia apiana California Buckwheat—White Sage Scrub	No	Buckwheat, Soft Scrub Mixed Chaparral	
	Lupinus albifrons Silver Bush Lupine Scrub	No	Chaparral Yucca	
	Malacothamnus fasciculatus Bush Mallow Scrub	No	Chaparral Yucca	
	Malosma laurina Laurel Sumac Scrub	No	Sumac Shrub, Chaparral Yucca	
	Quercus berberidifolia—Adenostoma fasciculatum Scrub Oak—Chamise Chaparral	No	Chamise, Lower Montane Mixed Chaparral, Scrub Oak, Soft Scrub Mixed Chaparral, Urban or Industrial Impoundment, Chaparral Yucca	
	Quercus john-tuckeri Tucker Oak Chaparral	No	Great Basin - Mixed Chaparral Transition, Semi-desert Chaparral, Singleleaf Pinyon Pine, Soft Scrub Mixed Chaparral, Tucker/Muller Scrub Oak, Chaparral Yucca	*Quercus johntuckeri*
	Quercus wislizeni Interior Live Oak Chaparral	No	Gray Pine, Interior Live Oak, Scrub Oak, Chaparral Yucca	*Quercus wislizeni* tree
	Rhus ovata Sugarbush Chaparral	No	Semi-desert Chaparral, Sumac Shrub, Chaparral Yucca	
	Salazaria mexicana Bladder Sage Scrub	No	Desert Mixed Shrub	*Salazaria mexicana*
	Salix exigua Sandbar Willow Thickets	Yes	Riparian Mixed Shrub, Willow (Shrub)	*Salix exigua*
	Sarcobatus vermiculatus Greasewood Scrub	age		*Atriplex canescens, Atriplex confertifolia,* North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat
	Toxicodendron diversilobum *Poison oak srub*	No	Chaparral Yucca	
S5 (Some Associations Sensitive)	*Larrea tridentata—Ambrosia dumosa* Creosote Bush—White Burr Sage Scrub	No	Creosote Bush	*Ephedra nevadensis, Larrea tridentata - Ambrosia dumosa*
S5	*Adenostoma fasciculatum* Chamise Chaparral	No	Buckwheat, Ceanothus Mixed Chaparral, Chamise, Encelia Scrub, Great Basin - Mixed Chaparral Transition, Lower Montane Mixed Chaparral, Perennial Grasses and Forbs, Semi-desert Chaparral, Soft Scrub Mixed Chaparral, Urban or Industrial Impoundment	*Adenostoma fasciculatum*
	Adenostoma fasciculatum—Salvia mellifera Chamise—Black Sage Chaparral	No	Ceanothus Mixed Chaparral, Chamise, Lower Montane Mixed Chaparral, Urban or Industrial Impoundment	*Adenostoma fasciculatum*
	Artemisia californica California Sagebrush Scrub	No	Barren, California Sagebrush	
	Artemisia tridentata Big Sagebrush	No	Basin Sagebrush, Desert Mixed Shrub, Great Basin - Desert Mixed Scrub, Great Basin Mixed Scrub, Semi-desert Chaparral, Soft Scrub Mixed Chaparral	*Artemisia tridentata, Artemisia tridentata* spp. *parishii*
	Artemisia tridentata ssp. *vaseyana* Mountain Big Sagebrush	No	Basin Sagebrush	*Artemisia tridentata*

TABLE 5.1.2-1
PLANT COMMUNITIES POTENTIALLY PRESENT WITHIN THE PROPOSED INITIATIVE AREA, *Continued*

State Rarity Ranking	MCV Plant Community Name	Potential Wetland/Riparian Community	CalVeg Designation	DRECP dominant plants or NVCS groupings
	Ericameria nauseosa Rubber Rabbitbrush Scrub	No	Basin Sagebrush, Buckwheat, Great Basin Mixed Scrub, Rabbitbrush	*Ericameria nauseosa,* Madrean Warm Semi-Desert Wash Woodland/Scrub
	Eriogonum fasciculatum California Buckwheat Scrub	No	Barren, Buckwheat, Chamise, Encelia Scrub, Great Basin - Mixed Chaparral Transition, Perennial Grasses and Forbs, Semi-desert Chaparral	*Encelia (actoni, virginesis), Ephedra nevadensis, Eriogonum fasciculatum*
	Larrea tridentata Creosote Bush Scrub	No	Creosote Bush, White Bursage	*Larrea tridentata*
	Lotus scoparius (*Acmispon glaber*) Deer Weed Scrub	No	Perennial Grasses and Forbs, Semi-desert Chaparral, Soft Scrub Mixed Chaparral, Chaparral Yucca	
Invasive	*Tamarix* spp. Tamarisk Thickets	Yes	Tamarisk	*Salix exigua, Tamarix* spp.
Herbaceous Alliances				
S1.2	*Achnatherum [Stipa] hymenoides* Indian Rice Grass Grassland	No		*Achnatherum hymenoides, Ericameria teretifolia*
S2.2 (Sensitive, Fairly Threatened)	*Achnatherum speciosum [Stipa speciosa]* Desert Needlegrass Grassland	No		*Encelia (actoni, virginesis)*
	Sporobolus airoides Alkali Sacaton Grassland	Yes		North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat
S2 (Sensitive)	*Juncus (oxymeris, xiphioides)* Iris-leaf Rush Seeps	Yes	Wet Meadows	
	Muhlenbergia rigens Deer Grass Beds	Yes	Wet Meadows	
	Scirpus microcarpus Small-fruited Bullrush Marsh	Yes	Tule – Cattail	
S2? (Sensitive)	*Anemopsis californica* Yerba Mansa Meadows	Yes	Perennial Grasses and Forbs, Wet Meadows	
S3 (Sensitive)	*Bolboschoenus maritimus* Salt Marsh Bullrush Marshes	Yes	Tule-Cattail	
	Carex (aquatilis, lenticularis) Water Sedge and Lakeshore Sedge Meadows	Yes	Tule-Cattail	
	Carex simulata Short-beaked Sedge Meadows	Yes	Tule-Cattail	
	Leymus triticoide Creeping Rye Grass Turfs	Yes	Perennial Grasses and Forbs, Wet Meadows	California mixed annual/perennial freshwater vernal pool
S3? (Sensitive)	*Hydrocotyle (ranunculoides, umbellata*) Mats of Floating Pennywort	Yes	Tule-Cattail	
	Nassella cernua Nodding Needle Grass Grassland	No		California Annual and Perennial Grassland
	*Nassella pulchra** Purple Needle Grass Grassland	No		California Annual and Perennial Grassland

TABLE 5.1.2-1
PLANT COMMUNITIES POTENTIALLY PRESENT WITHIN THE PROPOSED INITIATIVE AREA, *Continued*

State Rarity Ranking	MCV Plant Community Name	Potential Wetland/Riparian Community	CalVeg Designation	DRECP dominant plants or NVCS groupings
	Sparganium (angustifolium) Mats of Burr-Reed Leaves	Yes	Tule – Cattail	
	Stuckenia (pectinata) Pond Weed Mats	Yes	Tule – Cattail	
S4	*Amsinckia (menziesii, tessellata)* Fiddleneck Fields	No		*Amsinckia (menziesii, tessellata),* California Annual and Perennial Grassland, California annual herb/grass
	Azolla (filiculoides, mexicana) Mosquito Fern Mats	Yes	Tule – Cattail	
	Eleocharis macrostachya Pale Spike Rush Marshes	Yes	Wet Meadows	California mixed annual/perennial freshwater vernal pool
	Eschscholzia (californica) California Poppy Fields	No		California Annual and Perennial Grassland, California annual herb/grass, *Eschscholzia (californica)*
	Juncus arcticus Baltic and Mexican Rush Marshes	Yes	Wet Meadows	*Juncus arcticus (var. balticus, mexicanus)*
	Lasthenia californica—Plantago erecta—Vulpia microstachys California Goldfields—Dwarf Plantain—Six-weeks Fescue Flower Fields	No		California Annual and Perennial Grassland, California annual herb/grass, *Lasthenia californica - Plantago erecta - Vulpia microstachys*
	Periscaria lapathifolia—Xanthium strumarium Smartweed—Cocklebur Patches	Yes	Wet Meadows	
	Schoenoplectus acutus Hardstem Bullrush Marsh	Yes	Tule – Cattail	
S4?	*Lemna (minor)* Duckweed blooms	Yes	Tule – Cattail	
	Schoenoplectus californicus California Bullrush Marsh	Yes	Tule – Cattail	

TABLE 5.1.2-1
PLANT COMMUNITIES POTENTIALLY PRESENT WITHIN THE PROPOSED INITIATIVE AREA, *Continued*

State Rarity Ranking	MCV Plant Community Name	Potential Wetland/Riparian Community	CalVeg Designation	DRECP dominant plants or NVCS groupings
S5	*Typha* (*angustifolia, domingensis, latifolia*) Cattail Marshes	Yes	Tule – Cattail	Madrean Warm Semi-Desert Wash Woodland/Scrub
Invasive	*Arundo donax* Giant Reed Breaks	Yes	Riparian Mixed Hardwood	
	Avena (*barbata, fatua*) Wild Oats Grassland	No	Annual Grasses and Forbs, Barren, Non-native/Ornamental Grass, Soft Scrub Mixed Chaparral	California Annual and Perennial Grassland, Mediterranean California naturalized annual and perennial grassland
	Brassica (*nigra*) and Other Mustard Upland Mustards	No	Non-native/Ornamental Grass, Soft Scrub Mixed Chaparral	California Annual and Perennial Grassland, Mediterranean California naturalized annual and perennial grassland
	Bromus (*diandrus, hordeaceus*) Annual Brome Grassland	No	Annual Grasses and Forbs, Barren, Non-native/Ornamental Grass, Perennial Grasses and Forbs, Wet Meadows	
	Bromus rubens—Schismus (*arabicus,barbatus*) Red Brome or Mediterranean Grass Grassland	No		California Annual and Perennial Grassland, California annual herb/grass, Mediterranean California naturalized annual and perennial grassland
	Centaurea (*solstitialis, melitensis*) Yellow Star-thistle Fields	No		California Annual and Perennial Grassland, Mediterranean California naturalized annual and perennial grassland
	Lepidium latifolium Perennial Pepper Weed Patches	Yes	Wet Meadows	
	Ludwigia (hexapetala, peploides) Water Primrose Wetlands	Yes	Tule – Cattail	
Developed Groupings				
None	Developed	No	Barren, Upper Montane Mixed Chaparral, Urban-related Bare Soil, Urban/Developed (General)	*Eriodictyon (crassifolium, trichocalx)*, Urban
	Developed -- Planted/Ornamental	No	Non-native/Ornamental Conifer, Non-native/Ornamental Hardwood, Non-native/Ornamental Grass, Non-native/Ornamental Shrub	
	Developed - Agricultural	No	Orchard Agriculture, Pastures and Crop Agriculture, Vineyard - Shrub Agriculture, Tilled Earth	Deciduous Orchard Vineyard, Irrigated Row and Field Crops
	Developed - Impoundments	Yes	Water (General), Perennial Lake or Pond	Lacustrine

KEY:
S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure; S5 = Secure; ? = Represents uncertainty in ranking (0.1: Very Threatened, 0.2: Threatened, 0.3: No Current Threat Known)
NOTE: The species name for this plant has been officially changed to *Stipa pulchra*; however, the Manual of California Vegetation gives the older species name; therefore, the older name is used when referring to this plant's alliance.

Comparing the amount of area likely to contain a sensitive plant community in relation to the total acres within each subarea indicates that parcels located within the following subareas have the greatest potential to contain sensitive plant communities: Lake Hughes/Gorman/West of Lancaster, Lake Los Angeles/Llano/Valyermo/Littlerock, Antelope Valley Northeast, and East San Gabriel Mountains (Table 5.1.2-2, *Sensitive Plant Communities with the Potential to Occur in Subareas – CalVeg Data*; Table 5.1.2-3, *Sensitive Plant Communities with the Potential to Occur in Subareas – DRECP Data*). The Lake Hughes/Gorman/West of Lancaster subarea is the most diverse in term of plant communities and sensitive plant communities, likely because of the convergence of several mountain ranges and the Mojave Desert. The East San Gabriel Mountains has the highest percentage of the subarea potentially sensitive because almost 25 percent of the subarea is classified as Interior Mixed Hardwood, which could potentially contain the sensitive *Quercus lobata*–Valley Oak Woodland plant community. It should be noted that the potential presence of State-designated sensitive habitats is likely inflated for Antelope Valley Northeast because the sensitive *Larrea tridentata–Ambrosia dumosa–Petalonyx thurberi* Association may occur within the most common plant community, *Larrea tridentate–Ambrosia dumosa* Creosote–White Burr Sage Scrub (Figure 5.1.2-2).

In contrast, parcels within the following subareas have the least potential to contain sensitive plant communities: Acton, Castaic/Santa Clarita/Agua Dulce, and Lancaster Northeast. The Acton subarea has the fewest acres of potentially present sensitive plant communities, but is also very diverse in the number of sensitive plant communities that could be present.

TABLE 5.1.2-2
SENSITIVE PLANT COMMUNITIES
WITH THE POTENTIAL TO OCCUR IN SUBAREAS – CALVEG DATA

Subarea	Total Subarea Acres	Potentially Present Sensitive Plant Communities		
		No. of Sensitive Communities	Acres of Sensitive	Percentage of Subarea Sensitive
C	35,340	32	9,655	27%
A	18,065	26	1,670	9%
LH	125,040	40	12,655	10%
LL	108,065	27	1,565	1%
AV	—*	—	—	—
LN	—	—	—	—
SG	4,090	33	2,705	67%
Total	**290,610**		**28,245**	**10%**

KEY: C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains

NOTE: *The subareas for which values are entered as "—" are areas for which no CalVeg data is available. Plant community data for these subareas is represented by DRECP data in table below.

TABLE 5.1.2-3
SENSITIVE PLANT COMMUNITIES
WITH THE POTENTIAL TO OCCUR IN SUBAREAS – DRECP DATA

Subarea	Total Subarea Acres	Potentially Present Sensitive Plant Communities		
		No. of Sensitive Communities	Acres of Sensitive	Percentage of Subarea Sensitive
C	—*	—	—	—
A	18,065	26	10	<1%
LH	125,040	40	42,670	35%
LL	108,065	27	53,410	49%
AV	14,530	17	14,020	97%
LN	35,325	16	7,720	22%
SG	4,090	33	70	2%
Total	**305,120**		**117,900**	**39%**

KEY: C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains

NOTE: *The subareas for which values are entered as "—" are areas for which no DRECP data are available. Plant community data for these subareas is represented by CalVeg data in table below.

There are 59 sensitive plant communities and 146,145 acres (28,245 acres covered by CalVeg data and 117,900 acres covered by DRECP data) that have the potential to contain a sensitive plant community within parcels affected by the proposed initiative. Further evaluation of the sensitive plant communities may need to be conducted prior to obtaining a building permit for parcels that have one or more of the potential sensitive communities on site. While these habitats must be evaluated under CEQA, there are no federal, State, or local statutes that afford protection to State-designated sensitive habitats.

Riparian and Wetland Communities

Most of the riparian and wetland communities that are subject to USACOE jurisdiction are included within the sensitive plant communities listed above. However, some of the more common plant communities also occur along desert washes and within riparian areas and may be subject to CDFW jurisdiction. As such, there are 20 additional, non-sensitive plant communities that should be considered "riparian" or "wetland" plant communities (Table 5.1.2-4, *Likely Riparian and Wetland Plant Communities*). Although Canyon Live Oak Woodland (*Quercus chrysolepis* Forest Alliance) was observed within canyon bottom, this community was not considered riparian within this BRTR because it generally occurs near but not within the riparian zone.

TABLE 5.1.2-4
LIKELY RIPARIAN AND WETLAND PLANT COMMUNITIES

State-Sensitive Plant Communities That Are Riparian/Wetland	Non-State-Sensitive Plant Communities That Are Riparian/Wetland
Allenrolfea occidentalis – Iodine Bush Scrub	*Acacia greggii* – Catclaw Acacia Thorn Scrub
Anemopsis californica – Yerba Mansa Meadows	*Alnus rhombifolia* – White alder groves
Atriplex spinifera – Spinescale Scrub	*Arundo donax* – Giant Reed Breaks
Baccharis emoryi – Emory's Baccharis Thicket	*Atriplex canescens* – Fourwing Saltbush Scrub
Bolboschoenus maritimus – Salt Marsh Bullrush Marshes	*Atriplex lentiformis* – Quailbush Scrub
Carex (aquatilis, lenticularis) – Water Sedge and Lakeshore Sedge Meadows	*Atriplex polycarpa* – Allscale Scrub
Carex simulate – Short-beaked Sedge Meadows	*Azolla (filiculoides, mexicana)* – Mosquito Fern Mats
Ericameria paniculata – Black-stem Rabbitbush Scrub	*Baccharis salicifolia* – Mulefat Thicket
Fraxinus latifolia – Oregon Ash Groves	Developed - Impoundments
Hydrocotyle (ranunculoides, umbellata) – Mats of Floating Pennywort	*Eleocharis macrostachya* – Pale Spike Rush Marshes
Juncus (oxymeris, xiphioides) – Iris-leaf Rush Seeps	*Juncus arcticus* – Baltic and Mexican Rush Marshes
Lepidospartum squamatum – Scale Broom Scrub	*Lemna (minor)* – Duckweed blooms
Leymus triticoide – Creeping Rye Grass Turfs	*Lepidium latifolium* – Perennial Pepper Weed Patches
Muhlenbergia rigens – Deer Grass Beds	*Ludwigia (hexapetala, peploides)* – Water Primrose Wetlands
Platanus racemosa – California Sycamore Woodland	*Periscaria lapathifolia—Xanthium strumarium* Smartweed—Cocklebur Patches
Pluchea sericea – Arrow Weed Thickets	*Tamarix* spp. – Tamarisk Thickets
Populus fremontii – Fremont Cottonwood Forest	*Typha* (*angustifolia, domingensis, latifolia*) – Cattail Marshes
Populus trichocarpa – Black Cottonwood Forest	*Salix exigua* – Sandbar Willow Thickets
Prosopis glandulosa – Mesquite Thicket	*Schoenoplectus acutus* – Hardstem Bullrush Marsh
Prunus fasciculate – Desert Almond Scrub	*Schoenoplectus californicus* – California Bullrush Marsh
Salix gooddingii – Black Willow Thicket	
Salix laevigata – Red Willow Thicket	
Salix lasiolepis – Arroyo Willow Thickets	
Salix lucida (*lasiandra*) – Shining Willow Thicket	
Scirpus microcarpus – Small-fruited Bullrush Marsh	
Sparganium (angustifolium) – Mats of Burr-Reed Leaves	
Sporobolus airoides – Alkali Sacaton Grassland	
Stuckenia (pectinata) – Pond Weed Mats	
Suaeda moquinii – Bush Seepweed Scrub	

Overall, one percent of the study area covered by CalVeg data and 14 percent of the study area covered by DRECP data has the potential for riparian and wetland plant communities. Subareas with the greatest potential to have these riparian and wetland plant communities include Lancaster Northeast, and Lake Los Angeles/Llano/Valyermo/Littlerock (Table 5.1.2-5, *Riparian Plant Communities with the Potential to Occur in Subareas*). The reason the Lancaster Northeast subarea has the greatest percent cover of potential riparian and wetland habitat is because this area is in

proximity to the dry lakes on Edwards Air Force Base. As such, alkali sinks are located in these areas and water will pool after large rain events; as such, there is a high potential for a playa to occur. In contrast, most of the State riparian and wetland plant communities in the Acton, East San Gabriel Mountains, and Castaic/Santa Clarita/Agua Dulce subareas are also subject to USACOE jurisdiction because they are within watersheds of the Santa Clara, Los Angeles, and San Gabriel Rivers.

TABLE 5.1.2-5
RIPARIAN PLANT COMMUNITIES
WITH THE POTENTIAL TO OCCUR IN SUBAREAS

Subarea	Total Subarea Acres	Riparian Plant Communities		State Riparian/ Wetland Acres (CalVeg)	State Riparian/ Wetland Acres (DRECP)	Percent of Subarea (CalVeg)	Percent of Subarea (DRECP)
		No. of Sensitive Communities	No. of Non-Sensitive Communities				
C	35,340	16	11	490	—	1%	—
A	18,065	11	4	1,080	0	6%	0%
LH	125,040	17	13	610	9,725	<1%	8%
LL	108,065	10	9	600	14,095	<1%	13%
AV	14,530	8	5	—	795	—	5%
LN	35,325	11	8	—	21,885	—	62%
SG	4,090	12	6	530	<5	13%	<1%
Total	**340,460**			**3,310**	**46,505**	**1%**	**14%**

KEY: C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains

There are up to 49,815 acres (1 percent of the study area covered by CalVeg data and 14 percent of the study area covered by DRECP data) of parcels within the proposed initiative study area that have the potential to contain a riparian plant community.

State Jurisdictional Areas

State Jurisdictional Areas are potentially present on two percent (8,020 acres) of the proposed initiative study area (Table 5.1.2-6, *State Jurisdictional Areas with the Potential to Occur in Subareas*; see Figure 5.1.2-3, *State Jurisdictional Areas Potentially Present within the Proposed Initiative Subareas*, at the end of this section). To avoid overestimating the size of potential State Jurisdictional Areas, riparian plant communities and plant communities with associated wetland plants that fell outside of existing blue line drainages and NWI features were not included in the analysis of State Jurisdictional Areas, although the State may choose to take jurisdiction over these communities during the Streambed Alteration Agreement process.

TABLE 5.1.2-6
STATE JURISDICTIONAL AREAS WITH THE POTENTIAL TO OCCUR IN SUBAREAS

Subarea	Total Subarea Acres	State Jurisdictional Areas	Percentage of Subarea State Jurisdictional
C	35,340	800	2%
A	18,065	275	2%
LH	125,040	1,535	1%
LL	108,065	3,315	3%
AV	14,530	565	4%
LN	35,325	1,310	4%
SG	4,090	210	5%
Total	**340,460**	**8,020**	**2%**

KEY: C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains

Subareas with the greatest potential to have State Jurisdictional Areas include: Lancaster Northeast, Lake Hughes/Gorman/West of Lancaster, and Lake Los Angeles/Llano/Valyermo/Littlerock (Table 5.1.2-6).

5.1.3 Waters of the United States

There are 19 lakes and reservoirs and three rivers within the study area of the proposed initiative, including Santa Clara River and tributaries, Tujunga Wash (a tributary of the Los Angeles River), San Gabriel River and tributaries, Lake Piru, Upper Castaic Lake, Castaic Lagoon, Pyramid Lake, Bouquet Reservoir, Hughes Lake, Lake Elizabeth, Munz Lakes, Quail Lake, Lake Palmdale, San Gabriel Reservoir and Morris Reservoir, Little Rock Reservoir, Big Tujunga Reservoir, Crystal Lake, Pacoima Reservoir, Cogswell Reservoir, Big Dalton Reservoir and San Dimas Reservoir.

Waters of the United States, consisting of wetlands and waterways, are potentially present on less than 1 percent (1,440 acres) of the total area of parcels that may be affected by the proposed initiative (Table 5.1.3-1, *Waters of the United States with the Potential to Occur in Subareas*, see Figure 5.1.3-1, *Federal Waters of the United States Potentially Present within the Proposed Initiative Subareas*, at the end of this section). Waters of the United States are generally not found within any of the four subareas located in the Mojave Desert, with the exception of the Lake Hughes/Gorman/West of Lancaster subarea (the other three being Lake Los Angeles/Llano/Valyermo/Littlerock, Antelope Valley Northeast, and Lancaster Northeast), which has a small amount of potential Waters of the United States. The three remaining subareas contain varying amounts of potential Waters of the United States with the largest total estimated amount of Waters of the United States occurring in the Castaic/Santa Clarita/Agua Dulce subarea and the lowest total amount occurring in the Acton subarea. Waters of the United States are most abundant within the East San Gabriel Mountains and Castaic/Santa Clarita/Agua Dulce subareas due to the branching nature of the Tujunga Wash, San Gabriel River, and Santa Clara River. Much of the Waters of the United States acreage within these two subareas is classified as riverine. Castaic/Santa Clarita/Agua Dulce subarea also contains Waters of the United States in the form of vernal pools located on the Cruzan Mesa. Waters of the United States in the Lake Hughes/Gorman/West of Lancaster subarea tend to be wet meadows, including wet meadows near Quail Lake and within Leona Valley. Waters of the United States in the Acton subarea were shrubby/forested wetlands located along the Santa Clara River.

TABLE 5.1.3-1
WATERS OF THE UNITED STATES WITH THE POTENTIAL TO OCCUR IN SUBAREAS

Subarea	Total Subarea Acres	Total Acres of Federal Wetlands/Waterways	Percentage of Subarea
C	35,340	800	2%
A	18,065	215	1%
LH	125,040	245	0.2%
LL	108,065	0	0%
AV	14,530	0	0%
LN	35,325	0	0%
SG	4,090	180	4%
Total	**340,460**	**1,440**	**0.4%**

KEY: C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains

A total of 217.6 linear miles of potential federal waterways were identified from blue-line features (Table 5.1.3-2, *Miles of Blue-Line Drainages within Proposed Subareas*). Lake Piru, Pyramid Lake, Hughes Lake, Lake Elizabeth, Munz Lakes, Upper Castaic Lake, Castaic Lagoon and Bouquet Reservoirs are within the Santa Clara River watershed; therefore, these water bodies and blue-line features that connect to them were classified as Waters of the United States.[4,5] The Acton, Castaic/Santa Clarita/Agua Dulce, and Lake Hughes/Gorman/West of Lancaster subareas are located within the Santa Clara River watershed. The Lake Hughes/Gorman/West of Lancaster subarea contains Quail Lake, which is a man-made feature connected to the California Aqueduct system. For the purpose of this BRTR, Quail Lake and blue-line drainages that connect to it were considered Waters of the United States.[6] There are very few blue-line drainages around Quail Lake and existing blue-lines are composed of short drainage features from the immediate area. In the East San Gabriel Mountains subarea, blue-line drainages that connect to Little Tujunga Wash, San Gabriel River, San Gabriel Reservoir, Morris Reservoir, Big Tujunga Reservoir, Crystal Lake, Pacoima Reservoir, Cogswell Reservoir, Big Dalton Reservoir, and San Dimas Reservoir also were classified as Waters of the United States. Any new roads, driveway, and road improvements that would discharge fill into Waters of the United States would be subject to the jurisdiction of the USACOE pursuant to Section 404 of the Clean Water Act.

[4] U.S. Army Corps of Engineers. 2012. Santa Clara River Watershed Feasibility Study. Prepared by CDM Smith, Irvine, CA.

[5] Los Angeles Department of Public Works. 2014. Upper Santa Clara River Integrated Regional Water Management Plan. Prepared by Kennedy/Jenks Consultants

[6] http://www.epa.gov/tp/pdf/wous_guidance_4-2011.pdf

TABLE 5.1.3-2
MILES OF BLUE-LINE DRAINAGES WITHIN PROPOSED INITIATIVE SUBAREAS

Subareas	Federal Waterway	Federal Blue-Line Linear Miles
C	Santa Clara River watershed	125
A	Santa Clara River watershed	40
LH	Santa Clara River watershed; Quail Lake	35
LL	None	0
AV	None	0
LN	None	0
SG	Los Angeles River and San Gabriel River watersheds	20
Total		**220**

KEY: C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains

5.1.4 Migratory Corridors

Although SEAs are not preserves, SEAs are areas where the County General Plan deems it important to facilitate a balance between limited development and resource conservation. Limited development activities are reviewed closely in these areas where site design is a key element in conserving fragile resources such as streams, oak woodlands and threatened or endangered species and their habitat. Due to the relatively high quality of habitat associated with SEAs, they can be indicators of the presence of wildlife movement corridors. As of the adoption of the 2035 General Plan Update, there are ten SEAs present on 146,715 acres of the proposed initiative parcels, making up approximately 43 percent of the total study area (Table 5.1.4-1, *Subareas Located within SEAs*; see Figure 5.1.4-1, *Proposed Initiative Subareas Located within SEAs*, at the end of this section).

TABLE 5.1.4-1
SUBAREAS LOCATED WITHIN EXISTING SEAs

Subareas	Total Subarea Acres	Acres within SEAs	Percentage of Subarea within SEAs
C	35,340	14,920	42%
A	18,065	3,685	20%
LH	125,040	44,095	35%
LL	108,065	49,385	46%
AV	14,530	10,870	75%
LN	35,325	23,280	66%
SG	4,090	485	12%
Total	**340,460**	**146,715**	**43%**

KEY: C = Castaic/Santa Clarita/Agua Dulce; A = Acton; LH = Lake Hughes/Gorman/West of Lancaster; LL = Lake Los Angeles/Llano/Valyermo/Littlerock; AV = Antelope Valley Northeast; LN = Lancaster Northeast; SG = East San Gabriel Mountains

The size and location of the Santa Clara River, San Felicia, and Santa Susana Mountains/Simi Hills SEAs were designed to protect corridors and nurseries and connect wildlife habitats. In contrast, Cruzan Mesa Vernal Pools and Joshua Tree Woodlands SEAs meet the standards of being able to provide stopover/habitat connectivity, but their small size and isolation from other corridors limits their value as migratory corridors. In addition, the South Coast Missing Linkages identified a

migratory pathway between the Sierra Pelona Mountains and the San Gabriel Mountains along a pathway that crosses Agua Dulce.[7] There are six general areas within the proposed initiative study area where wildlife movement corridors are present (see Figure 5.1.4-2, *Migratory Corridors Potentially Present within the Proposed Initiative Subareas*, at the end of this section). The primary wildlife movement corridors within the study area are as follows:

1) The Big Rock Wash, Little Rock Wash, and other small washes that feed into Rogers and Rosamond Dry Lakes are known migration routes for wildlife. Such washes allow wildlife to move between the foothills of the San Gabriel Mountains and Rogers/Rosamond Dry Lakes and between Rogers/Rosamond Dry Lakes and El Mirage Dry Lake. Furthermore, the dry lakes on Edwards Air Force Base are considered a globally significant area for wintering and migrating birds.

2) The junction of several mountain ranges at Gorman is expected to be an important area for migrating birds because species migrating into the Central Valley have to pass through Tejon Pass in Gorman. Further, the area is at the convergence of the Tehachapi Mountains (northeast), Sierra Pelona Mountains (southeast), San Emigdio Mountains (northwest), and Topatopa Mountains (southwest). Condors may move through the area given that populations have been reintroduced into the Topatopa and Tehachapi Mountains.

3) Portal Ridge and Leona Valley are expected to be important for local movement and bird migration. Portal Ridge separates the Mojave Desert from the Sierra Pelona Mountains. The Leona Valley is situated along the San Andreas Fault and is bordered by Portal Ridge to the north and the Sierra Pelona Mountains to the south. Together, the valley and ridgeline allow wildlife movement between the San Gabriel Mountains and Acton to the east and Quail Lake and Gorman to the west. Furthermore, wildlife can move through the lush vegetation of the Leona Valley rather than the more arid Antelope Valley and Mojave Desert north of Portal Ridge.

4) The Santa Clara River and tributaries such as Castaic Creek, Mint Canyon, San Francisquito Canyon, and Bouquet Canyon are expected to be a wildlife movement corridor for wildlife moving between the Santa Susana Mountains, the Sierra Pelona Mountains, and the San Gabriel Mountains. Further movement can occur for wildlife moving from Soledad Canyon and Acton area to downstream areas, such as the flood plains around Fillmore. Soledad Canyon between Acton and Santa Clarita, at the convergence of the Santa Clara River and Castaic Creek, and in the San Francisquito Canyon near the old dam site have been designated as a Southern California Threespine Stickleback Stream, meaning that movement for this fish species likely occurs in these areas. Therefore, the Santa Clara River also is designated at a nursery site for these fish.

5) The Sierra Pelona Mountains and the San Gabriel Mountains through Vasquez Rocks are expected to be important linkages between mobile species, such as mountain lion (*Puma concolor*), and less mobile species, such as trees and invertebrates. Between these two mountain ranges are a series of foothills that are undeveloped, and Agua Dulce, a rural community with some undeveloped areas at the edge of more densely populated areas.

[7] http://www.scwildlands.org/reports/SCML_SanGabriel_Castaic.pdf

6) The San Gabriel Mountains and the San Bernardino Mountains through Lytle Creek and the Cajon Pass are important linkages between habitats for native mammal species such as mountain lion, American badger, and desert bighorn sheep. These two mountain ranges contain habitat for numerous listed and endemic species.

Much of Lancaster Northeast, Antelope Valley Northeast, and Lake Los Angeles/Llano/ Valyermo/Littlerock subareas are within the migratory corridor moving along the Big Rock Wash, Little Rock Wash, and other small washes that feed into Rogers and Rosamond Dry Lakes. The corridor that exists at the junction of several mountain ranges at Gorman and the corridor that spans Portal Ridge are both located within the Lake Hughes/Gorman/West of Lancaster subarea. The Castaic/Santa Clarita/Agua Dulce and Acton subareas occur within the wildlife corridors along the Santa Clara River and between the San Gabriel-Sierra Pelona Mountain Ranges. The eastern edge of the East San Gabriel Mountains subarea is within the corridor connecting the San Gabriel and San Bernardino Mountains.

The Santa Clara River Watershed is a nursery site for several fish species, especially near the junction of Castaic Creek and downstream because of more regularly flowing water. The Santa Clara River is the largest natural river remaining in southern California.[8] Similarly, the San Gabriel River Watershed which occupies the eastern portion of the East San Gabriel Mountains subarea is a nursery site for many endemic fish species such as the Santa Ana sucker and the Santa Ana Speckled Dace. Many similar rivers in southern California have been channelized. As such, these natural areas allow for the movement of wildlife from upstream to downstream populations. Although there are no know bird rookeries in the proposed initiative study area, many species of birds breed within the proposed initiative study area. Nesting birds protected under the MBTA have the potential to be present on any parcel within the proposed initiative study area.

5.1.5 General Plans and Policies

Los Angeles County General Plan 2035

Every parcel within the proposed initiative study area exists within unincorporated Los Angeles County and is subject to the goals and policies of the Los Angeles County General Plan 2035. Goal C/NR 3 of the Los Angeles County General Plan 2035 is applicable to the proposed initiative because the County must promote "permanent, sustainable preservation of genetically and physically diverse biological resources and ecological systems including: habitat linkages, forests, coastal zone, riparian habitats, streambeds, wetlands, woodlands, and SEAs." In support of this goal, there are six policies within the Plan Update that are applicable to the proposed initiative: Policies C/NR 3.1, 3.6, 3.8, 3.9, 3.10, and 3.11.

Goal C/NR 3 is applicable to the proposed initiative because the Plan modifies the boundaries of existing SEAs and proposes the adoption of new SEAs. As of the adoption of the General Plan 2035 in October 2015, there are 10 SEAs within the vicinity of the proposed initiative parcels:

1) Antelope Valley SEA: Designated to protect wildlife movement from the San Gabriel Mountains to the dry lakes on Edwards Air Force Base. Also protects nesting raptors on buttes migrating birds, and overlaps Desert Tortoise Critical Habitat. Further, it protects sensitive upland plant communities, riparian plant communities, and alkali plants and communities. Indeed, areas on Edwards Air Force Base are the

[8] Upper Santa Clara River IRWMP, February 2014

most pristine desert habitat in the Antelope Valley area. This SEA includes parcels within the Lake Los Angeles/Llano/Valyermo/Littlerock, Lancaster Northeast, Antelope Valley Northeast, and East San Gabriel Mountains subareas.

2) Joshua Tree Woodland SEA: Primarily designated to protect the Joshua tree woodland, a State sensitive community. Through protection of the woodlands, it provides a migration stopover for migrating birds and potential nesting habitat for raptors, including State-threated Swainson's hawk. This SEA includes parcels within the Lake Hughes/Gorman/West of Lancaster subarea.

3) San Andreas SEA: Designated as an SEA because of the area's importance for wildlife movement and plant communities that are only found in Los Angeles County within these areas. This SEA serves as an important linkage between the San Gabriel Mountains, the Tehachapi Mountains, and the Coastal Ranges. The slopes along Portal Ridge are designated by the National Audubon Society as an Important Bird Area (IBA). This SEA includes parcels within the Lake Hughes/Gorman/West of Lancaster subarea.

4) Santa Clara River SEA: Important for a large number of sensitive wildlife, especially for fish, amphibians, and riparian birds. Large number of protected plant communities, including riparian communities and areas with bigcone Douglas fir. Overlaps California Gnatcatcher Critical Habitat and Arroyo Toad Critical Habitat. Migration corridor is especially important because wildlife can safely cross under Highway 14. The area is designated as an IBA. This SEA includes parcels within the Acton, Castaic/Santa Clarita/Agua Dulce, Lake Hughes/Gorman/ West of Lancaster, and East San Gabriel Mountains subareas.

5) Santa Felicia SEA: Protects native plant communities, including areas considered nearly pristine that are uncommon within Los Angeles County. Further protects the tributaries of Piru Creek, an import source of water for the Santa Clara River. This SEA includes parcels within the Castaic/Santa Clarita/Agua Dulce subarea.

6) San Dimas Canyon/San Antonio Wash SEA: Designated to protect rare plants including the rock monardella (*Monardella saxicola*), and plant communities including riparian woodlands, coastal sage scrub, walnut woodlands. Protects major canyons and areas that have a large elevation gradient which provide habitat for sensitive species. Protects a large area of undisturbed native biotic communities. This SEA includes parcels within the East San Gabriel Mountains subarea.

7) Altadena Foothills and Arroyos SEA: Designated to protect areas where mountain and coastal plain communities meet and plants and wildlife unique to this ecotone are found. This SEA also protects important habitat linkage areas for movement between the San Gabriel Mountains and the Verdugo and Santa Monica Mountains. This SEA includes parcels within the East San Gabriel Mountains subarea.

8) San Gabriel Canyon SEA: Designated to protect core habitat for many native fish species including Santa Ana sucker, arroyo chub, and Santa Ana speckled dace. Also protected under this SEA is habitat for the San Gabriel bedstraw and San Gabriel Mountains Dudleya, as well as several sensitive plant communities. This SEA includes parcels within the East San Gabriel Mountains subarea.

9) Cruzan Mesa Vernal Pools SEA: Designated to protect seasonally wet vernal pools and surrounding coastal sage scrub and chaparral habitats which support sensitive plant species with specific habitat requirements that include seasonal pools and clay soils, and sensitive animal species such as western spadefoot and Riverside fairy shrimp. The vernal pools located within this SEA represent the only vernal pools found in Los Angeles County. This SEA includes parcels within the Castaic/Santa Clarita/Agua Dulce subarea.

10) Santa Susana Mountains/Simi Hills SEA: Designated to protect sensitive coastal sage scrub, alluvial scrub, valley oak woodland, mainland cherry woodland, native grassland, southern willow scrub, and cottonwood-willow riparian forest plant communities. Sensitive plants found in these plant communities include Lyon's pentachaeta, Nevin's barberry, and slender-horned spineflower. This SEA was also designated to protect sensitive wildlife species including California condor, Swainson's hawk, and arroyo southwestern toad. This SEA contains several important linkages for wildlife movement. This SEA includes parcels within the Castaic/Santa Clarita/Agua Dulce subarea.

Policy C/NR 3.1 is applicable to the proposed initiative because the proposed initiative study area contains "diverse natural habitats and biological resources." Policy C/NR 3.6 is applicable to the proposed initiative because "special status species and their associated habitat and wildlife movement corridors" are present within the proposed initiative study area. Policies C/NR 3.8 and C/NR 3.9 are applicable to the proposed initiative because 146,715 acres of the proposed initiative parcels are within SEAs. Policies C/NR 3.10 and C/NR 3.11 are applicable to the proposed initiative because proposed initiative parcels are located within or in the vicinity of biologically sensitive areas including riparian habitats, streambeds, wetlands, and native woodlands. Goal C/NR 4, Policy C/NR 4.1 is applicable to the proposed initiative because there is the potential for the presence of oak woodlands within every subarea except for the Antelope Valley Northeast and Lancaster Northeast subareas.

Santa Clarita Valley Area Plan

Of the 42,867 parcels in the proposed initiative study area, 2,243 are located within the Castaic/Santa Clarita/Agua Dulce subarea. Only parcels located within this subarea fall within the 2012 Santa Clarita Valley Area Plan. Parcels located within the Santa Clarita Valley are situated within the 2012 Santa Clarita Valley Area Plan. The Conservation and Open Space Element of the Santa Clarita Valley Area Plan has four objectives (CO-3.2, CO-3.3, CO-3.5 and CO-3.6) and eight policies (CO- 3.2.1, CO-3.2.2, CO-3.2.3, CO-3.2.4, CO-3.3.1, CO-3.3.3, CO-3.5.3, and CO-3.6.5) that cover biological resources as described in Chapter 3, *Regulatory Framework*.

The Policies CO-3.2.1 and CO-3.3.1 are applicable to the proposed initiative because wetlands, riparian habitat, and wildlife corridors along the Santa Clara River and tributaries, including the Cruzan Mesa are present within the Castaic/Santa Clarita/Agua Dulce subarea. Policies CO-3.2.2 and CO-3.5.3 are applicable to the proposed initiative because several parcels in the Castaic/Santa Clarita/Agua Dulce subarea are located within Coast Live Oak Woodlands (*Quercus agrifolia* Woodland Alliance) and other plant communities likely to have protected oak species. Policy CO-3.2.3 is applicable to the proposed initiative because endangered or threatened species and/or habitat are present within the Castaic/Santa Clarita/Agua Dulce subarea. Policy CO-3.3.3 is applicable to the proposed initiative because wildlife movement corridors, including between

Castaic and the San Gabriel Mountains, are present in the Castaic/Santa Clarita/Agua Dulce subarea.

Policy CO-3.2.4 is applicable to the proposed initiative because 14,911.3 acres of parcels in the Castaic/Santa Clarita/Agua Dulce subarea are located within existing SEAs. Likewise, Policy CO-3.6.5 is applicable to the proposed initiative because some parcels within the Castaic/Santa Clarita/Agua Dulce subarea are located adjacent to natural open space areas, and development on these parcels may require grading.

2015 Antelope Valley Areawide Plan – Town & Country

The Acton, Antelope Valley Northeast, East San Gabriel Mountains, Lake Hughes/Gorman/West of Lancaster, Lake Los Angeles/Llano/Valyermo/Littlerock, and Lancaster Northeast subareas are within the Antelope Valley Areawide General Plan. The Antelope Valley Areawide General Plan has one goal and seven policies which are relevant directly to the proposed initiative. Goal COS 4 of the Antelope Valley Areawide General Plan is applicable to the proposed initiative because the County mustprotect sensitive habitats and species to promote biodiversity. In support of this goal, there are seven policies within the Plan Update that are applicable to the proposed initiative: Policies COS 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, and 4.7. Policies 4.1, and 4.2 are applicable to the proposed initiative because the proposed initiative would indirectly allow for development in areas that were not previously able to be developed and would not dictate which parcels would be developed or the density of parcels to be developed. Policies 4.3, 4.4, 4.5, 4.6, and 4.7 are applicable to the proposed initiative because the proposed initiative would indirectly allow for development in areas that may be within SEAs, or are within the vicinity of wildlife movement areas such as preserve areas and parks.

County Municipal Los Angeles County Code Section 22.56.215 – Hillside Management and Significant Ecological Areas – Additional Regulations

Under the adopted Hillside Management and Significant Ecological Area Ordinances 22.56.215, single-family residences where not more than one such residence is proposed to be built by the same person on contiguous lots or parcels are exempt from the conditional use permit. Therefore, this ordinance is not relevant to the evaluation of conflicts of the proposed initiative with local general plans, policies, and ordinances.

County Municipal – Los Angeles County Code Sections 22.56.2050 – 22.56.2260 – Oak Trees

The Los Angeles County Municipal Code Sections 22.56.2050 – 22.56.2260 outline the County's Oak Tree Ordinance and guide the policies within the proposed and adopted General Plan and the Santa Clarita Valley Area Plan. The Los Angeles County Oak Tree Ordinance requires a permit prior to the cutting, removing, destroying, relocating, inflicting damage on, or encroaching into a protected zone of any tree within the oak genus.[9]

There is the potential for protected oak trees to be present on or within the vicinity of parcels in all subareas affected by the proposed initiative. Oak trees are typically found in oak woodlands and other indigenous woodlands, but may also be found in urban areas as planted trees. Based on

[9] Los Angeles County Department of Regional Planning. Accessed 27 March 2014. Los Angeles County, California, Code of Ordinances – Title 22 Planning and Zoning. Available online at: http://library.municode.com/index.aspx?clientId=16274

existing plant community data, it is anticipated that the subareas within which this ordinance is most applicable are: Acton, East San Gabriel Mountains, Castaic/Santa Clarita/Agua Dulce, Lake Hughes/Gorman/West of Lancaster, and Lake Los Angeles/Llano/Valyermo/Littlerock. However, within Acton and Lake Los Angeles/Llano/Valyermo/Littlerock, the protected oaks are most likely large scrub oaks within Tucker Oak Chaparral (*Quercus john-tuckeri* Shrubland Alliance) along the foothills and lower slopes of the San Gabriel Mountains. In contrast, large oak trees occur within hardwood forests, especially within the Santa Clarita Valley and the Sierra Pelonas near Gorman. Planted oak trees could be within the Lancaster Northeast subarea but are not likely given the conditions are outside the habitat requirements for oak trees. Therefore, this ordinance is relevant to the evaluation of conflicts of the proposed initiative with local general plans, policies, and ordinances.

Acton Community Standards District

The Acton Community Standards District (CSD) requires that development plans emphasize the protection of, and revegetation with, native vegetation, including the native plants, grasses, shrubs and trees which intercept, hold and more slowly release rainfall than bare earth surfaces. Parcels containing native vegetation under the jurisdiction of the Acton CSD are present within the proposed initiative study area. Therefore, the provisions enforced by this CSD are relevant to the evaluation of conflicts of the proposed initiative with local general plans, policies, and ordinances.

Juniper Hills Community Standards District

The Juniper Hills CSD requires that the removal or destruction of vegetation of any kind on a lot or parcel of land two-and-one-half acres or greater in size shall require a conditional use permit pursuant to Part 1 of Chapter 22.56 where the area of removal or destruction is greater than 30 percent of the gross area of the lot or parcel. Parcels containing vegetation that would be removed during the construction of a single-family residence under the jurisdiction of the Juniper Hills CSD are present within the proposed initiative study area. Therefore, the provisions enforced by this CSD are relevant to the evaluation of conflicts of the proposed initiative with local general plans, policies, and ordinances.

Elizabeth Lake and Lake Hughes Community Standards District

The Elizabeth Lake and Lake Hughes CSD requires that all property development shall use only native vegetation in landscaped areas and to re-vegetate graded slopes. The CSD also determines that in order to remove or destroy greater than 30 percent of the native vegetation on a lot or parcel of land, the applicant shall substantiate that the applicant has obtained verification by an engineer, architect, biologist, or equivalent that removal or destruction is necessary because continued existence at present location(s) precludes the reasonable use of the property for a permitted use in the zone. Parcels containing vegetation that would be removed during the construction of a single-family residence under the jurisdiction of the Elizabeth Lake and Lake Hughes CSD are present within the proposed initiative study area. Therefore, the provisions enforced by this CSD are relevant to the evaluation of conflicts of the proposed initiative with local general plans, policies, and ordinances.

Castaic Area Community Standards District

The Castaic Area CSD determines that the removal or destruction of locally indigenous vegetation is prohibited on a parcel of land one acre or greater in size, where the area of removal or destruction is greater than 10 percent of the parcel. In addition, the channelization of creeks shall be permitted by the Castaic Area CSD provided that appropriate mitigation measures are implemented to preserve the indigenous habitats of the creeks. Further, an oak tree permit for the removal or relocation of one oak tree in conjunction with a single-family residence use in the Castaic Area CSD, shall require publishing and hearing. Parcels containing locally indigenous vegetation, oak trees, and in the vicinity of creeks that would be impacted during the construction of a single-family residence under the jurisdiction of the Castaic Area CSD are present within the proposed initiative study area. Therefore, the provisions enforced by this CSD are relevant to the evaluation of conflicts of the proposed initiative with local general plans, policies, and ordinances.

5.1.6 HCPs and NCCPs

Approximately 50 percent of the Acton subarea, 100 percent of the Antelope Valley North East subarea, and approximately 80 percent of the Lake Hughes/Gorman/West of Lancaster subarea are within the DRECP (see Figure 5.1.6-1, *HCPs and NCCPs Present within the Proposed Initiative Subareas*, at the end of this section). The DRECP is a proposed multispecies HCP intended to conserve threatened and endangered species and natural communities in the Mojave and Colorado Desert regions of southern California. However, the DRECP only applies to the development of renewable energy projects.

Similarly, the same areas of the proposed initiative parcels are located within the West Mojave Plan HCP as the boundaries of both HCPs as they affect Los Angeles County are the same. However, the West Mojave Plan HCP does not apply to the proposed initiative because potential hauled water parcels are not located on federal lands and the initiative would not trigger a federal nexus.[10,11] Therefore, there are no applicable HCPs or NCCPs to the proposed initiative.

[10] California Department of Fish and Wildlife. Natural Community Conservation Planning (NCCP). Website accessed, November 24, 2014. Available online at http://www.dfg.ca.gov/habcon/nccp/.

[11] Renewable Energy Action Team. Desert Renewable Energy Consrvation Plan. Website accessed, November 24,2014. Available online at: http://www.drecp.org/

5.2 IMPACT ANALYSIS

The analysis of significant impacts to biological resources was based on a reasonable worst case scenario which assumes the annual average rate of issuance of building permits over the 20-year 2015 to 2035 planning horizon as a result of the proposed initiative would be approximately 32 per year in the Santa Clarita Valley and approximately 152 per year in the Antelope Valley for a total of 184 permits per year for both areas. The total anticipated building permits over the 20-year 2015 to 2035 planning horizon would be approximately 3,680. The number of parcels forecasted to be issued building permits over the 20-year planning horizon within each subarea is as follows: (a) 735 of 2,243 parcels in the Castaic/Santa Clarita/Agua Dulce subarea; (b) 737 of 1,246 parcels in the Acton subarea; (3c) 847 of 15,166 parcels in the Lake Hughes/Gorman/West of Lancaster subarea; (d) 1,251 of 14,822 parcels in the Lake Los Angeles/Llano/Valyermo/ Littlerock subarea; (e) zero of 1,938 parcels in the Antelope Valley Northeast subarea; (f) 110 of 6,794 parcels in the Lancaster Northeast subarea; and (7g) zero of 648 parcels in the East San Gabriel Mountains subarea. An analysis of a small subset of parcels in each subarea was performed in order to determine potential impacts from hauled water infrastructure including a storage tank, a septic leach field, and access for hauled water delivery vehicles. Based on the analysis it was determined that the average area of disturbance for each parcel was approximately 36 percent. The average size of lots analyzed was four acres.[12] Based on this analysis, potential impacts to biological resources were determined.

5.2.1 Listed and Sensitive Plants and Animals

The proposed initiative would result in significant impacts to biological resources in relation to threatened and/or endangered species, fully protected and sensitive species, locally important species, or associated critical habitat by facilitating development of potentially suitable and occupied habitat for listed and special-status species. Within the entire study area, there are 27 listed or candidate species, 75 sensitive or rare species (including four fully protected species), 14 locally important species(including 12 protected under the Desert Native Plants Act and two protected by California Fish and Game Code furbearing mammal regulations), and up to 16,740 acres of designated critical habitat with the potential to be developed with single-family residences as a result of the ability to use hauled water as the primary source of water pursuant to the proposed initiative. Impacts within each subarea are discussed in detail below. While the proposed initiative would have no direct impacts on candidate, sensitive, or special status species, indirect impacts would occur as a result of development being permitted in areas that are currently undeveloped due to being located outside a water district and not being able to develop a groundwater well with sufficient water to provide a reliable source of potable water. These impacts would include direct habitat loss and fragmentation as parcels are developed, introduction of non-native plants, and introduction of lighting and noise. Further, growth-inducing impacts resulting from the proposed initiative would include not only the development of infrastructure on parcels, but associated road improvements which may impact special-status plants and wildlife through disturbance and removal of vegetation as well as increased light and noise during and after improvements. Development of parcels within the proposed initiative study area would be subject to the provisions of the Federal and State Endangered Species Acts, as well as Sections 1900 –

[12] Sapphos Environmental, Inc. 27 August 2014. Memorandum for the Record. Subject: Analysis of Residential Development and Existing Disturbance for Parcels within or near the Proposed Hauled Water Initiative Study Area. Prepared for: Los Angeles County Hauled Water Task Force.

1913, 3511, 4150, 4700, 5050, 5515 of the State Fish and Game Code and Sections 80071-80075 of the State Food and Agriculture Code.

Approximately 16,740 acres or 5 percent of the proposed initiative study area is located within critical habitat. Given the reasonable worst-case scenario, it can be expected that five percent of the 3,680 building permits or 184 parcels will be issued within areas of critical habitat. This would result in approximately 736 acres of potential development in areas designated as critical habitat and 265 acres of critical habitat disturbance. Facilitating housing development in these areas of critical habitat for federally listed species would conflict with Section 9 of the Federal Endangered Species Act and Section 2080 of the California Endangered Species Act, to promote the survival and recovery of listed species.

This forecast can only predict how many parcels would be issued building permits, not which parcels would be developed. Therefore, all impacts below must be considered as significant impacts to listed and sensitive species and their habitats as a result of the proposed initiative for those parcels where occupied or potentially suitable habitat for special status species is present, requiring the consideration of mitigation measures.

Castaic/Santa Clarita/Agua Dulce

There are 20 federally and State-listed species and associated habitats potentially present in this subarea that may be impacted by the proposed initiative. This subarea is the most diverse subarea with regards to listed species. These include six plants, one invertebrate, two fish, three amphibians, seven birds, and one mammal. This subarea has the greatest number of listed plants and birds and is the only subarea with a listed invertebrate, due to the presence of vernal pools on the Cruzan Mesa. However, the proposed initiative would have the least impact on threatened and endangered birds in this subarea because (1) no nesting habitat is present for bald eagle, California condor, and Swainson's hawk within this subarea; (2) only one percent of the subarea is designated critical habitat for coastal California gnatcatcher; and (3) southwestern willow flycatcher habitat is degraded or lacking in this subarea. In contrast, portions of the Castaic/Santa Clarita/Agua Dulce subarea are ideal habitat for threatened and endangered plants, invertebrates, fish, and amphibians. Most of these species congregate along two resources: (1) the Santa Clara River and tributaries and (2) vernal pools on the Cruzan Mesa; additionally, the San Fernando Valley spineflower may be found in the western parts of the Santa Clarita Valley in the foothills along the Santa Clara River. Critical habitat for federally listed species occurs on 5 percent of this subarea. Both the Santa Clara River and Cruzan Mesa are designated critical habitat. The proposed initiative parcels occur along these vital resources. In addition, this subarea has the potential for a large number of rare plants (16 species), sensitive mammals (15 species), and birds (eight species) and is one of the few subareas with the potential presence of sensitive amphibians, reptiles, and fish. Sensitive species not only occur within the vernal pools and Santa Clara River, but also within the foothill grasslands and oak woodlands that occur along the base of the Santa Susana and San Gabriel Mountains.

Potential impacts to listed, sensitive, and locally important species in this subarea are significant. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 1,775 acres or 5 percent of this subarea is located within critical habitat. It can be expected that 5 percent of the 735 building permits or 37 parcels will be issued for areas within critical habitat within this subarea. This would result in approximately 147 acres of potential development in areas designated as critical habitat and 53 acres of potential critical habitat disturbance in this subarea.

Acton

There are 10 federally and State-listed species and associated habitats potentially present in this subarea that may be impacted by the proposed initiative. These include two plants, two fish, two amphibians, three birds, and one mammal. All of these species have habitat within this subarea primarily along the Santa Clara River, which includes the Santa Ana sucker, unarmored threespine stickleback, arroyo toad, California red-legged frog, southwestern willow flycatcher, least Bell's vireo, tricolored blackbird, Braunton's milk-vetch, and slender-horned spineflower; however, California red-legged frog disperses into upland habitat up to a couple miles from the water source and tributaries, and the slender-horned spineflower and Braunton's milk-vetch habitat includes chaparral and coastal scrub. Critical habitat for federally listed species occurs on less than 0.1 percent of this subarea. Critical habitat for arroyo toad is present near the Santa Clara River. Acton has a large number of sensitive plants (12 species) and birds (six species), none of which are concentrated within specific habitats. This subarea is also important for sensitive reptiles, amphibians, and fish, mostly along the Santa Clara River. Plants protected by the DNPA also occur within this subarea.

Potential impacts to listed, sensitive, and locally important species in this subarea are significant. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 80 acres or less than 0.1 percent of this subarea is located within critical habitat. It can be expected that less than 0.1 percent of the 737 building permits or one parcel will be issued for areas within critical habitat, resulting in approximately 1 acre of potential critical habitat disturbance in this subarea.

Lake Hughes/Gorman/West of Lancaster

There are 15 federally and State-listed species and associated habitats potentially present in this subarea that may be impacted by the proposed initiative. These include one plant, two fish, three amphibians, one reptile, six birds, and two mammals. The Santa Ana sucker and unarmored threespine stickleback only have habitat near parcels located in Green Valley and Lake Hughes due to the connection of tributaries to populations downstream in the Santa Clara River; however, both species are unlikely to be present given the lack of regularly flowing water throughout most of San Francisquito Canyon and Elizabeth Lake Canyon. However, wintering bald eagles are known to occur along the lakes of this subarea and the presence of the moisture in wooded areas provides habitat for arroyo toad, California red-legged frog, and Tehachapi slender salamander. This subarea is also the most likely place within the study area for California condor given proximity to extant populations and probable movement between populations in the Tehachapi Mountains and those populations in the mountains to the west. In addition, most of the subarea within the Mojave Desert is habitat for desert tortoise. Resources required by listed species in this subarea are not concentrated; rather, they are more widespread given the available habitat. There is no designated critical habitat for federally listed species present on parcels within this subarea. Sensitive species are more concentrated, generally occurring within the mountainous portions of this subarea. This subarea has a high number of sensitive plants (16 species), birds (eight species), reptiles (four species), and mammals (15 species). The high diversity of sensitive species is due to the convergence of the Mojave Desert and Traverse Range and standing water within several lakes and wet meadows. Plants protected by the DNPA also occur within this subarea.

Potential impacts to listed, sensitive, and locally important species in this subarea are substantial. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. However, the reasonable worst-case scenario assumes that 847 of

the 15,166 parcels (6 percent) within the Lake Hughes/Gorman/West of Lancaster subarea would be issued building permits over the 20-year 2015 to 2035 planning horizon. As such, the impacts within this subarea described above would be greater than the actual anticipated impacts.

Lake Los Angeles/Llano/Valyermo/Littlerock

There are nine federally and State-listed species and associated habitats potentially present in this subarea that may be impacted by the proposed initiative. These include two amphibians, one reptile, two bird, and four mammals. A majority of this subarea is habitat only for desert tortoise, Mohave ground squirrel, and Swainson's hawk. The plant communities and terrain along Big Rock and Little Rock washes, which bisect this subarea, are ideal habitat for desert tortoise. However, the foothills and creeks/wash near Juniper Hills and Valyermo also have habitat for Nelson's antelope squirrel, San Bernardino kangaroo rat, arroyo toad, and southern mountain yellow-legged frog. Much of the habitat for listed species is in proximity to rural development and agricultural fields, therefore, limiting the habitat value for all species except Swainson's hawk, which will use the cottonwood trees commonly planted as wind breaks around the agricultural fields for roosting and nesting. There is no designated critical habitat for federally listed species present on parcels within this subarea. This subarea has a large number of sensitive plants (14 species) and mammals (12 species), most of which can be expected on and near the lower slopes of the San Gabriel Mountains or along washes. Plants protected by the DNPA also occur within this subarea.

Potential impacts to listed, sensitive, and locally important species in this subarea are substantial. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. However, the reasonable worst-case scenario assumes that 1,251 of the 14,822 parcels (8 percent) within the Lake Los Angeles/Llano Valyermo/Littlerock subarea would be issued building permits over the 20-year 2015 to 2035 planning horizon. As such, the impacts within this subarea described above would be larger than the actual anticipated impacts.

Antelope Valley Northeast

There are six federally and State-listed species and associated habitats potentially present in this subarea that may be impacted by the proposed initiative. The Antelope Valley Northeast subarea is the least diverse subarea with regards to listed species. These include one reptile, one bird, and four mammals. The presence of Swainson's hawk is possible, but the lack of trees for nesting within the subarea limits its value as Swainson's hawk habitat. Nelson's antelope squirrel and San Bernardino kangaroo rat are also potentially present given the presence of habitat for these species. This subarea is very likely to have desert tortoise and Mohave ground squirrel, owed to is remoteness, and undeveloped desert plant communities. Almost all of this subarea (99 percent) is within desert tortoise critical habitat. This subarea has fewer sensitive species compared to the other subareas and the sensitive plants are expected to be concentrated within more alkali areas.

The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. However, the reasonable worst-case scenario assumes that zero parcels within the Antelope Valley Northeast subarea would be issued building permits over the 20-year 2015 to 2035 planning horizon. As such, it is not anticipated that substantial impacts to listed and special-status species would occur in this subarea.

Lancaster Northeast

There are seven federally and State-listed species and associated habitats potentially present in this subarea that may be impacted by the proposed initiative. These include one reptile, two bird, and four mammals. The list of potentially present species is similar to Antelope Valley Northeast; however, the habitat for these species likely is poorer quality, owed to the proximity to rural settlements around Lancaster. Furthermore, the predominant plants are *Atriplex* species, which are habitat for most of the listed species, but typically these species occur in lower abundance. This subarea also has the greatest amount of agricultural fields, meaning Swainson's hawks are very likely to nest within this subarea. There is no designated critical habitat for federally listed species present on parcels within this subarea. This subarea has fewer sensitive species compared to the other subareas and the sensitive plants are expected to be concentrated within more alkali areas.

Potential impacts to listed, sensitive, and locally important species in this subarea are substantial. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. However, the reasonable worst-case scenario assumes that 110 of the 6,794 parcels (2 percent) within the Lancaster Northeast subarea would be issued building permits over the 20-year 2015 to 2035 planning horizon. As such, the impacts within this subarea described above would be greater than the actual anticipated impacts.

East San Gabriel Mountains

There are 13 federally and State-listed species and associated habitats potentially present in this subarea that may be impacted by the proposed initiative. These include five plants, one fish, two amphibians, four birds, and one mammal. This subarea also contains small amounts of critical habitat for arroyo toad, Santa Ana sucker, and southern mountain yellow-legged frog. California gnatcatcher is unlikely to occur because parcels within East San Gabriel Mountains are interspersed with already developed parcels. In contrast, Nevin's barberry was documented in the adjacent Lopez Canyon in 1998, which has the same elevation and plant communities as the East San Gabriel Mountains. Townsend's big-eared bad is a habitat generalist and can occur almost anywhere, including East San Gabriel Mountains. Critical habitat for federally listed species is present on two percent of this subarea. The parcels within this subarea are widespread throughout the San Gabriel Mountains, which contain a large variety of habitat types and a large elevation gradient. As a result, this subarea has the potential for the most sensitive species.

The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. However, the reasonable worst-case scenario assumes that zero parcels within the East San Gabriel Mountains subarea would be issued building permits over the 20-year 2015 to 2035 planning horizon. As such, it is not anticipated that substantial impacts to listed and special-status species will occur in this subarea.

5.2.2 Riparian Communities and State-designated Sensitive Habitat

The proposed initiative would result in significant impacts to biological resources in relation to sensitive plant communities and riparian habitat because of allowable development in undeveloped habitats. Throughout the entire study area, the proposed initiative has the potential to indirectly impact up to 59 sensitive plant communities and 146,150 acres (28,245 acres covered by CalVeg data and 117,900 acres covered by DRECP data) that have the potential to contain a sensitive plant community. The proposed initiative indirectly could impact up to 49,812 acres (1 percent of the study area covered by CalVeg data and 14 percent of the study area covered by

DRECP data) that have the potential to contain a riparian plant community. Additionally, the proposed initiative could potentially impact up to 8,020 acres of potential State Jurisdictional Areas throughout the study area. Impacts within each subarea are discussed in detail below. While the proposed initiative would have no direct impacts on riparian habitat or other sensitive natural communities, indirect impacts would occur as a result of development being permitted in areas that are currently undeveloped. These impacts would include direct loss and fragmentation of sensitive communities as parcels are developed and the introduction of non-native plants that would degrade existing communities. Further, growth-inducing impacts resulting from the proposed initiative would include not only the development of infrastructure on parcels, but associated road improvements which may impact sensitive plant communities through the disturbance and removal of vegetation. Development of parcels within the proposed initiative study area would be subject to the provisions of Section 1600 of the State Fish and Game Code. Mitigation measures are required to reduce the level of impacts of the proposed initiative to riparian habitat and other sensitive natural communities.

Approximately 146,150 acres or 43 percent of the proposed initiative study area is potentially located within state-sensitive plant communities. Given the reasonable worst-case scenario of 184 building permits per year for a total of 3,680 building permits over the 20 year planning horizon, it can be expected that 43 percent of these 3,680 building permits or 1,582 parcels will be issued for areas within state-sensitive plant communities resulting in approximately 6,330 acres of potential development in areas potentially containing state-sensitive plant communities and 2,29 acres of state-sensitive plant community disturbance.

Approximately 49,810 acres or 15 percent of the proposed initiative study area is potentially located within riparian habitat. It can be expected that 15 percent of the 3,680 building permits or 552 parcels will be issued for areas within potential riparian habitat. This would result in approximately 2,208 acres of potential development in areas potentially containing riparian habitat and 795 acres of potential riparian habitat disturbance.

Approximately 8,020 acres or 2 percent of the proposed initiative study area is potentially located within State Jurisdictional Areas. It can be expected that 2 percent of the 3,680 building permits or 74 parcels will be issued for areas within State Jurisdictional Areas, resulting in 294 acres of potential development in areas potentially containing State Jurisdictional Areas and 106 acres of potential State Jurisdictional Area disturbance. As such, the potential exists for the proposed initiative to impact state sensitive plant communities and riparian habitat, which constitutes a significant impact requiring the consideration of mitigation measures.

Castaic/Santa Clarita/Agua Dulce

There is potential for 32 sensitive plant communities, 16 of which are riparian communities, and an additional 11 non-sensitive riparian plant communities to be impacted in this subarea. The riparian areas along the Santa Clara River and tributaries are State sensitive Fremont' Cottonwood Forest (*Populaus fremontii* Forest Alliance), Scale Broom Scrub (*Lepidospartum squamatum* Shrubland Alliance), and Red Willow Thickets (*Salix laevigata* Shrubland Alliance); in addition, the Arroyo Willow Thicket (*Salix lasiolepis* Shrubland Alliance) that predominates has a State sensitive association, which means the entirety of the community should be considered State sensitive until field verification. Other, non-State sensitive plant communities occur within these riparian habitats along the Santa Clara River and tributaries.

Potential impacts to riparian communities, State-sensitive plant communities, and State Jurisdictional Areas in this subarea are significant. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 9,655 acres or 27 percent of this subarea is located within potential state-sensitive plant communities. It can be expected that 27 percent of the 735 building permits or 198 parcels will be issued for areas within state-sensitive plant communities in this subarea in this subarea. This would result in approximately 794 acres of potential development in areas potentially containing state-sensitive plant communities and 286 acres of potential state-sensitive plant community disturbance in this subarea.

Approximately 490 acres or 1 percent of this subarea is located within potential riparian habitat. It can be expected that 1 percent of the 735 building permits or 7 parcels will be issued for areas potentially within riparian habitat in this subarea. This would result in approximately 29 acres of potential development in areas potentially containing riparian habitat and 11 acres of potential riparian habitat disturbance in this subarea.

Approximately 802 acres or 2 percent of this subarea is located within potential State Jurisdictional Areas. It can be expected that 2 percent of the 735 building permits or 15 parcels will be issued for areas within potential State Jurisdictional Areas in this subarea. This would result in approximately 59 acres of potential development in areas potentially containing State Jurisdictional Areas and 21 acres of potential State Jurisdictional Areas disturbance in this subarea.

The Los Angeles Flood Control District (LACFCD) includes the Newhall Ranch portion of the Castaic/ Santa Clarita/ Agua Dulce subarea. In the event any flood protection facility is built in an upland type area, as a result of increased development resulting from approval of building permits for single-family homes where hauled water is authorized as the primary source of potable water, the Water Resources Division of DPW anticipates that such facilities, due to their function, would likely convert upland area to waters of the United States. Maintenance activities in open earthen bottom channel, check dams, retention and detention basins would have the potential to require routine removal of riparian and aquatic habitats and would thus be subject to regulation under the State Fish and Game Code Section 1601 (Lake/Streambed Alteration Agreements with the CA Department of Fish and Wildlife), and the LACFCD maintenance standards and practices for removal or conversion of aquatic and riparian habitats, in perpetuity over the life of the facility during storm season, before storm season, and after storm season. Facility maintenance would normally involve annual mowing of the facility bottom, dewatering of accumulated debris, and excavation of the debris which could include removal of accumulated debris and the root balls of opportunistic vegetation within the debris cone of the facility during cleanouts of the facility, and hauling material to a disposal site. Therefore, LACFCD would not allow any plantings in the vicinity of the facility right of way that would have the potential to attract sensitive species that would have the potential to constrain maintenance and cleanouts of the facility and its appurtenant features.

As a requirement of the grading permit and the Building Permit application process, the Department of Building and Safety requires the property owner to install a 200-gallon onsite retention basin or include at least two of the Low Impact Development Best Management Practices. These measures are required to minimize the impacts of stormwater runoff from impervious surfaces on natural drainages. The property owner is responsible for maintenance of retention basins and other onsite facilities installed on private property.

Acton

There is potential for 26 sensitive plant communities, 11 of which are riparian communities, and an additional four non-sensitive riparian plant communities to be impacted in this subarea. The reason for the diversity in this subarea is that this area has a mix of riparian (i.e., the Santa Clara River) and chaparral plant communities with a transition to desert plant communities. The riparian habitat in this subarea is similar in composition to the Castaic/Santa Clarita/Agua Dulce subarea but with a higher probability of California Sycamore Woodland (*Platanus racemosa* Woodland Alliance). The difference between Acton and the Castaic/Santa Clarita/Agua Dulce subareas generally is due to the transition into the Mojave Desert, including Joshua Tree Woodlands (*Yucca brevifolia* Woodland Alliance), Narrow-leaf Goldenbush Scrub (*Ericameria linearifolia* Shrubland Alliance), Anderson's Boxthorn Scrub (*Lycium andersonii* Shrubland Alliance), and Nodding Needle Grass Grassland (*Nassella cernua* Herbaceous Alliance).

Potential impacts to riparian communities, State-sensitive plant communities, and State Jurisdictional Areas in this subarea are significant. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 1,680 acres or 9 percent of this subarea is located within potential state-sensitive plant communities. It can be expected that 9 percent of the 737 building permits or 66 parcels will be issued for areas within state-sensitive plant communities in this subarea. This would result in 265 acres of potential development in areas potentially containing state-sensitive plant communities and 96 acres of potential state-sensitive plant community disturbance in this subarea.

Approximately 1,080 acres or 6 percent of this subarea is located within potential riparian habitat. It can be expected that 6 percent of the 737 building permits or 44 parcels will be issued for areas potentially within riparian habitat in this subarea. This would result in approximately 177 acres of potential development in areas potentially containing riparian habitat and 64 acres of potential riparian habitat disturbance in this subarea.

Approximately 275 acres or 2 percent of this subarea is located within potential State Jurisdictional Areas. It can be expected that 2 percent of the 737 building permits or 15 parcels will be issued for areas within potential State Jurisdictional Areas in this subarea. This would result in approximately 59 acres of potential development in areas potentially containing State Jurisdictional Areas and 21 acres of potential State Jurisdictional Areas disturbance in this subarea.

The LACFCD includes the Acton portion of the study area. In the event any flood protection facility is built in an upland type area, as a result of increased development resulting from approval of building permits for single-family homes where hauled water is authorized as the primary source of potable water, the Water Resources Division of DPW anticipates that such facilities, due to their function, would likely convert upland area to waters of the United States. Maintenance activities in open earthen bottom channel, check dams, retention and detention basins would have the potential to require routine removal of riparian and aquatic habitats and would thus be subject to regulation under the State Fish and Game Code Section 1601 (Lake/Streambed Alteration Agreements with the CA Department of Fish and Wildlife), and the LACFCD maintenance standards and practices for removal or conversion of aquatic and riparian habitats, in perpetuity over the life of the facility during storm season, before storm season, and after storm season. Facility maintenance would normally involve annual mowing of the facility bottom, dewatering of accumulated debris, and excavation of the debris which could include removal of accumulated debris and the root balls of opportunistic vegetation within the debris cone of the facility during cleanouts of the facility, and hauling material to a disposal site. Therefore, LACFCD would not

allow any plantings in the vicinity of the facility right of way that would have the potential to attract sensitive species that would have the potential to constrain maintenance and cleanouts of the facility and its appurtenant features.

As a requirement of the grading permit and the Building Permit application process, the Department of Building and Safety requires the property owner to install a 200-gallon onsite retention basin or include at least two of the Low Impact Development Best Management Practices. These measures are required to minimize the impacts of stormwater runoff from impervious surfaces on natural drainages. The property owner is responsible for maintenance of retention basins and other onsite facilities installed on private property.

Lake Hughes/Gorman/West of Lancaster

There is potential for 40 sensitive plant communities, 17 of which are riparian communities, and an additional 13 non-sensitive riparian plant communities to be impacted in this subarea. This subarea has the highest diversity of potential sensitive plant communities. The reason for the large numbers and diverse sensitive plant communities is because the subarea is largely undeveloped, has both mountains and desert, and is at the transition zone between major eco-types. This subarea has less *Ceanothus* scrub and more oak woodlands and chaparral, including the State-sensitive Valley Oak Woodland Canyon Live Oak Chaparral (*Quercus chrysolepis* Shrubland Alliance), and Basket Bush Thickets (*Rhus trilobata* Provisional Shrubland Alliance); in addition, the Scrub Oak Chaparral (*Quercus berberidifolia* Shrubland Alliance) that predominates has a State-sensitive association with Cup-leaf Ceanothus (*Ceanothus greggii*), which occurs in the transition zones and the desert. Wet meadows are present within the Leona Valley and near Gorman, which can host a number of State-sensitive herbaceous communities. Within the Mojave Desert portions of this subarea, dry washes have the potential for State-sensitive communities, such as Black-stem Rabbitbush Scrub (*Ericameria paniculata* Shrubland Alliance), and Joshua Tree Woodlands occur along the lower slopes of Portal Ridge.

Potential impacts to riparian communities, State-sensitive plant communities, and State Jurisdictional Areas in this subarea are significant. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 55,330 acres or 44 percent of this subarea is located within potential state-sensitive plant communities. It can be expected that 44 percent of the 847 building permits or 373 parcels will be issued for areas within state-sensitive plant communities in this subarea. This would result in approximately 1,491 acres of potential development in areas potentially containing state-sensitive plant communities and 537 acres of potential state-sensitive plant community disturbance in this subarea.

Approximately 10,340 acres or 8 percent of this subarea is located within potential riparian habitat. It can be expected that 8 percent of the 847 building permits or 68 parcels will be issued for areas potentially within riparian habitat in this subarea. This would result in approximately 271 acres of potential development in areas potentially containing riparian habitat and 98 acres of potential riparian habitat disturbance in this subarea.

Approximately 1,535 acres or 1 percent of this subarea is located within potential State Jurisdictional Areas. It can be expected that 1 percent of the 847 building permits or eight parcels will be issued for areas within potential State Jurisdictional Areas in this subarea. This would result in approximately 34 acres of potential development in areas potentially containing State Jurisdictional Areas and 12 acres of potential State Jurisdictional Areas disturbance in this subarea.

Lake Los Angeles/Llano/Valyermo/Littlerock

There is potential for 27 sensitive plant communities, 10 of which are riparian communities, and an additional nine non-sensitive riparian plant communities to be impacted in this subarea. The reason for a large amount of the area being potentially sensitive partially due to the presence of State-sensitive Creosote–White Burr Sage Scrub (*Larrea tridentate–Ambrosia dumosa* Shrubland Alliance), which forms a State-sensitive association with *Petalonyx thurberi* in desert washes. Creosote–White Burr Sage Scrub dominates the plant communities in this subarea; so although the State-sensitive alliance only occurs in washes, the large number of washes that originate on the north side of the San Gabriel Mountains warrants considering most of the area as a State-sensitive plant community. The foothills are also areas for other State-sensitive plant communities, such as Andersons Boxthorn Scrub and Canyon Live Oak Chaparral, Indian Rice Grass Grasslands (*Achnatherum [Stipa] hymenoides* Herbaceous Alliance), and Desert Olive Patches (*Forestiera pubescens* Shrubland Alliance). Riparian habitats include State-sensitive Scalebroom Scrub and non-State sensitive Cheesebush Scrub (*Ambrosia salsola* Shrubland Alliance), which are common along the large number of washes in the subarea.

Potential impacts to riparian communities, State-sensitive plant communities, and State Jurisdictional Areas in this subarea are significant. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 54,970 acres or 51 percent of this subarea is located within potential state-sensitive plant communities. It can be expected that 51 percent of the 1,251 building permits or 638 parcels will be issued for areas within state-sensitive plant communities in this subarea. This would result in approximately 2,552 acres of potential development in areas potentially containing state-sensitive plant communities and 919 acres of potential state-sensitive plant community disturbance in this subarea.

Approximately 14,695 acres or 14 percent of this subarea is located within potential riparian habitat. It can be expected that 14 percent of the 1,251 building permits or 175 parcels will be issued for areas potentially within riparian habitat in this subarea. This would result in approximately 700 acres of potential development in areas potentially containing riparian habitat and 252 acres of potential riparian habitat disturbance in this subarea.

Approximately 3,315 acres or 3 percent of this subarea is located within potential State Jurisdictional Areas. It can be expected that 3 percent of the 1,251 building permits or 38 parcels will be issued for areas within potential State Jurisdictional Areas in this subarea. This would result in approximately 150 acres of potential development in areas potentially containing State Jurisdictional Areas and 54 acres of potential State Jurisdictional Areas disturbance in this subarea.

Antelope Valley Northeast

There is potential for 17 sensitive plant communities, eight of which are riparian communities, and an additional five non-sensitive riparian plant communities to be impacted in this subarea. The plant communities within this area are not very diverse, with Creosote–White Burr Sage Scrub being the predominant community. Given that the Creosote–White Burr Sage Scrub plant community is considered sensitive because of a State-sensitive association, 14,020 acres of the subarea have potential for sensitive plant communities. The potential riparian habitat, which is about 795 acres, is likely higher than what is actually present within the subarea because Spinescale Scrub (*Atriplex spinifera* Shrubland Alliance), which is a common State-sensitive

community in the subarea, was classified as riparian; this plant community occurs in alkali sinks where playas form (i.e., desert wetlands where water pools) and State-sensitive plants can occur. Other State-sensitive plant communities mostly occur within the washes, but near the alkali flats there is a possibility for Winterfat Scrubland (*Krascheninnikovia lanata* Scrubland Alliance) and Spiny Hop Sage Scrub (*Grayia spinosa* Shrubland Alliance). In addition, it was determined that up to 565 acres of State Jurisdictional Areas have the potential to be present within this subarea.

Potential impacts to riparian communities, State-sensitive plant communities, and State Jurisdictional Areas in this subarea are significant. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. However, the reasonable worst-case scenario assumes that zero parcels within the Antelope Valley Northeast subarea would be issued building permits over the 20-year 2015 to 2035 planning horizon. As such, it is not anticipated that substantial impacts to State-sensitive and riparian plant communities will occur in this subarea.

Lancaster Northeast

There is potential for 16 sensitive plant communities, 11 of which are riparian communities, and an additional eight non-sensitive riparian plant communities to be impacted in this subarea. The plant communities in the Lancaster Northeast and Antelope Valley Northeast are similar; however, the Lancaster Northeast subarea has more *Atriplex* communities because water flow from the Big Rock and Little Rock Washes begins to slow and pool in the area, ultimately ending in the Rosamond Dry Lake two miles to the north. Almost all of the State-sensitive plant communities in this subarea are associated with the riparian washes or the alkali flats, except for some Creosote Bush–White Burr sage Scrub to the east and Joshua Tree Woodlands close to Lancaster. This subarea had the largest percent considered riparian compared to the other subareas because of the presence of alkali flats and washes. Much of the area is dominated by State-sensitive wash and riparian plant communities or non-State sensitive *Atriplex* communities.

Potential impacts to riparian communities, State-sensitive plant communities, and State Jurisdictional Areas in this subarea are significant. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 7,720 acres or 22 percent of this subarea is located within potential state-sensitive plant communities. It can be expected that 22 percent of the 110 building permits or 24 parcels will be issued for areas within state-sensitive plant communities in this subarea. This would result in approximately 97 acres of potential development in areas potentially containing state-sensitive plant communities and 35 acres of potential state-sensitive plant community disturbance in this subarea.

Approximately 21,885 acres or 62 percent of this subarea is located within potential riparian habitat. It can be expected that 62 percent of these 110 building permits or 68 parcels will be issued for areas potentially within riparian habitat in this subarea. This would result in approximately 273 acres of potential development in areas potentially containing riparian habitat and 98 acres of potential riparian habitat disturbance in this subarea.

Approximately 1,310 acres or 4 percent of this subarea is located within potential State Jurisdictional Areas. It can be expected that 4 percent of these 110 building permits or 4 parcels will be issued for areas within potential State Jurisdictional Areas in this subarea. This would result in approximately 18 acres of potential development in areas potentially containing State Jurisdictional Areas and 6 acres of potential State Jurisdictional Areas disturbance in this subarea.

East San Gabriel Mountains

There is potential for 33 sensitive plant communities, 12 of which are riparian communities, and an additional six non-sensitive riparian plant communities to be impacted in this subarea. The reason for the large numbers and diverse sensitive plant communities is because of the subarea is largely undeveloped, spans the entirety of the San Gabriel Mountains, has a large elevation gradient, and is at the transition zone between major eco-types. If all parcels in the East San Gabriel Mountains subarea were developed as a result of the proposed initiative, it would result in up to 2,775 acres of sensitive plant communities potentially impacted. In addition, 530 acres of riparian habitat could be impacted. It was also determined that up to 210 acres of State Jurisdictional Areas have the potential to be present within this subarea. The reasonable worst-case scenario assumes that zero parcels within the East San Gabriel Mountains subarea would be issued building permits over the 20-year 2015 to 2035 planning horizon. As such, it is not anticipated that substantial impacts to State-sensitive and riparian plant communities will occur in this subarea.

The LACFCD includes the East San Gabriel Mountains portion of the study area. In the event any flood protection facility is built in an upland type area, as a result of increased development resulting from approval of building permits for single-family homes where hauled water is authorized as the primary source of potable water, the Water Resources Division of DPW anticipates that such facilities, due to their function, would likely convert upland area to waters of the United States. Maintenance activities in open earthen bottom channel, check dams, retention and detention basins would have the potential to require routine removal of riparian and aquatic habitats and would thus be subject to regulation under the State Fish and Game Code Section 1601 (Lake/Streambed Alteration Agreements with the CA Department of Fish and Wildlife), and the LACFCD maintenance standards and practices removal or conversion of aquatic and riparian habitats, in perpetuity over the life of the facility during storm season, before storm season, and after storm season. Facility maintenance would normally involve annual mowing of the facility bottom, dewatering of accumulated debris, and excavation of the debris which could include removal of accumulated debris and the root balls of opportunistic vegetation within the debris cone of the facility during cleanouts of the facility, and hauling material to a disposal site. Therefore, LACFCD would not allow any plantings in the vicinity of the facility right of way that would have the potential to attract sensitive species that would have the potential to constrain maintenance and cleanouts of the facility and its appurtenant features.

As a requirement of the grading permit and the Building Permit application process, the Department of Building and Safety requires the property owner to install a 200-gallon onsite retention basin or include at least two of the Low Impact Development Best Management Practices. These measures are required to minimize the impacts of stormwater runoff from impervious surfaces on natural drainages. The property owner is responsible for maintenance of retention basins and other onsite facilities installed on private property.

The proposed initiative would be expect to result in significant impacts to State-designated riparian and other sensitive plant communities, including areas subject to Section 1600 of the State Fish and Game Code. The County building permit process does not currently require property owners to demonstrate compliance with Section 1600 of the State Fish and Game Code. However, the CDFW requires applicants for Streambed and Lake Alteration Agreements (SLAA) to demonstrate that there will no net loss of habitat function or value as a result of the SLAA; therefore, alteration of lands subject to the jurisdiction of the CDFW, as a result of the construction of single-family homes and infrastructure, developed as a result of the proposed initiative would be expected to be

reduced to below the level of significance, as required by the SLAA notification and agreement process. However, there is no Federal, State, or local statute that requires avoidance or compensation for State-designated sensitive habitats located beyond the limits of the area subject to the jurisdiction of the CDFW pursuant to Section 1600 of the State Fish and Game Code, and the conversion of an estimated 2,280 acres of State-sensitive plant communities and 795 acres of riparian habitat would be a significant impact.

5.2.3 Federal "Waters of the United States"

The proposed initiative would result in significant impacts to biological resources in relation to federally protected wetlands and Waters of the United States as defined by Section 404 of the Clean Water Act because of allowable development in undeveloped locations, warranting the consideration of mitigation measures. Throughout the entire study area, the proposed initiative may impact up to 1,440 acres of federal wetlands and 220 linear miles of federal waterways. Impacts within each subarea are discussed in detail below. While the proposed initiative would have no direct impacts on federally protected wetlands and waterways, indirect impacts would occur as a result of development being permitted in areas that are currently undeveloped. These impacts would include disruption of streams and wetlands through adjacent development, and dredge and fill activities associated with development. Further, growth-inducing impacts resulting from the proposed initiative would include not only the development of infrastructure on parcels, but associated road improvements which may impact federally protected wetlands via dredge and fill activities. Development of parcels within the proposed initiative study area would be subject to the provisions of Section 404 of the Federal Clean Water Act. Dredge or fill in Waters of the United States is subject to the regulatory authority of the USACOE pursuant to Section 404 of the Federal Clean Water Act. The use of an authorized Nationwide Permit or issuance of an individual permit, requires the project applicant to demonstrate compliance with the Corps' Final Compensatory Mitigation Rule. Each year thousands of property owners undertake projects that affect the nation's aquatic resources. Proposed projects that are determined to impact jurisdictional waters are first subject to review under the Clean Water Act. The USACOE reviews these projects to ensure environmental impacts to aquatic resources are avoided or minimized as much as possible. Consistent with the administration's goal of "no net loss of wetlands" a USACOE permit may require a property owner to restore, establish, enhance or preserve other aquatic resources in order to replace those impacted by the proposed project. This compensatory mitigation process seeks to replace the loss of existing aquatic resource functions and area. Property owners required to complete mitigation are encouraged to use a watershed approach and watershed planning information. The new rule establishes performance standards, sets timeframes for decision making, and to the extent possible, establishes equivalent requirements and standards for the three sources of compensatory mitigation: permittee-responsible mitigation, mitigation banks and in-lieu-fee programs.

Approximately 1,440 acres or 0.4 percent of the proposed initiative study area is potentially located within state-sensitive plant communities. Given the reasonable worst case scenario of 184 building permits per year for a total of 3,680 building permits over the 20 year planning horizon, it can be expected that less than 1 percent of these 3,680 building permits or fewer than 16 parcels will be issued for areas within federal wetlands and waterways. This would result in approximately 62 acres of potential development in areas potentially containing federal wetlands and waterways and 22 acres of federal wetland and waterway disturbance. As such, the potential for the proposed initiative to impact federal wetlands and waterways exists, which constitutes a significant impact requiring the consideration of mitigation measures.

Castaic/Santa Clarita/Agua Dulce

This subarea occurs entirely within the Santa Clara River Watershed. There two types of federally protected wetlands and waterways within the Castaic/Santa Clarita/Agua Dulce subarea: vernal pools on the Cruzan Mesa and riparian/wetland communities along the edge of the Santa Clara River and tributaries. There are approximately 800 acres of federal wetlands/waterways (2 percent of the total subarea) and 125 miles of blue-line waterways that may be impacted within this subarea.

Given the presence of these federal wetlands and waterways, the proposed initiative has the potential to indirectly and significantly affect wetlands and Waters of the United States subject to Section 404 of the Clean Water Act in this subarea. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 800.1 acres or two percent of this subarea is located within areas containing potential federal wetlands and waterways. It can be expected that two percent of the 735 building permits or 15 parcels will be issued for areas containing federal wetlands and waterways in this subarea. This would result in approximately 59 acres of potential development in areas potentially containing Federal wetlands and waterways and 21 acres of potential federal wetlands and waterways disturbance.

The LACFCD includes the Newhall Ranch portion of the Castaic/ Santa Clarita/ Agua Dulce subarea. In the event any flood protection facility is built in an upland type area, as a result of increased development resulting from approval of building permits for single-family homes where hauled water is authorized as the primary source of potable water, the Water Resources Division of DPW anticipates that such facilities, due to their function, would likely convert upland area to waters of the United States. Maintenance activities in open earthen bottom channel, check dams, retention and detention basins would have the potential to require routine removal of riparian and aquatic habitats and would thus be subject to regulation under the Sections 401 and 404 of the Federal Clean Water Act, and the LACFCD maintenance standards and practices for removal or conversion of aquatic and riparian habitats, in perpetuity over the life of the facility during storm season, before storm season, and after storm season. Facility maintenance would normally involve annual mowing of the facility bottom, dewatering of accumulated debris, and excavation of the debris which could include removal of accumulated debris and the root balls of opportunistic vegetation within the debris cone of the facility during cleanouts of the facility, and hauling material to a disposal site. Therefore, LACFCD would not allow any plantings in the vicinity of the facility right of way that would have the potential to attract sensitive species that would have the potential to constrain maintenance and cleanouts of the facility and its appurtenant features.

As a requirement of the grading permit and the Building Permit application process, the Department of Building and Safety requires the property owner to install a 200-gallon onsite retention basin or include at least two of the Low Impact Development Best Management Practices. These measures are required to minimize the impacts of stormwater runoff from impervious surfaces on natural drainages. The property owner is responsible for maintenance of retention basins and other onsite facilities installed on private property.

Acton

This subarea occurs entirely within the Santa Clara River Watershed but contains fewer tributaries of the Santa Clara River compared to the Castaic/Santa Clarita/Agua Dulce subarea. Most of the federally protected wetlands and waterways are within the Santa Clara River itself, with a few

tributaries. There are approximately 215.7 acres of federal wetlands/waterways (one percent of the total subarea) and 40 miles of blue-line waterways that may be impacted within this subarea.

Given the presence of these federal wetlands and waterways, the proposed initiative has the potential to indirectly and significantly affect wetlands and Waters of the United States subject to Section 404 of the Clean Water Act in this subarea. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 215 acres or 1 percent of this subarea is located within areas containing potential Federal wetlands and waterways. It can be expected that 1 percent of the 737 building permits or seven parcels will be issued for areas containing federal wetlands and waterways in this subarea. This would result in approximately 30 acres of potential development in areas potentially containing federal wetlands and waterways and 11 acres of potential federal wetlands and waterways disturbance in this subarea.

The LACFCD includes the Acton portion of the study area. In the event any flood protection facility is built in an upland type area, as a result of increased development resulting from approval of building permits for single-family homes where hauled water is authorized as the primary source of potable water, the Water Resources Division of DPW anticipates that such facilities, due to their function, would likely convert upland area to waters of the United States. Maintenance activities in open earthen bottom channel, check dams, retention and detention basins would have the potential to require routine removal of riparian and aquatic habitats and would thus be subject to regulation under the Sections 401 and 404 of the Federal Clean Water Act, and the LACFCD maintenance standards and practices for removal or conversion of aquatic and riparian habitats, in perpetuity over the life of the facility during storm season, before storm season, and after storm season. Facility maintenance would normally involve annual mowing of the facility bottom, dewatering of accumulated debris, and excavation of the debris which could include removal of accumulated debris and the root balls of opportunistic vegetation within the debris cone of the facility during cleanouts of the facility, and hauling material to a disposal site. Therefore, LACFCD would not allow any plantings in the vicinity of the facility right of way that would have the potential to attract sensitive species that would have the potential to constrain maintenance and cleanouts of the facility and its appurtenant features.

As a requirement of the grading permit and the Building Permit application process, the Department of Building and Safety requires the property owner to install a 200-gallon onsite retention basin or include at least two of the Low Impact Development Best Management Practices. These measures are required to minimize the impacts of stormwater runoff from impervious surfaces on natural drainages. The property owner is responsible for maintenance of retention basins and other onsite facilities installed on private property.

Lake Hughes/Gorman/West of Lancaster

This subarea occurs partially within the Santa Clara River Watershed, which are the parcels south of Portal Ridge and the Mojave Desert. In addition, blue-line drainages and wetlands that feed into Quail Lake in this subarea are classified as federal wetlands and potentially subject to the jurisdiction of the USACOE. Wetlands in this subarea are either within riparian areas, drainages, or wet meadows. There are approximately 245 acres of wetlands/waterways (less than 1 percent of the total subarea) and 35 miles of blue-line waterways that may be impacted within this subarea.

Given the presence of these federal wetlands and waterways, the proposed initiative has the potential to indirectly and significantly affect wetlands and Waters of the United States subject to

Section 404 of the Clean Water Act in this subarea. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 245 acres or less than 1 percent of this subarea is located within areas containing potential federal wetlands and waterways. It can be expected that less than 1 percent of the 847 building permits or two parcels will be issued for areas containing federal wetlands and waterways in this subarea. This would result in approximately 7 acres of potential development in areas potentially containing federal wetlands and waterways and 2 acres of potential federal wetlands and waterways disturbance in this subarea.

Lake Los Angeles/Llano/Valyermo/Littlerock

There are no wetlands or waterways that connect to navigable waterways within this subarea. There are expected to be no impacts to federally-protected wetlands as defined by Section 404 of the Clean Water Act within this subarea.

Antelope Valley Northeast

There are no wetlands or waterways that connect to navigable waterways within this subarea., There are expected to be no impacts to federally-protected wetlands as defined by Section 404 of the Clean Water Act within this subarea.

Lancaster Northeast

There are no wetlands or waterways that connect to navigable waterways within this subarea. There are expected to be no impacts to federally-protected wetlands as defined by Section 404 of the Clean Water Act within this subarea.

East San Gabriel Mountains

This subarea occurs partially within the Los Angeles River Watershed and partially within the San Gabriel River Watershed. There are approximately 180 acres of wetlands/waterways (4 percent of the total subarea) and 20 miles of blue-line waterways that may be impacted within this subarea.

Given the presence of these federal wetlands and waterways, the proposed initiative has the potential to indirectly and significantly affect wetlands and Waters of the United States subject to Section 404 of the Clean Water Act. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. However, the reasonable worst-case scenario assumes that zero parcels within the East San Gabriel Mountains subarea would be issued building permits over the 20-year 2015 to 2035 planning horizon. As such, it is not anticipated that substantial impacts to federal wetlands and waterways will occur in this subarea.

The LACFCD includes the East San Gabriel Mountains portion of the study area. In the event any flood protection facility is built in an upland type area, as a result of increased development resulting from approval of building permits for single-family homes where hauled water is authorized as the primary source of potable water, the Water Resources Division of DPW anticipates that such facilities, due to their function, would likely convert upland area to waters of the United States. Maintenance activities in open earthen bottom channel, check dams, retention and detention basins would have the potential to require routine removal of riparian and aquatic habitats and would thus be subject to regulation under the Sections 401 and 404 of the Federal

Clean Water Act, and the LACFCD maintenance standards and practices for removal or conversion of aquatic and riparian habitats, in perpetuity over the life of the facility during storm season, before storm season, and after storm season. Facility maintenance would normally involve annual mowing of the facility bottom, dewatering of accumulated debris, and excavation of the debris which could include removal of accumulated debris and the root balls of opportunistic vegetation within the debris cone of the facility during cleanouts of the facility, and hauling material to a disposal site. Therefore, LACFCD would not allow any plantings in the vicinity of the facility right of way that would have the potential to attract sensitive species that would have the potential to constrain maintenance and cleanouts of the facility and its appurtenant features.

As a requirement of the grading permit and the Building Permit application process, the Department of Building and Safety requires the property owner to install a 200-gallon onsite retention basin or include at least two of the Low Impact Development Best Management Practices. These measures are required to minimize the impacts of stormwater runoff from impervious surfaces on natural drainages. The property owner is responsible for maintenance of retention basins and other onsite facilities installed on private property.

The proposed initiative would be expected to result in significant impacts to Waters of the United States and other wetlands. The County does not currently require property owners to demonstrate compliance with Section 404 of the Federal Clean Water Act during the building permit application process. However, the USACOE requires property owners seeking authorization to exercise a Nationwide Permit or seeking an Individual Permit pursuant to Section 404 of the Federal Clean Water Act to demonstrate that there will be no net loss of habitat function or value as a result of the Section 404 Nationwide or Individual Permit. Therefore, alteration of lands subject to the jurisdiction of the USACOE, as a result of the construction of single-family homes and infrastructure developed as a result of the proposed initiative would be expected to be reduced to below the level of significance, as required by the USACOE Section 404 permitting process.

5.2.4 Migratory Corridors

The proposed initiative would result in significant impacts to biological resources in relation to migratory wildlife corridors and nursery sites because of allowable development in undeveloped locations, warranting the consideration of mitigation measures. Throughout the study area, up to 146,715 acres of 10 SEAs have the potential to be impacted by the proposed initiative. Impacts within each subarea are discussed in detail below. While the proposed initiative would have no direct impacts on migratory corridors and nursery sites, indirect impacts would occur as a result of development being permitted in areas that are currently undeveloped. These impacts would include direct habitat fragmentation that would disrupt corridor functionality as parcels are developed, and introduction of lighting and noise that may disturb nursery sites. Further, growth-inducing impacts resulting from the proposed initiative would include not only the development of infrastructure on parcels, but associated road improvements which may impact wildlife corridors and nursery sites through disturbance and removal of vegetation as well as increased light and noise during and after improvements. The current SEA ordinance does not regulate the development of single-family residences; as such, significant impacts to SEAs within the study area would occur as a result of the proposed initiative.

The proposed initiative allows for development of previously undeveloped areas where development has been limited due to the location of a parcel outside the limits of an established water district, where the property owner has not been able to demonstrate access to a reliable source of potable water. Developing these parcels has the potential to disrupt migratory corridors

differently than the impacts on other biological resources previously disclosed because even one development within a frequented corridor could shift wildlife patterns, especially for more elusive, human-shy species. Furthermore, the proposed initiative would result in habitat fragmentation which could in turn result in many small obstacles for wildlife movement rather than a clear, unobstructed pathway.

Approximately 146,715 acres or 43 percent of the proposed initiative study area is potentially located within state-sensitive plant communities. Given the reasonable worst-case scenario of 184 building permits per year for a total of 3,680 building permits over the 20 year planning horizon, it can be expected that 43 percent of these 3,680 building permits or 1,582 parcels will be issued for areas within SEAs. This would result in approximately 6,330 acres of potential development in areas within SEAs and 2,279 acres of SEA disturbance. As such, the potential for the proposed initiative to impact wildlife movement corridors and nursery sites exists, which constitutes a significant impact requiring the consideration of mitigation measures.

Castaic/Santa Clarita/Agua Dulce

Parcel development along the Santa Clara River in this subarea has the potential to obstruct movement along the river and tributaries if roads and driveways must be developed to cross these corridors. Furthermore, the river itself is an important nursery site for several species of fish. Several parcels in this subarea occur high in the Santa Susanna Mountains, but these parcels appear to have been incorporated into Open Space Preserves, thereby protecting the corridor. Most of the remaining areas within potential migratory corridors are located east of Piru Lake, where wildlife movement occurs between the San Gabriel and the Sierra Pelona Mountains; this linkage has been identified as important within the South Coast Missing Linkages report.[13]

Potential impacts to wildlife movement corridors and nursery sites within this subarea are significant. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 14,920 acres or 42 percent of this subarea is located within SEAs. It can be expected that 42 percent of the 735 building permits or 309 parcels will be issued for areas within SEAs in this subarea. This would result in approximately 1,235 acres of potential development in areas within SEAs and 445 acres of potential SEA disturbance in this subarea.

Acton

Parcel development along the Santa Clara River in this subarea has the potential to obstruct movement along the river and tributaries if roads and driveways must be developed to cross these corridors. Furthermore, the river itself is an important nursery site for several species of fish. Several parcels in this subarea occur within a migratory pathway between the Sierra Pelona Mountains the San Gabriel Mountains along a pathway that crosses near Agua Dulce.[14]

Potential impacts to wildlife movement corridors and nursery sites within this subarea are significant. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 3,685 acres or 20 percent of this subarea is located within SEAs. It can be expected that 20 percent of the 737 building permits or 147 parcels will be issued for areas within SEAs in this subarea. This would result in approximately

[13] http://www.scwildlands.org/reports/SCML_SierraMadre_Castaic.pdf

[14] http://www.scwildlands.org/reports/SCML_SanGabriel_Castaic.pdf

590 acres of potential development in areas within SEAs and 212 acres of potential SEA disturbance in this subarea.

Lake Hughes/Gorman/West of Lancaster

This subarea is likely important as a migratory corridor because Portal Ridge and Leona Valley move wildlife from the San Gabriel Mountains into the San Emigdio Mountains and Tehachapi Mountains. For this reason, the area around Gorman may be important because of linkages between the Mojave Desert and Central Valley and among the different mountain ranges. It is expected that California Condors may move through the Gorman area given that populations have been reintroduced into the Topatopa and Tehachapi Mountains.

Potential impacts to wildlife movement corridors and nursery sites within this subarea are significant. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 44,095 acres or 35 percent of this subarea is located within SEAs. It can be expected that 35 percent of the 847 building permits or 296 parcels will be issued for areas within SEAs. This would result in approximately 1,186 acres of potential development in areas within SEAs and 427 acres of potential SEA disturbance in this subarea.

Lake Los Angeles/Llano/Valyermo/Littlerock

Parcels located along the Big Rock Wash, Little Rock Wash, and other small washes that feed into Rogers and Rosamond Dry Lakes are situated within known migration routes for wildlife. Such washes could allow wildlife to move between the foothills of the San Gabriel Mountains and Rogers/Rosamond Dry Lakes. Furthermore, the dry lakes on Edwards Air Force Base are considered a globally significant area for wintering and migrating birds.

Potential impacts to wildlife movement corridors and nursery sites within this subarea are significant. The impacts described above assume that every parcel within this subarea will be developed as a result of the proposed initiative. Approximately 49,385 acres or 46 percent of this subarea is located within SEAs. It can be expected that 46 percent of the 1,251 building permits or 575 parcels will be issued for areas within SEAs in this subarea. This would result in approximately 2,302 acres of potential development in areas within SEAs and 829 acres of potential SEA disturbance.

Antelope Valley Northeast

This subarea occurs east of the main wildlife corridors between the San Gabriel Mountains and Rogers/Rosamond Dry Lakes. However, this subarea links Antelope Valley to the eastern Mojave Desert, via the Kramer Hills, and may be a corridor between Rogers/Rosamond Dry Lakes and El Mirage Dry Lake. The Antelope Valley SEA covers 10,870 acres or 75 percent of this subarea in part because of the existence of this wildlife movement. Additionally the subarea is within the migratory corridor moving along the Big Rock Wash, Little Rock Wash, and other small washes that feed into Rogers and Rosamond Dry Lakes.

The reasonable worst-case scenario assumes that zero parcels within the Antelope Valley Northeast subarea would be issued building permits over the 20-year 2015 to 2035 planning horizon. As such, it is not anticipated that substantial impacts to migratory corridors or nursery sites will occur in this subarea.

Lancaster Northeast

This subarea is within the same corridor as the Antelope Valley Northeast and Lake Los Angeles/Llano/Valyermo/Littlerock subareas. These parcels are located adjacent to the Rogers and Rosamond Dry Lakes, which are considered globally important areas for wintering and migrating birds.

Therefore, potential impacts to wildlife movement corridors and nursery sites within this subarea habe the potential to be substantial. Approximately 23,280 acres or 66 percent of this subarea is located within SEAs. It can be expected that 66 percent of the 110 building permits or 73 parcels will be issued for areas within SEAs in this subarea. This would result in approximately 290 acres of potential development in areas within SEAs and 105 acres of potential SEA disturbance in this subarea.

East San Gabriel Mountains

The eastern edge of the East San Gabriel Mountains subarea is within the corridor connecting the San Gabriel and San Bernardino Mountains. The San Gabriel River Watershed, which occupies the eastern portion of the East San Gabriel Mountains subarea, is a nursery site for many endemic fish species such as the Santa Ana sucker and the Santa Ana speckled dace. In total, approximately 485 acres (12 percent of the total subarea) of the subarea that may be impacted by the proposed initiative are located within SEAs, which often serve as wildlife corridors.

The reasonable worst-case scenario assumes that zero parcels within the East San Gabriel Mountains subarea would be issued building permits over the 20-year 2015 to 2035 planning horizon. As such, it is not anticipated that substantial impacts to migratory corridors or nursery sites will occur in this subarea.

The proposed initiative would be expected to result in significant impacts to wildlife movement corridors, particularly whose importance is recognized pursuant to a designation as an SEA, as a result of the development of single-family homes and related infrastructure that would be expected to result in the development of up to 1,582 parcels, and conversion of 2,279 acres of habitat within SEAs. However, there is no federal, State, or local statute that requires avoidance or compensation for natural habitat or wildlife movement corridors within SEAs that are converted to single-family residences or related infrastructure. The conversion of an estimated 2,279 acres of habitat and potential wildlife movement areas would be a significant impact.

5.2.5 General Plans and Policies

The proposed initiative would result in significant impacts to biological resources in relation to conflicts with local polices or ordinances protecting biological resources because of allowable development in currently undeveloped locations, warranting the consideration of mitigation measures. Facilitating development throughout the study area has the potential to conflict with local policies protecting biological resources that are relevant to the proposed initiative. Conflicts with each applicable Plan and/or Ordinance are discussed below. The potential for the proposed initiative to impact biological resources in relation to conflicts with local policies and ordinances exists, which constitutes a significant impact requiring the consideration of mitigation measures.

Los Angeles County General Plan 2035

Policy C/NR 3.1 of the Plan states that the County will "conserve and enhance the ecological function of diverse natural habitats and biological resources." The proposed initiative would be expected to conflict with this policy because the initiative would allow for building residences in areas that currently cannot be developed for single-family residences due to lack of a reliable source of potable water, including parcels that may contain natural habitats and sensitive biological resources. If development occurs on these parcels as a result of the proposed initiative, then the ecological function of the parcels would be disrupted. Furthermore, although single-family residences are currently permitted within SEAs, any development within the SEAs could result in a decrease in function of the ecosystems.

Policy C/NR 3.6 states that the County will "assist state and federal agencies and other agencies, as appropriate, with the preservation of special-status species and their associated habitat and wildlife movement corridors through the administration of the SEAs and other programs." The proposed initiative would not affect the County's ability to coordinate with state and federal agencies regarding special status species and their associated habitat and wildlife movement corridors through the administration of the SEAs and other programs. Therefore, the proposed initiative is not expected to conflict with this policy.

Policy C/NR 3.8 states that the County will "Discourage development in areas with identified significant biological resources, such as SEAs." The proposed initiative would conflict with this policy because it would indirectly encourage development within SEAs (which cover approximately 23 percent of the study area) through allowing the use of hauled water for ministerial single-family residential development. Similarly, Policy C/NR 3.11 states that the County will "discourage development in riparian habitats, streambeds, wetlands, and other native woodlands in order to maintain and support their preservation in a natural state, unaltered by grading, fill, or diversion activities." The proposed initiative is expected to partially conflict with this policy because while any alteration of waters of the State would require a Streambed Alteration Agreement for which CDFW would ensure that no net loss of habitat functions or values occurs, other native woodlands are not afforded this protection under state or federal statutes. Any discharge of dredge or fill material into federal Waters of the United States would be subject to a permit under Section 404 of the Clean Water Act. As such, adherence to state and federal regulations related to watersheds, streams, and riparian vegetation would partially eliminate conflicts with this policy. However, conflicts related to development in native woodlands would remain.

Policy C/NR 3.9 states that the County will "consider [biological resources] in the design of a project that is located within an SEA." The proposed initiative is not expected to conflict with this policy because this policy is wholly directed to developments, exclusive of single-family residences. Further, the proposed initiative is not expected to conflict with Policy C/NR 3.10 because the proposed initiative does not affect the County's ability to "require environmentally superior mitigation for unavoidable impacts on biologically sensitive areas, and permanently preserve mitigation sites."

The proposed initiative is expected to conflict with Goal C/NR 4.1 of the Plan Update that promotes "conserved and sustainably managed woodlands" The proposed initiative may result in impacts to oak woodlands as a result of allowing single-family residential development in areas that are currently limited by water availability. Therefore, the proposed initiative is expected to conflict with Policy C/NR 4.1 because of potential effects on the County's ability to "preserve and restore

oak woodlands and other native woodlands that are conserved in perpetuity with a goal of no net loss of existing woodlands." The County building permit process notifies property owners of the need to comply with the County's Oak Tree Ordinance. The County requires applicants for Oak Tree Permits to demonstrate that oak trees will be avoided during construction and/or the loss of the oak tree will be compensated as a result of the issuance of the Permit; therefore, the removal of oak trees, as a result of the construction of single-family homes and infrastructure, developed as a result of the proposed initiative would be expected to be reduced to below the level of significance, as required by the County's Oak Tree permitting process.

Santa Clarita Valley Area Plan

Of the 42,867 parcels in the proposed initiative study area, 2,243 are located within the Castaic/Santa Clarita/Agua Dulce subarea. Only parcels located within this subarea fall within the 2012 Santa Clarita Valley Area Plan.

The proposed initiative is expected to conflict with Policies CO-3.2.1 and CO-3.3.1 because the proposed initiative could indirectly result in impacts to wetlands, riparian habitat, and wildlife corridors along the Santa Clara River and tributaries, including the Cruzan Mesa; these wetlands are expected to be jurisdictional to the USACOE and CDFW. Any alteration of waters of the State would require a Streambed Alteration Agreement for which CDFW would ensure that no net loss of habitat functions or values occurs. Similarly, any discharge of dredge or fill material into federal Waters of the United States would be subject to a permit under Section 404 of the Clean Water Act. As such, adherence to state and federal regulations related to watersheds, streams, and riparian vegetation would reduce conflicts with this policy.

The proposed initiative also is expected to conflict with Policy CO-3.2.2 and CO-3.5.3 because parcels in the Castaic/Santa Clarita/Agua Dulce subarea are located within Coast Live Oak Woodlands and other plant communities likely to have protected oak species. The Los Angeles County Oak Tree Ordinance requires the replacement of mature and heritage oak trees should they be impacted or removed. As such, adherence to this ordinance would reduce conflicts with this policy. In addition, the proposed initiative is expected to conflict with Policy CO-3.2.3 because it affects the County's ability to "ensure protection of any endangered or threatened species or habitat, in conformance with State and federal laws" within the Castaic/Santa Clarita/Agua Dulce subarea. Development as a result of the proposed initiative could affect wildlife movement corridors, including between Castaic and the San Gabriel Mountains, which is in conflict with Policy CO-3.3.3.

The proposed initiative is expected to conflict with Policy CO-3.2.4 because single family residences are exempt from the conditions of the SEA CUP and the SEA Technical Advisory Committee (SEATAC) process. This will conflict with the County's ability to "protect biological resources in the designated Significant Ecological Areas (SEAs) through the siting and design of development which is highly compatible with the SEA resources." The proposed initiative would result in an incremental degradation of habitat and habitat conversion which would conflict with this policy. The proposed initiative is not expected to conflict with Policy CO-3.6.5 which states that the County will "ensure revegetation of graded areas and slopes adjacent to natural open space areas with native plants (consistent with fire prevention requirements)" because the plan will not impact the County's ability to enforce this policy.

2015 Antelope Valley Areawide Plan – Town & Country

The Acton, Antelope Valley Northeast, East San Gabriel Mountains, Lake Hughes/Gorman/West of Lancaster, Lake Los Angeles/Llano/Valyermo/Littlerock, and Lancaster Northeast subareas are within the adopted Antelope Valley Areawide Plan – Town and Country (Antelope Valley Areawide Plan).

The proposed initiative would conflict with Policy COS 4.1 of the Antelope Valley Areawide Plan because the policy states that the County will "direct the majority of the unincorporated Antelope Valley's future growth to rural town centers and economic opportunity areas, minimizing the potential for habitat loss and negative impacts in Significant Ecological Areas". The proposed initiative would allow for the development of areas outside of rural town centers and within SSEAs, thus directly conflicting with this policy. Similarly, the proposed initiative would conflict with Policy COS 4.2 because the policy states that the County shall "limit the amount of potential development in Significant Ecological Areas, including the Joshua Tree Woodlands, wildlife corridors, and other sensitive habitat areas, through appropriate land use designations with very low residential densities". Residential densities would increase in these sensitive areas as result of the proposed initiative, thus the proposed initiative conflicts with this policy. Policy COS 4.3 states that the County shall "require new development in SEAs to comply with applicable Zoning Code requirements, ensuring that development occurs on the most environmentally suitable portions of the land". The proposed initiative will not impact the way that the County shall evaluate building permits in SEAs and therefore will not conflict with the County's ability to enforce this policy. Similarly, Policy COS 4.4 states that the County shall require new development in Significant Ecological Areas to consider [biological resources] in the design of the project to the greatest extent feasible." The proposed initiative is not expected to conflict with this policy because this policy is wholly directed to developments, exclusive of single-family residences.

Policies COS 4.5 and COS 4.7 state that the County shall "require new development to provide adequate buffers from preserves, sanctuaries, habitat areas…" and "restrict fencing in wildlife corridors". The proposed initiative would not prevent the county from enforcing these requirements for new development, therefore the proposed initiative is not expected to conflict with these policies. Policy 4.6 states that the County shall "encourage connections between natural open space areas to allow for wildlife movement". The proposed initiative would conflict with this policy because residential densities would increase in wildlife movement areas as result of the proposed initiative which would reduce connections between natural open space areas.

County Municipal Los Angeles County Code Section 22.56.215 – Hillside Management and Significant Ecological Areas – Additional Regulations

Under the adopted Hillside Management and Significant Ecological Area Ordinances 22.56.215, single-family residences where not more than one such residence is proposed to be built by the same person on contiguous lots or parcels are exempt from the conditional use permit. Therefore, there would be no impacts related to conflicts with existing ordinance 22.56.215 resulting from the proposed initiative.

Municipal County Code Sections 22.56.2050 – 22.56.2260 – Oak Trees

There is the potential for protected oak trees to be present on or within the vicinity of parcels in all subareas affected by the proposed initiative. However, any development on parcels within unincorporated Los Angeles County is required to demonstrate compliance with this ordinance as a

part of the site plan review process. This requirement would not change as a result of the proposed initiative. Therefore, the proposed initiative is not expected to conflict with the Los Angeles County Oak Tree Ordinance.

Acton Community Standards District

Parcels containing native vegetation under the jurisdiction of the Acton CSD are present within the proposed initiative study area, and may be impacted as a result of development influenced by the proposed initiative. However, any development of parcels within the Acton CSD would be required to comply with the provisions of the CSD. Therefore, it is not expected that the proposed initiative would conflict with the provisions of the Acton CSD.

Juniper Hills Community Standards District

Parcels containing vegetation that would be removed during the construction of a single-family residence under the jurisdiction of the Juniper Hills CSD are present within the proposed initiative study area. However, any development of parcels within the Juniper Hills CSD would be required to comply with the provisions of the CSD. Therefore, it is not expected that the proposed initiative would conflict with the provisions of the Juniper Hills CSD.

Elizabeth Lake and Lake Hughes Community Standards District

Parcels containing vegetation that would be removed during the construction of a single-family residence under the jurisdiction of the Elizabeth Lake and Lake Hughes CSD are present within the proposed initiative study area. However, any development of parcels within the Elizabeth Lake and Lake Hughes CSD would be required to comply with the provisions of the CSD. Therefore, it is not expected that the proposed initiative would conflict with the provisions of the Elizabeth Lake and Lake Hughes CSD.

Castaic Area Community Standards District

Parcels containing locally indigenous vegetation, oak trees, and in the vicinity of creeks that would be impacted during the construction of a single-family residence under the jurisdiction of the Castaic Area CSD are present within the proposed initiative study area. However, any development of parcels within the Castaic Area CSD would be required to comply with the provisions of the CSD. Therefore, it is not expected that the proposed initiative would conflict with the provisions of the Castaic Area CSD.

5.2.6 HCPs and NCCPs

The proposed initiative would not result in significant impacts to biological resources in relation to a conflict with an applicable HCP or NCCP. Approximately 50 percent of the Acton subarea, 100 percent of the Antelope Valley North East sub area, and approximately 80 percent of the Lake Hughes/Gorman/West of Lancaster subarea are within the DRECP. The DRECP is a proposed multispecies HCP intended to conserve threatened and endangered species and natural communities in the Mojave and Colorado Desert regions of southern California. However, the DRECP only applies to the development of renewable energy projects.

Similarly, the same areas of the proposed initiative parcels are located within the West Mojave Plan HCP as the boundaries of both HCPs as they affect Los Angeles County are the same. However, the West Mojave Plan HCP does not apply to the proposed initiative because potential hauled water parcels are not located on federal lands and the initiative would not trigger a federal nexus.[15,16] Therefore, the proposed initiative would not result in impacts to biological resources in relation to a conflict with an applicable HCP or NCCP and no mitigation measures are required.

[15] California Department of Fish and Wildlife. Natural Community Conservation Planning (NCCP). Website accessed, November 24, 2014. Available online at http://www.dfg.ca.gov/habcon/nccp/.

[16] Renewable Energy Action Team. Desert Renewable Energy Consrvation Plan. Website accessed, November 24,2014. Available online at: http://www.drecp.org/

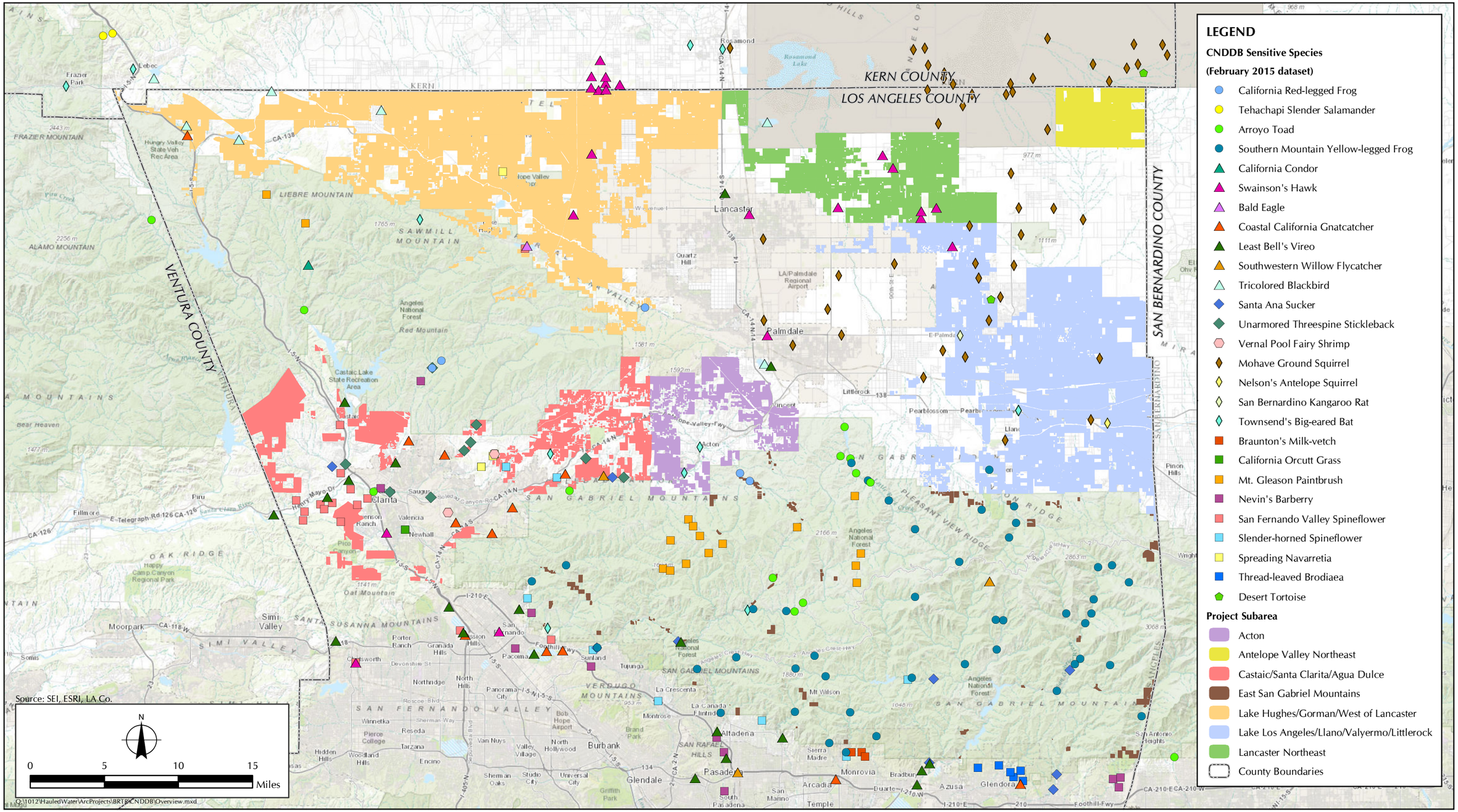


FIGURE 5.1.1-1

Federally and State-Listed Species With the Potential to Occur Within The Proposed Initiative Subareas

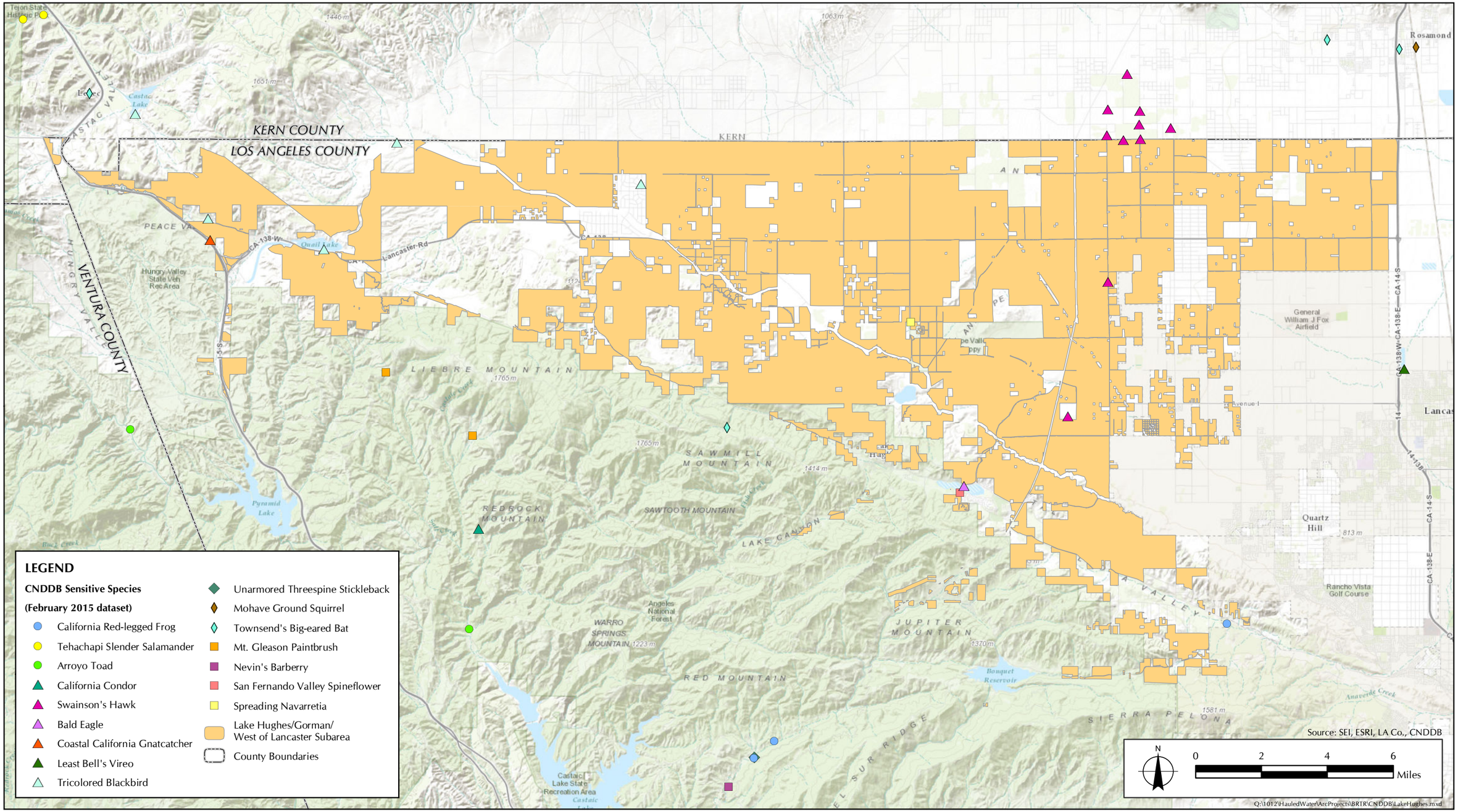


FIGURE 5.1.1-1A

Federally and State-Listed Species With the Potential to Occur Within The Proposed Initiative Subareas
Lake Hughes/Gorman/West of Lancaster Subarea

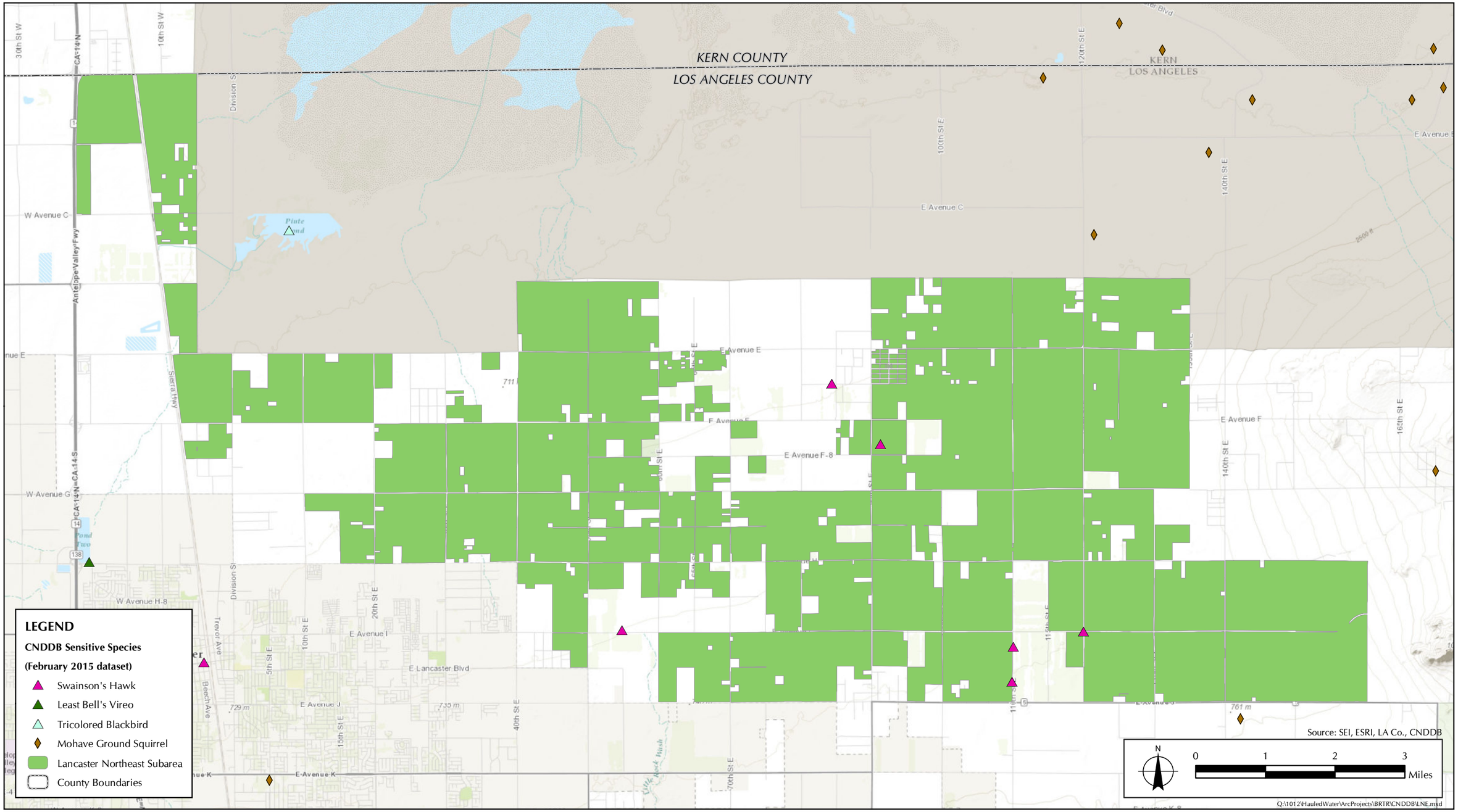


FIGURE 5.1.1-1B

Federally and State-Listed Species With the Potential to Occur Within The Proposed Initiative Subareas
Lancaster Northeast Subarea

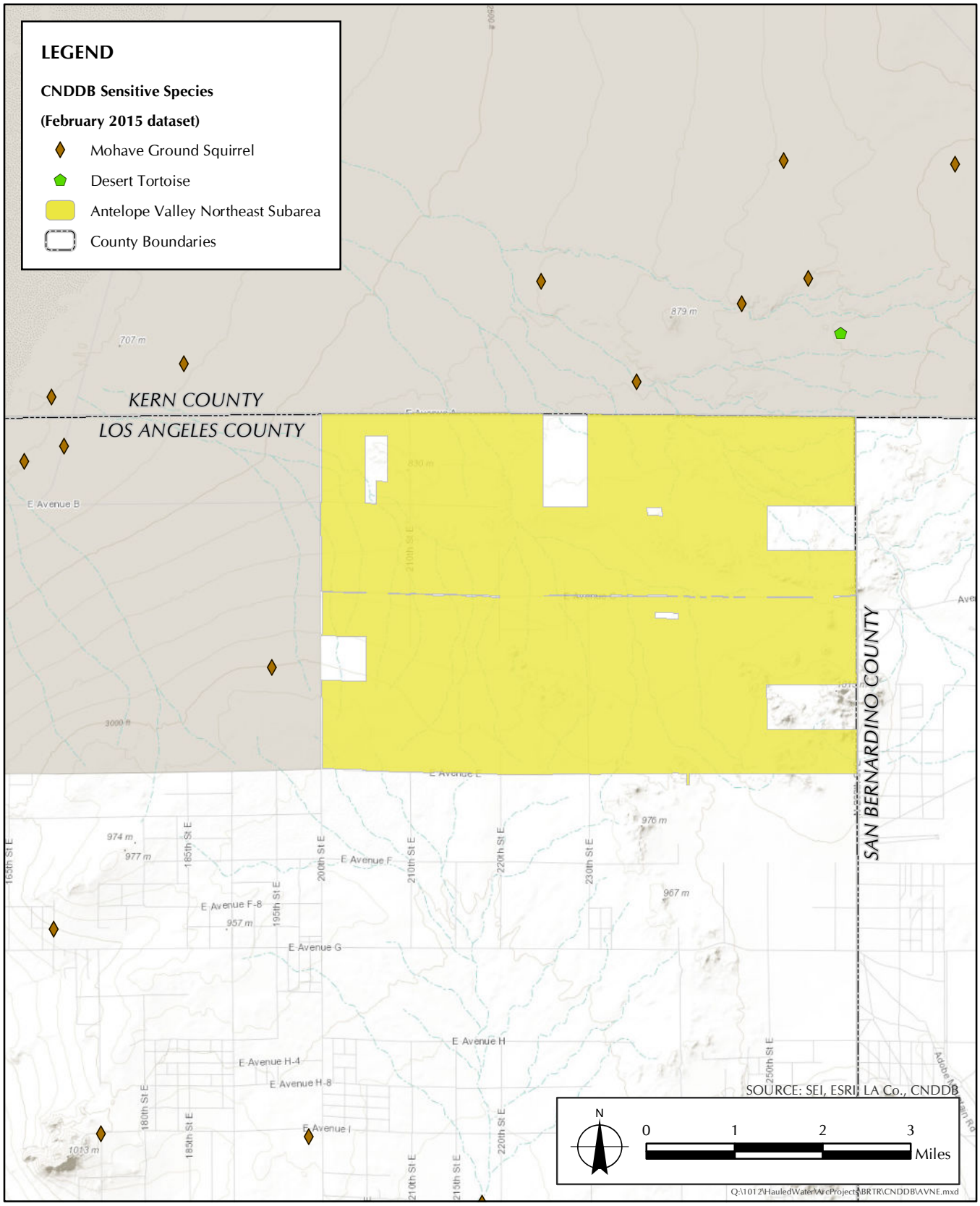


FIGURE 5.1.1-1C

Federally and State-Listed Species With the Potential to Occur Within The Proposed Initiative Subareas
Antelope Valley Northeast Subarea

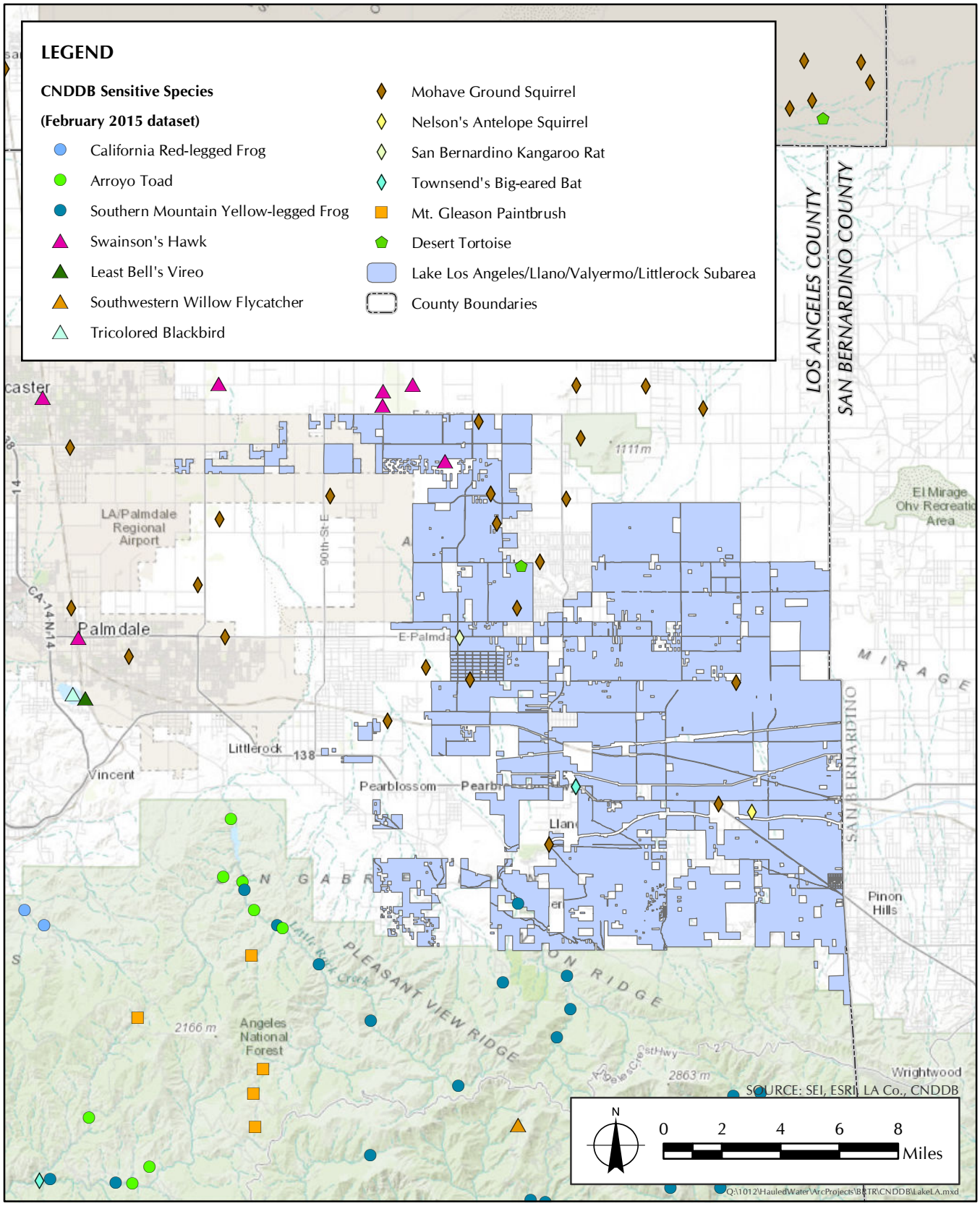


FIGURE 5.1.1-1D

Federally and State-Listed Species With the Potential to Occur Within The Proposed Initiative Subareas
Lake Los Angeles/Llano/Valyermo/Littlerock Subarea

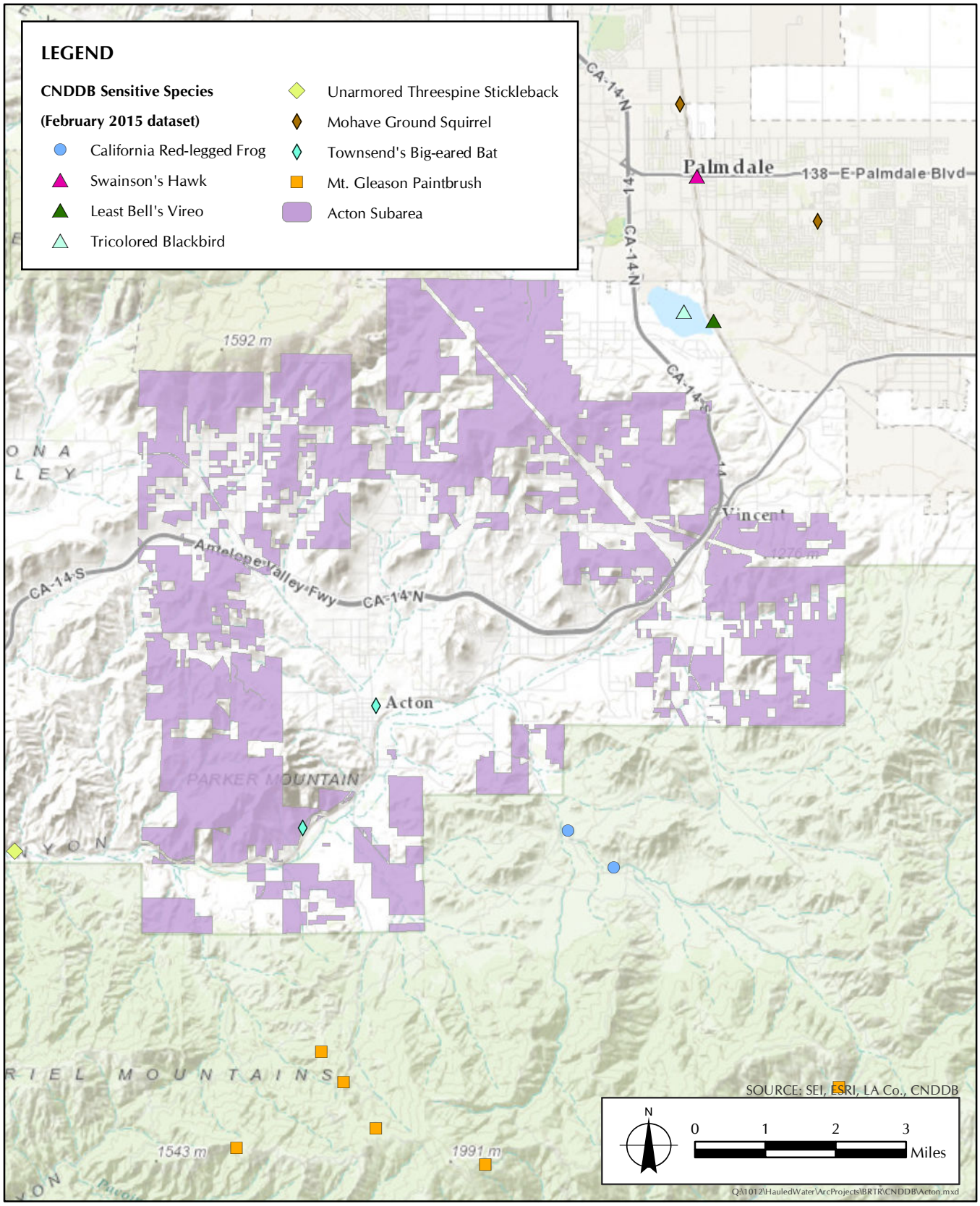


FIGURE 5.1.1-1E

Federally and State-Listed Species With the Potential to Occur Within The Proposed Initiative Subareas
Acton Subarea

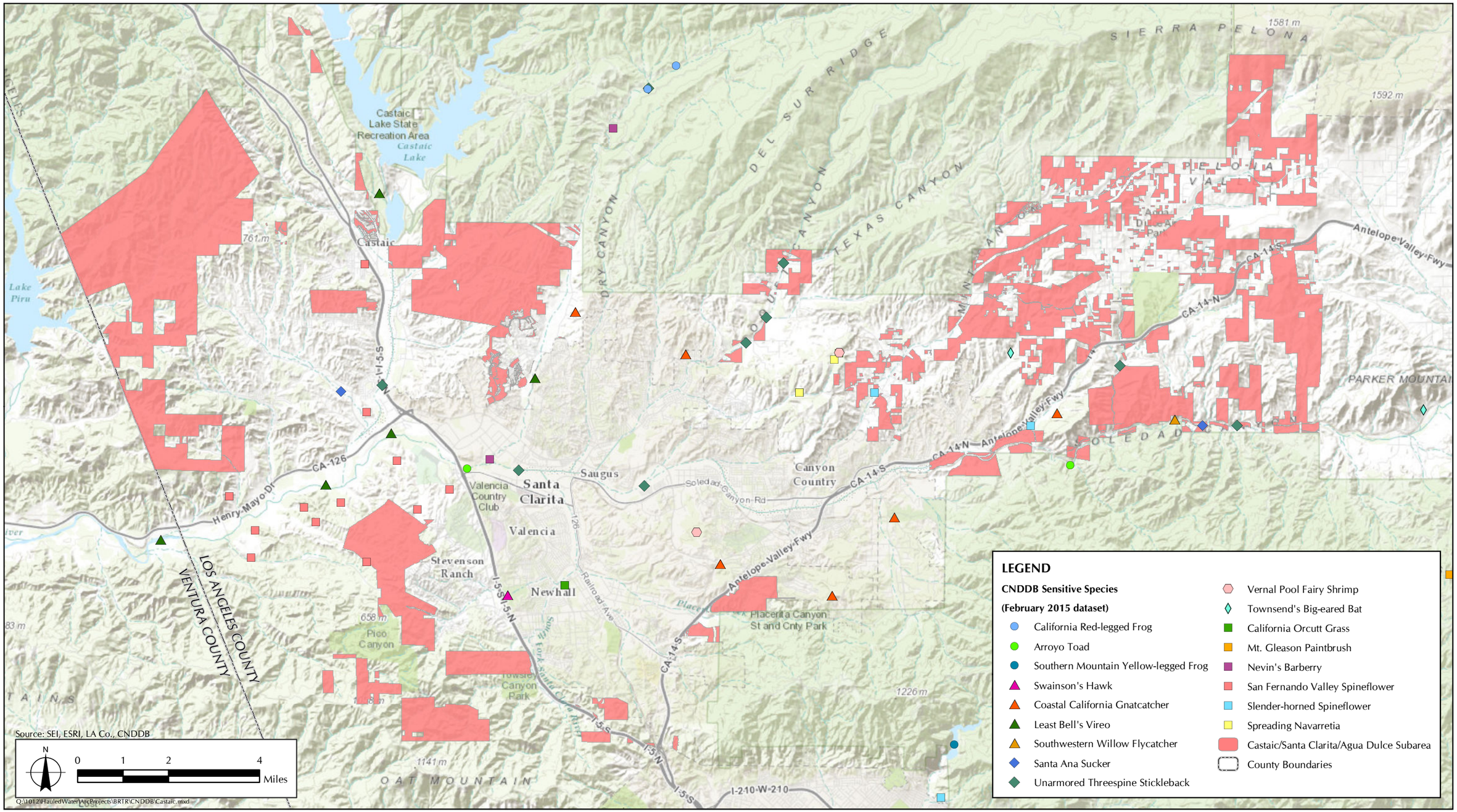


FIGURE 5.1.1-1F

Federally and State-Listed Species With the Potential to Occur Within The Proposed Initiative Subareas
Castaic/Santa Clarita/Agua Dulce Subarea

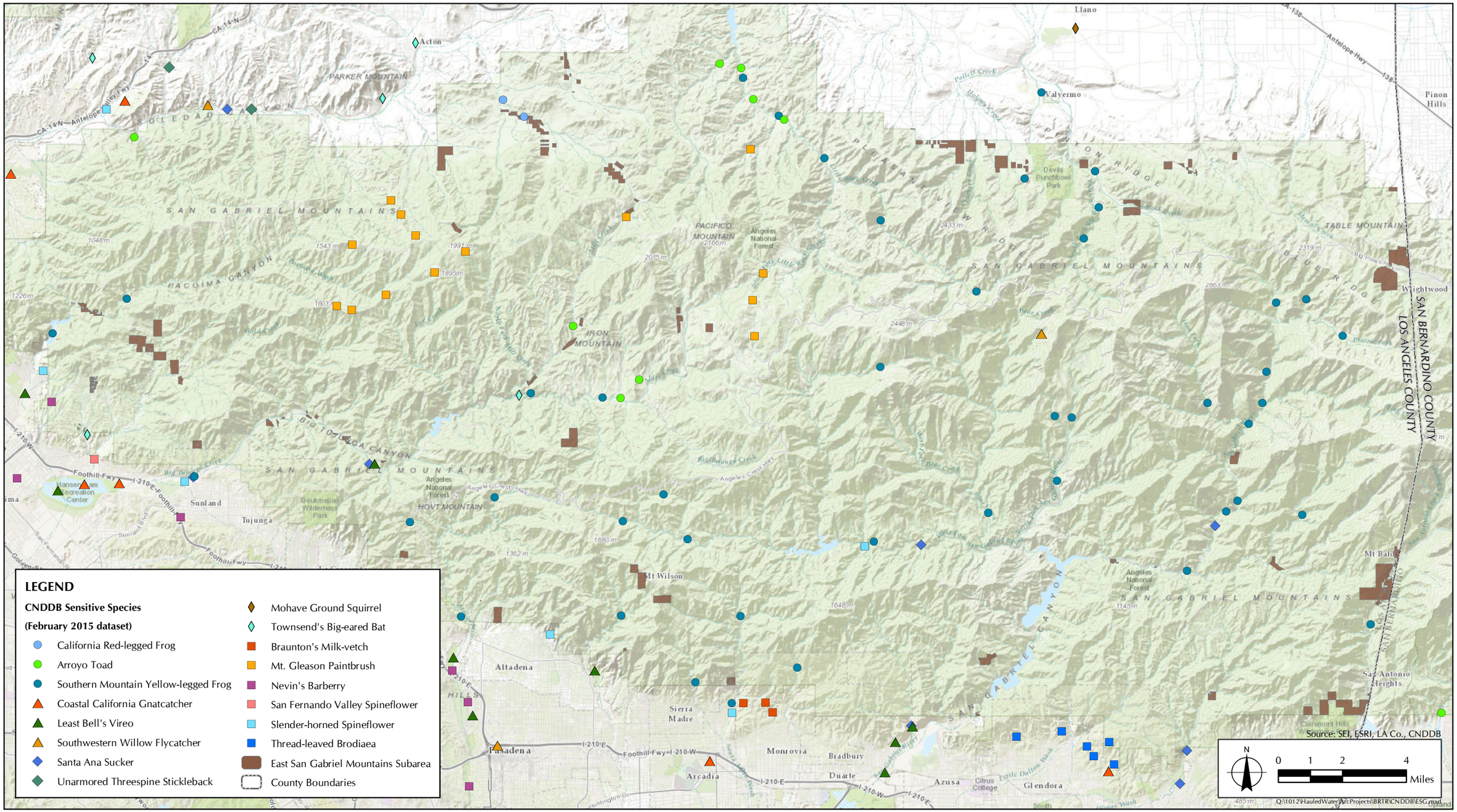


FIGURE 5.1.1-1G

Federally and State-Listed Species With the Potential to Occur Within The Proposed Initiative Subareas
East San Gabriel Mountains Subarea

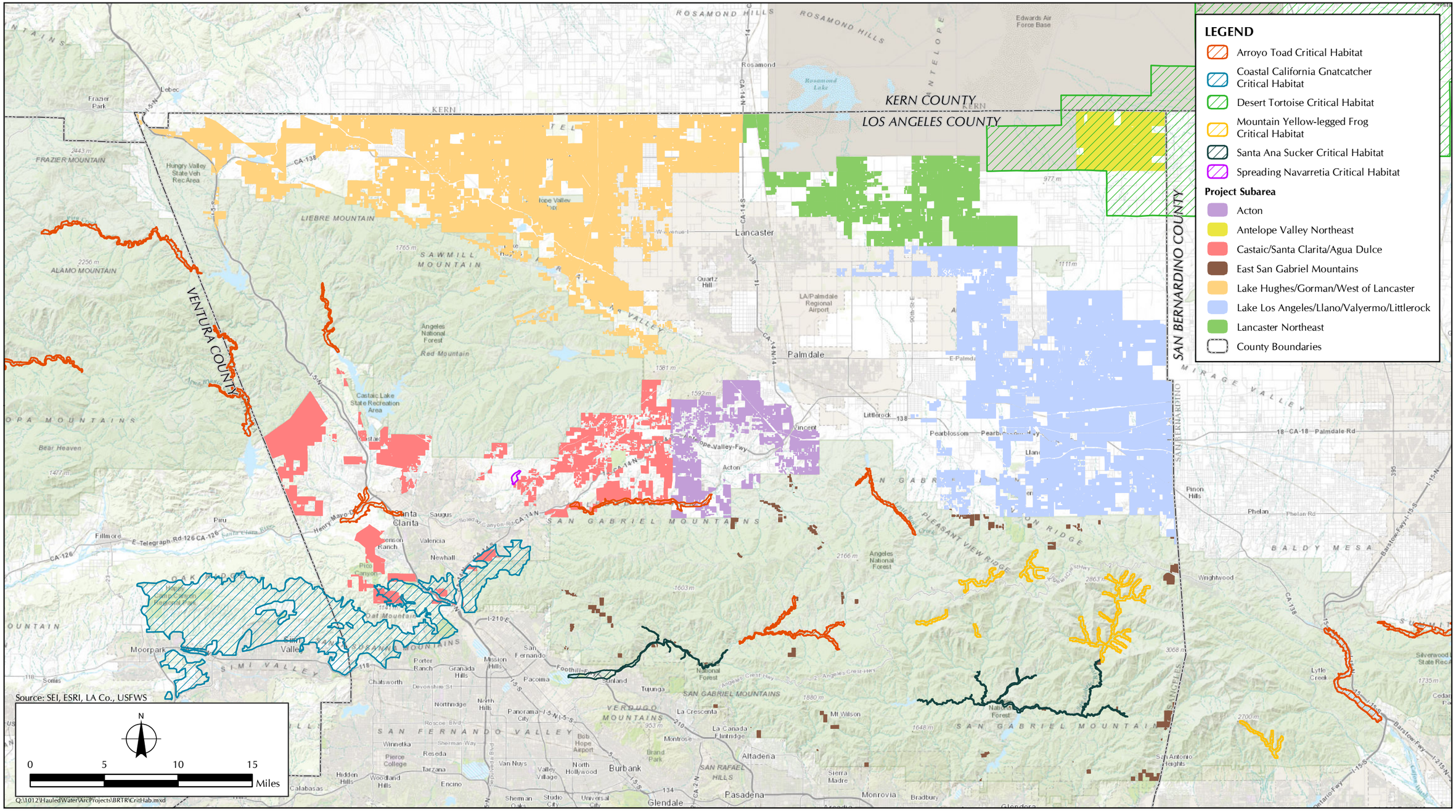


FIGURE 5.1.1-2

Critical Habitat Within The Proposed Initiative Subareas

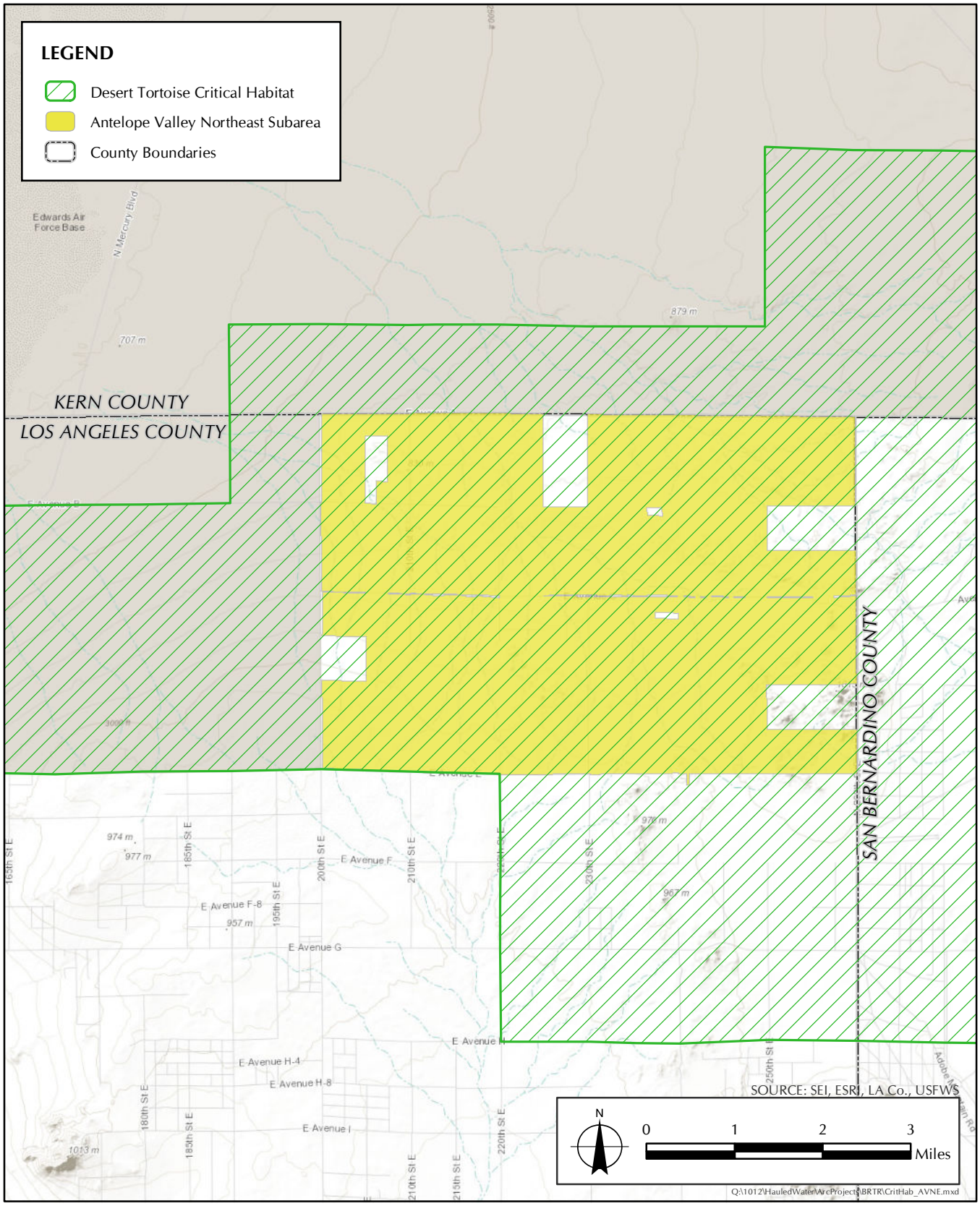


FIGURE 5.1.1-2A

Critical Habitat Within The Proposed Initiative Subareas
Antelope Valley Northeast Subarea

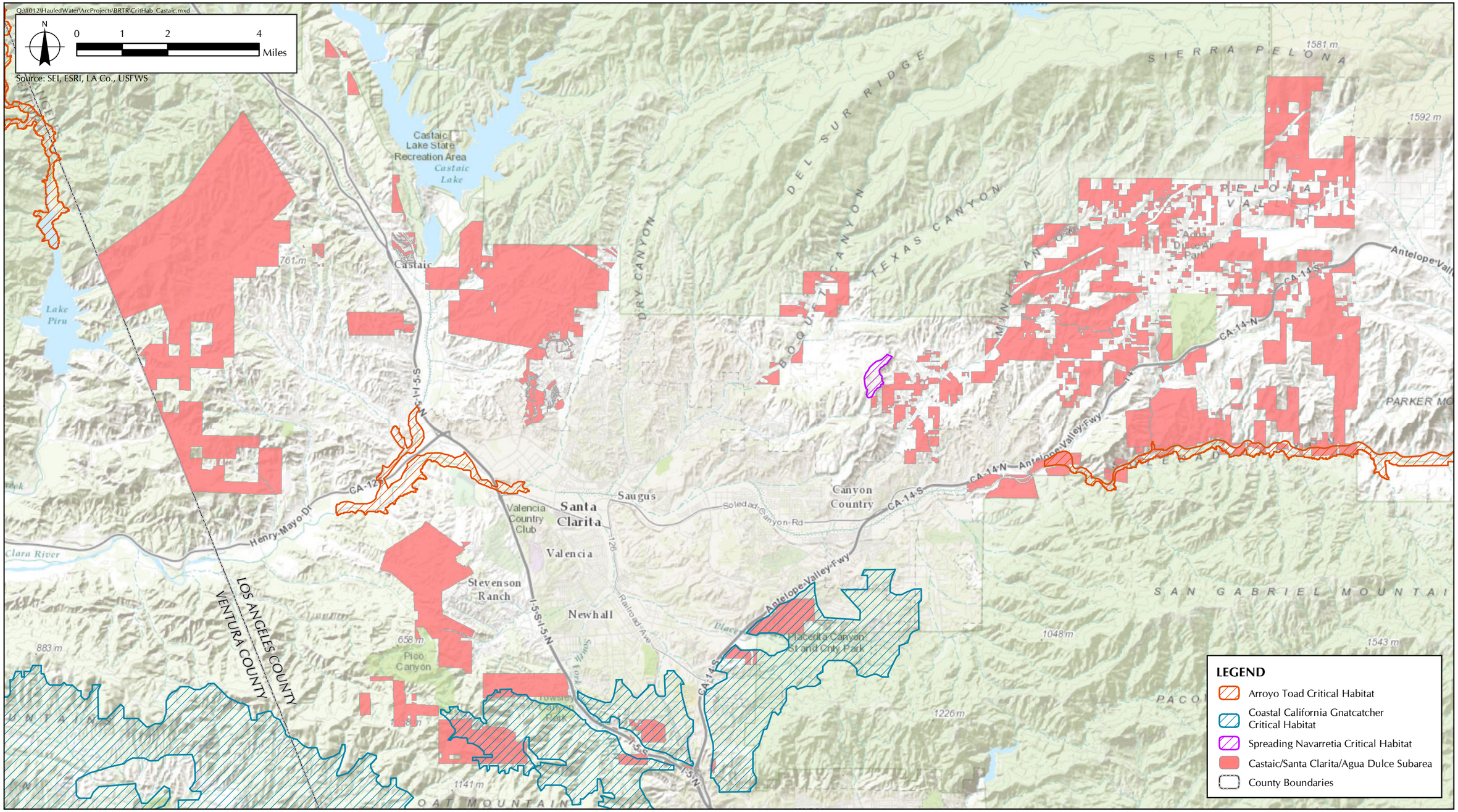


FIGURE 5.1.1-2B

Critical Habitat Within The Proposed Initiative Subareas
Castaic/Santa Clarita/Agua Dulce Subarea

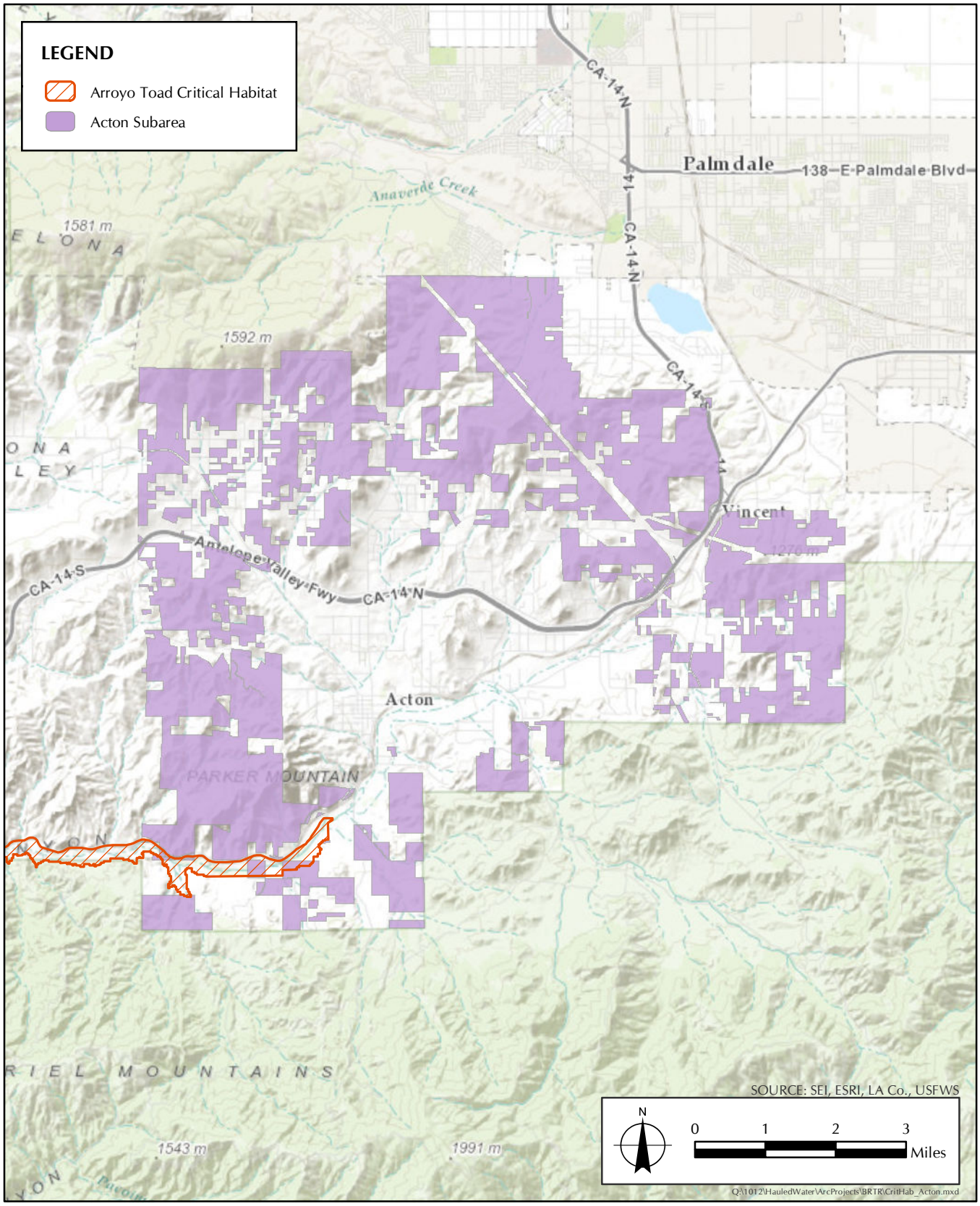


FIGURE 5.1.1-2C

Critical Habitat Within The Proposed Initiative Subareas
Acton Subarea

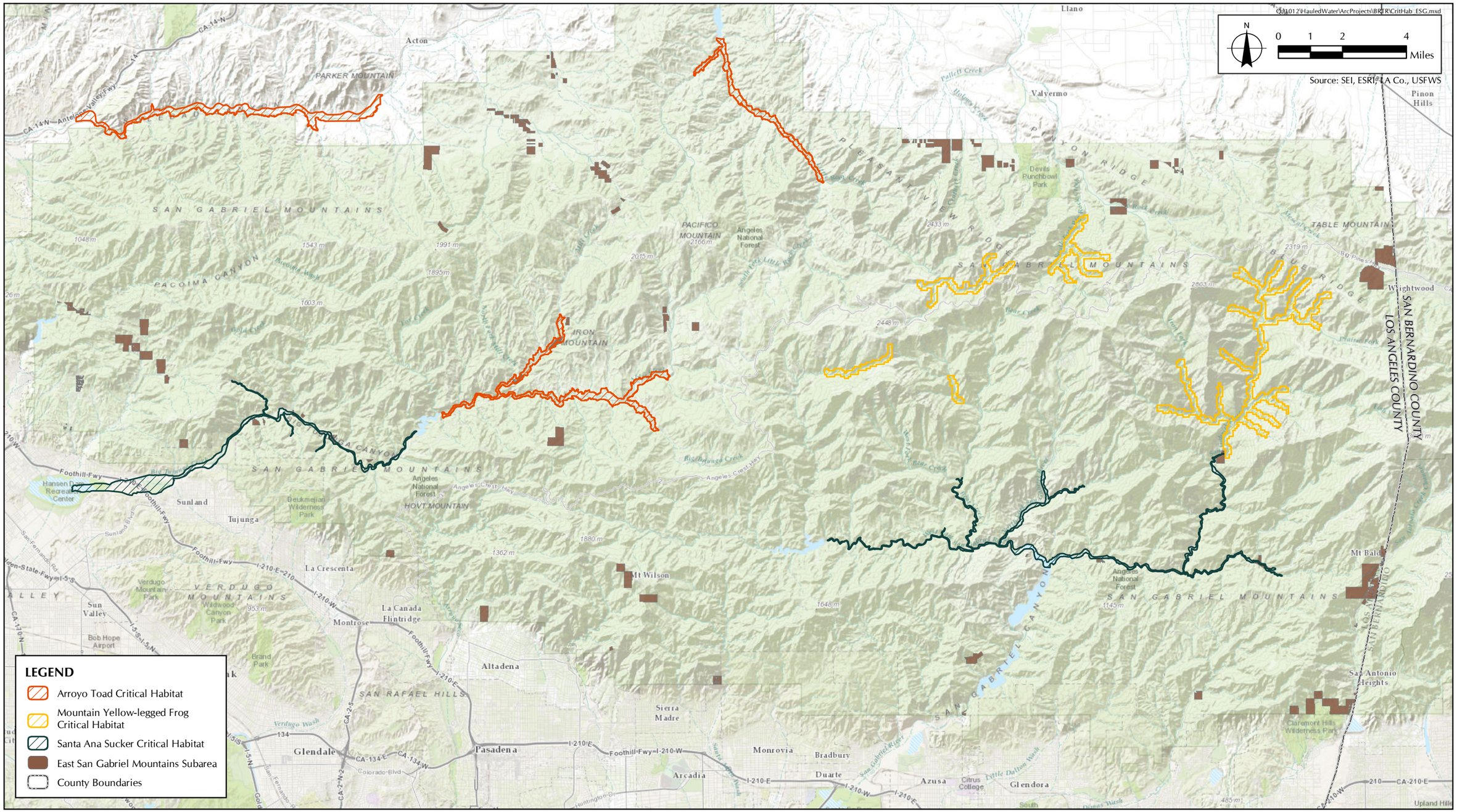


FIGURE 5.1.1-2D

Critical Habitat Within The Proposed Initiative Subareas
East San Gabriel Mountains Subarea

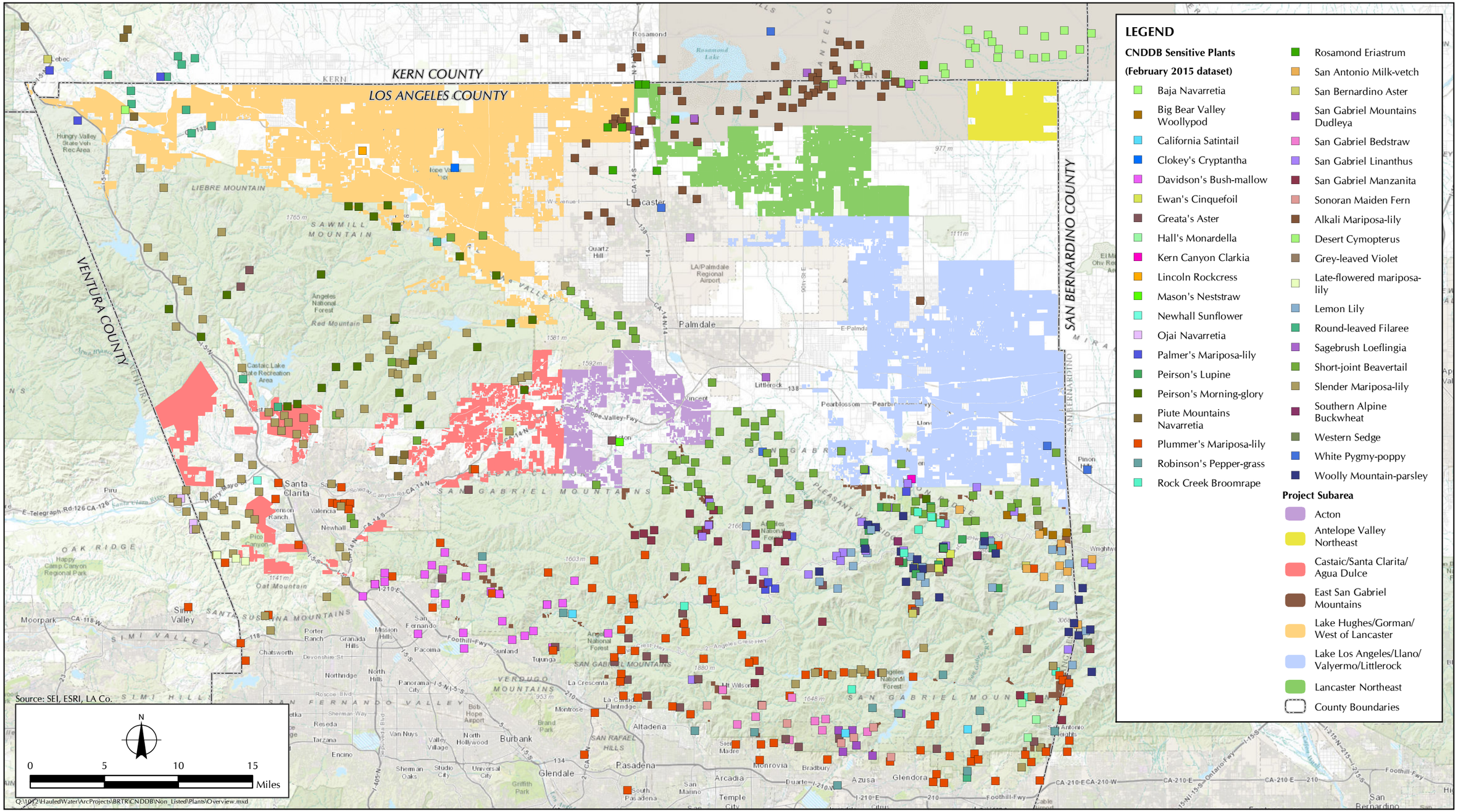


FIGURE 5.1.1-3

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas

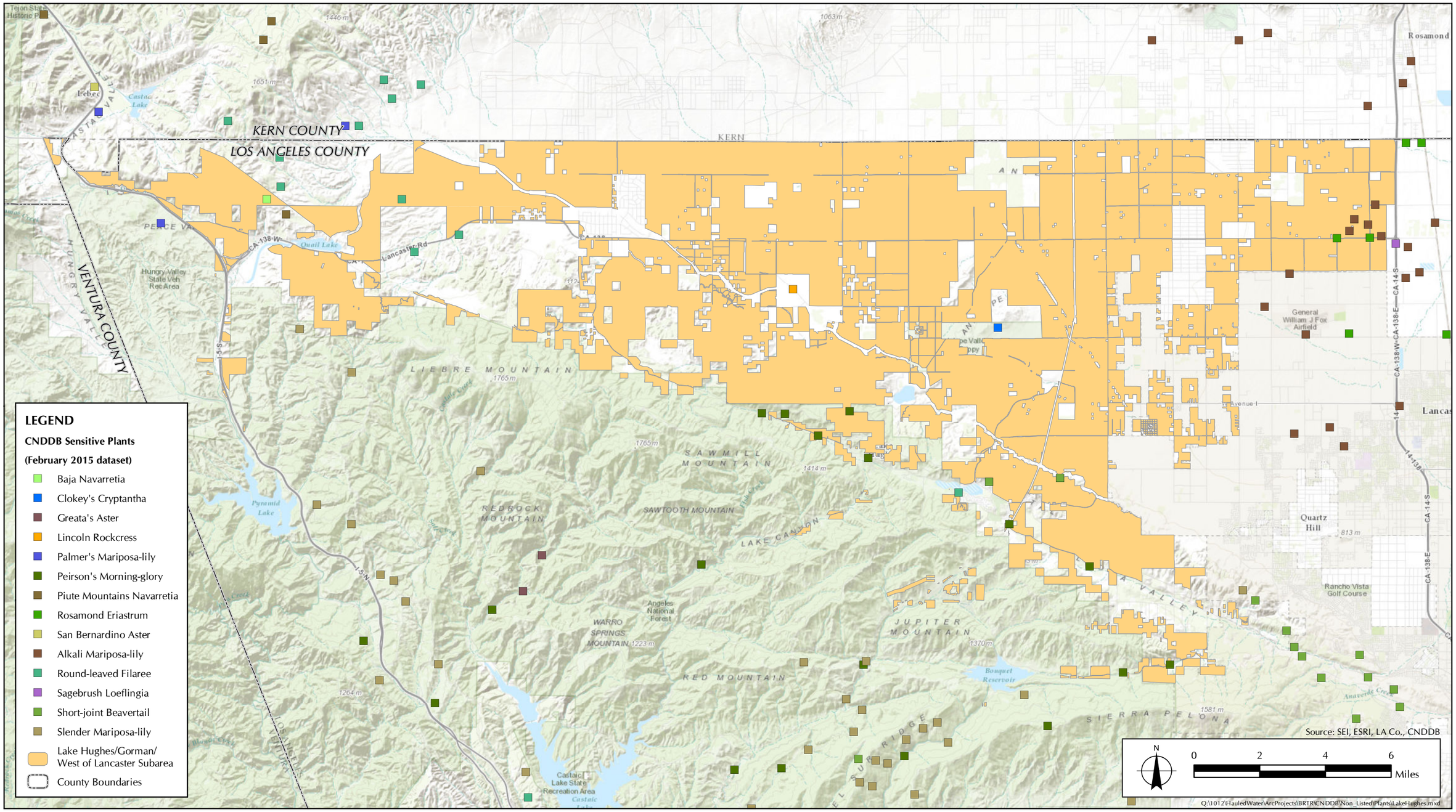


FIGURE 5.1.1-3A

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
Lake Hughes/Gorman/West of Lancaster Subarea

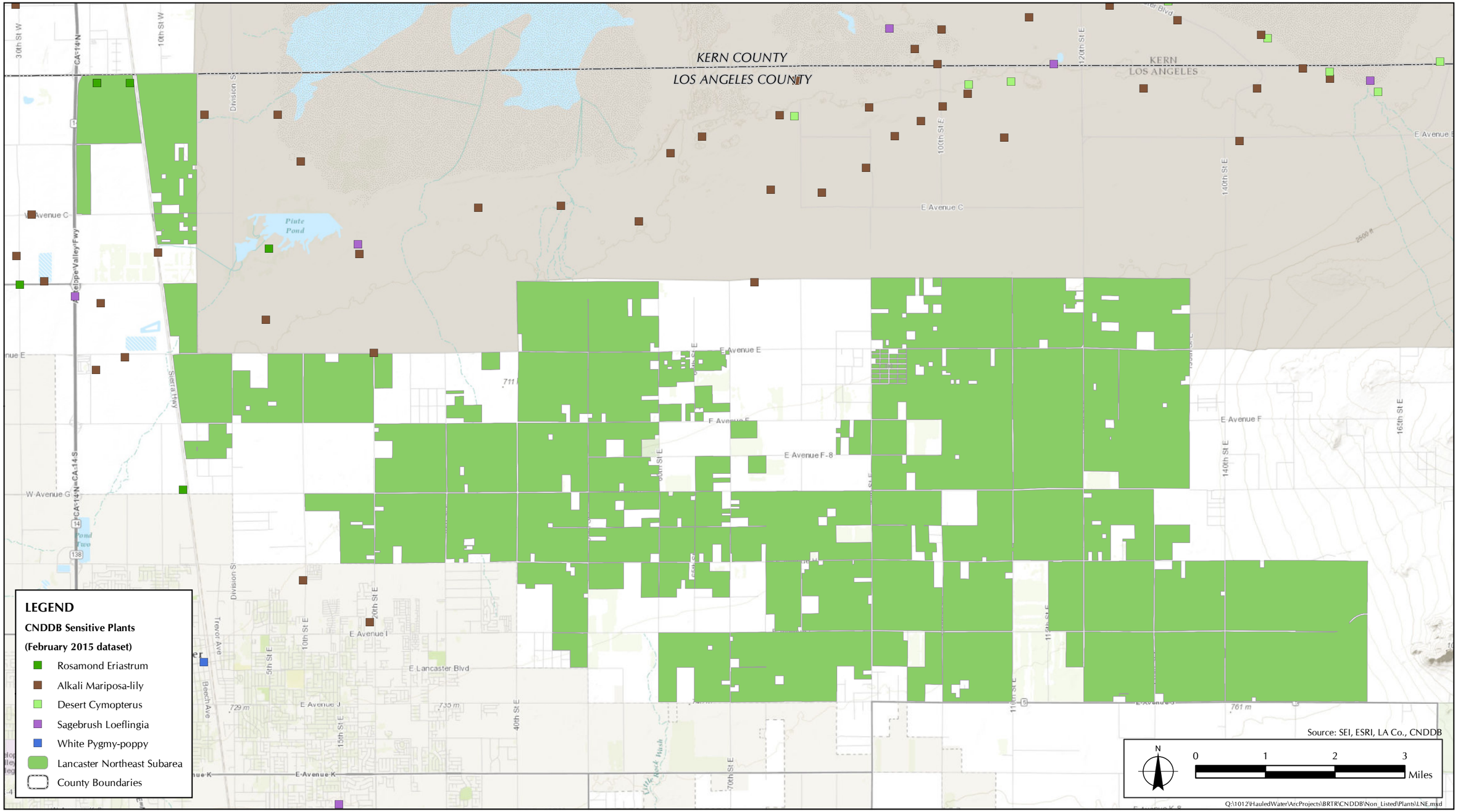


FIGURE 5.1.1-3B

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
Lancaster Northeast Subarea

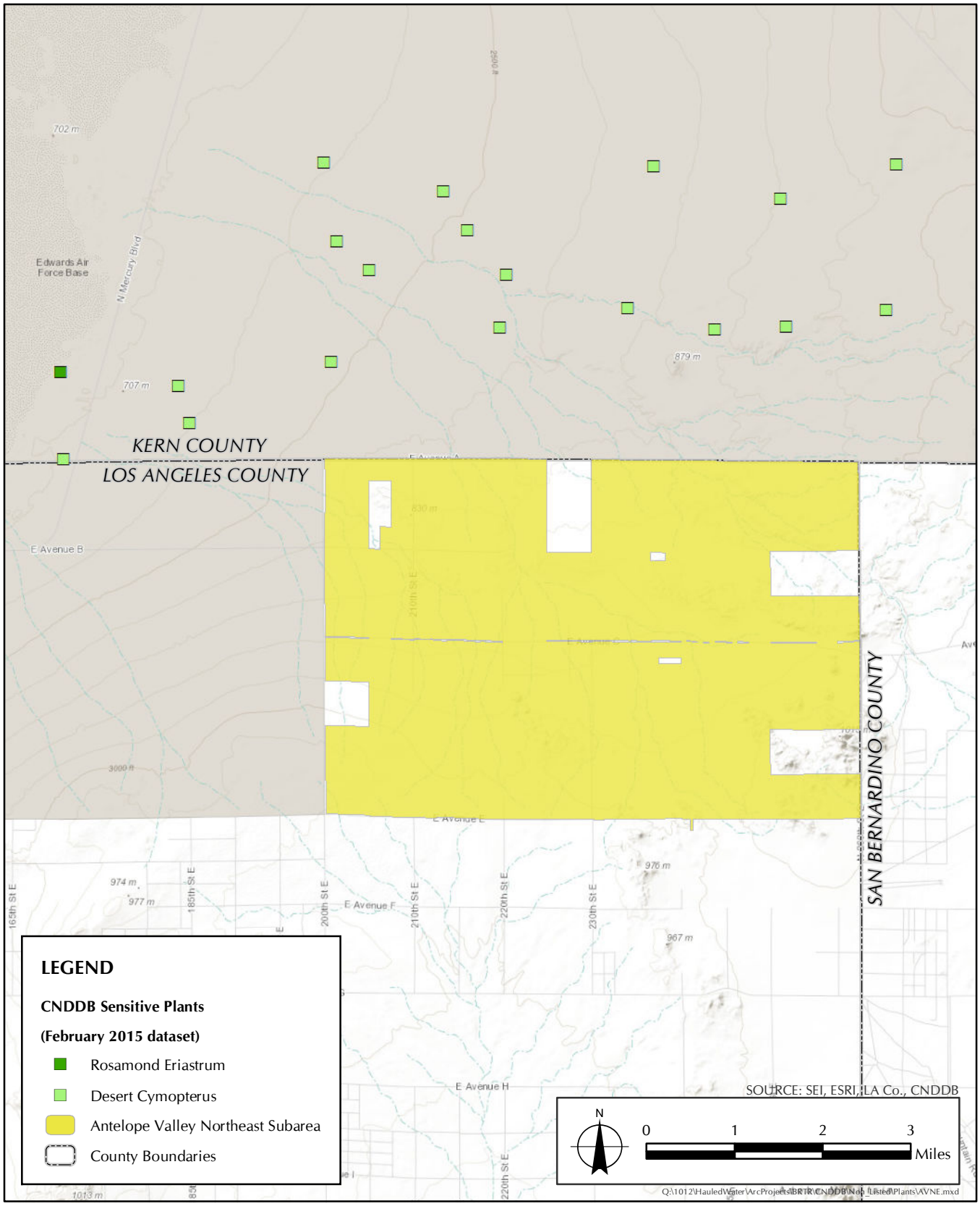


FIGURE 5.1.1-3C

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
Antelope Valley Northeast Subarea

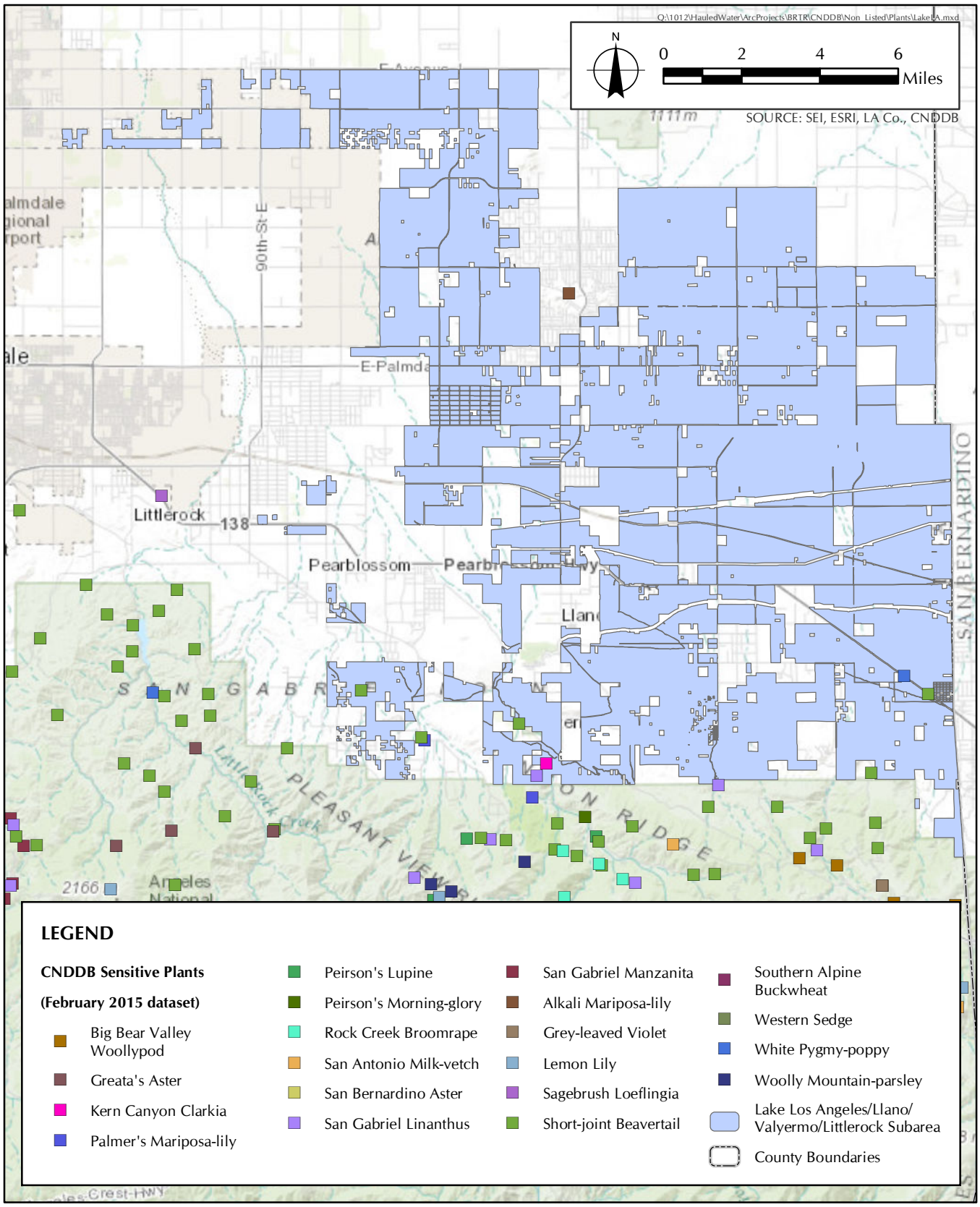


FIGURE 5.1.1-3D

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
Lake Los Angeles/Llano/Valyermo/Littlerock Subarea

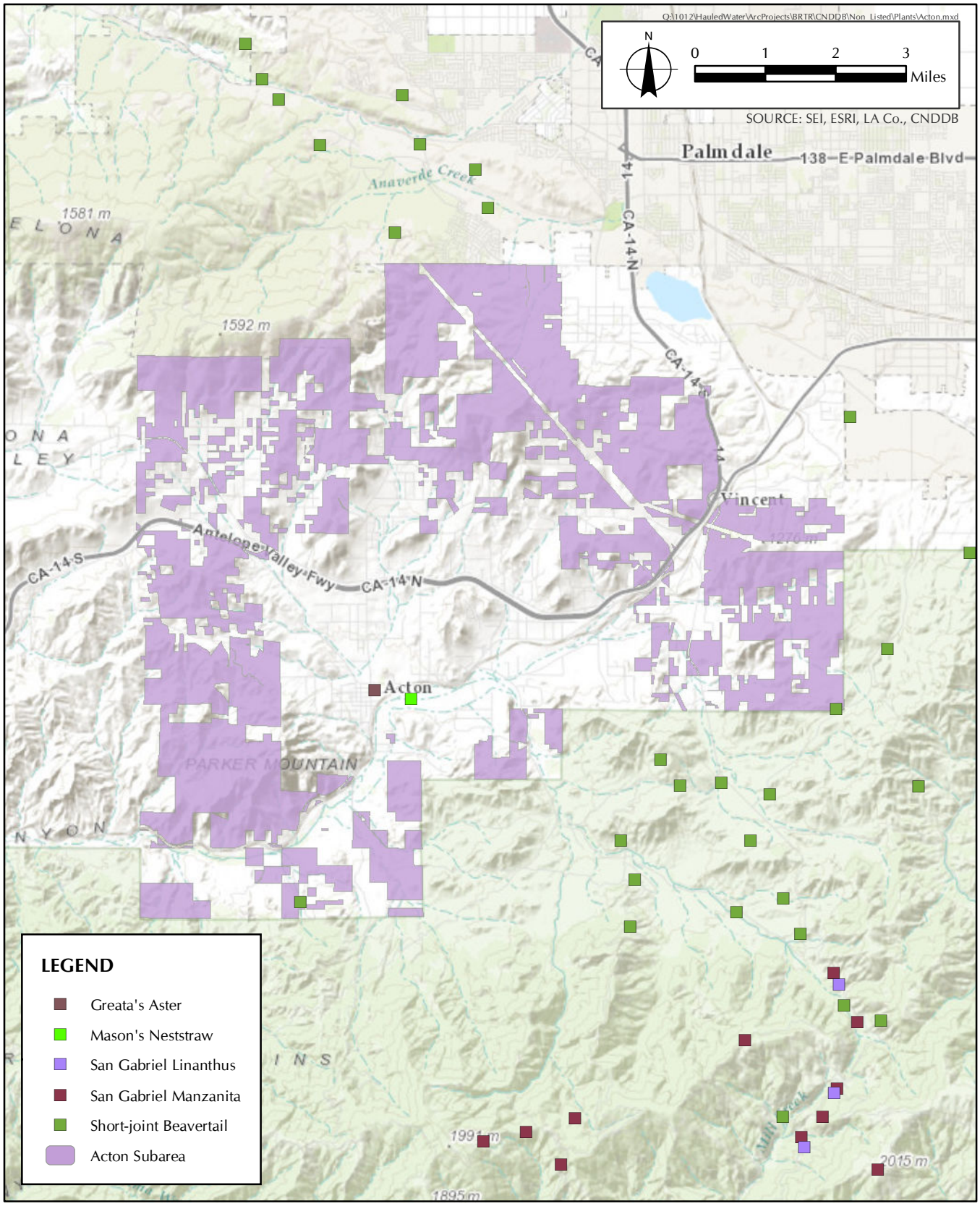


FIGURE 5.1.1-3E

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
Acton Subarea

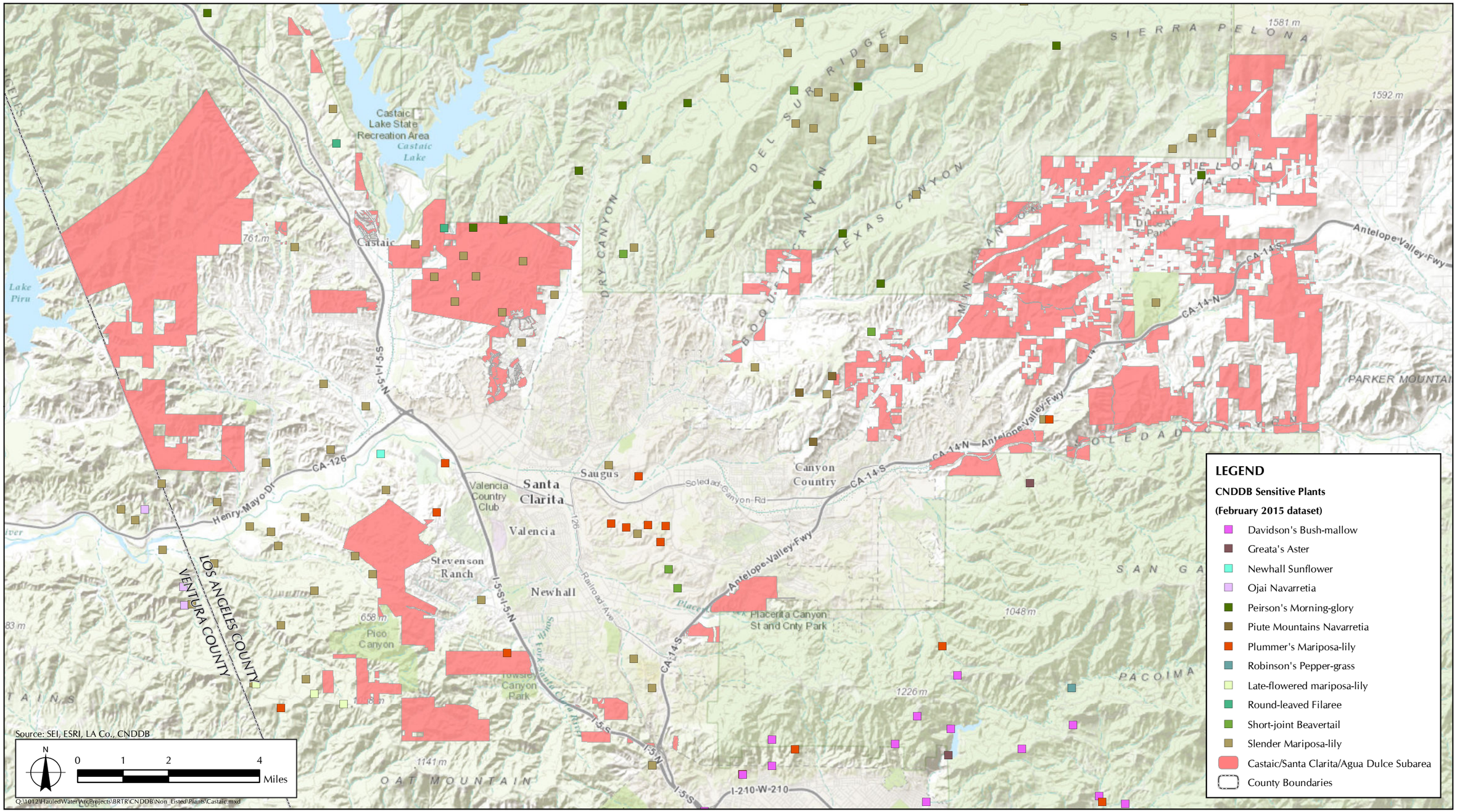


FIGURE 5.1.1-3F

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
Castaic/Santa Clarita/Agua Dulce Subarea

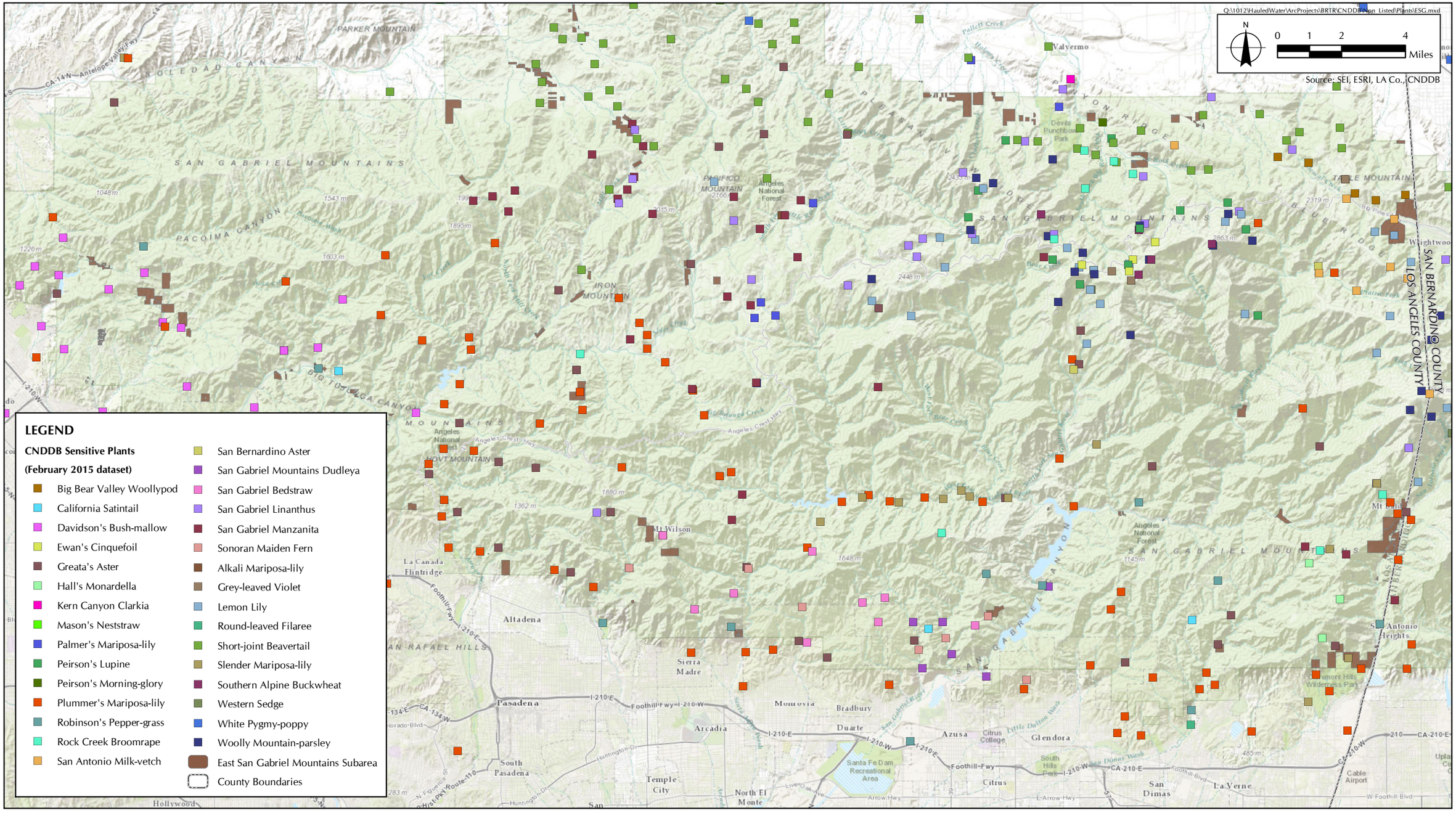


FIGURE 5.1.1-3G

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
East San Gabriel Mountains Subarea

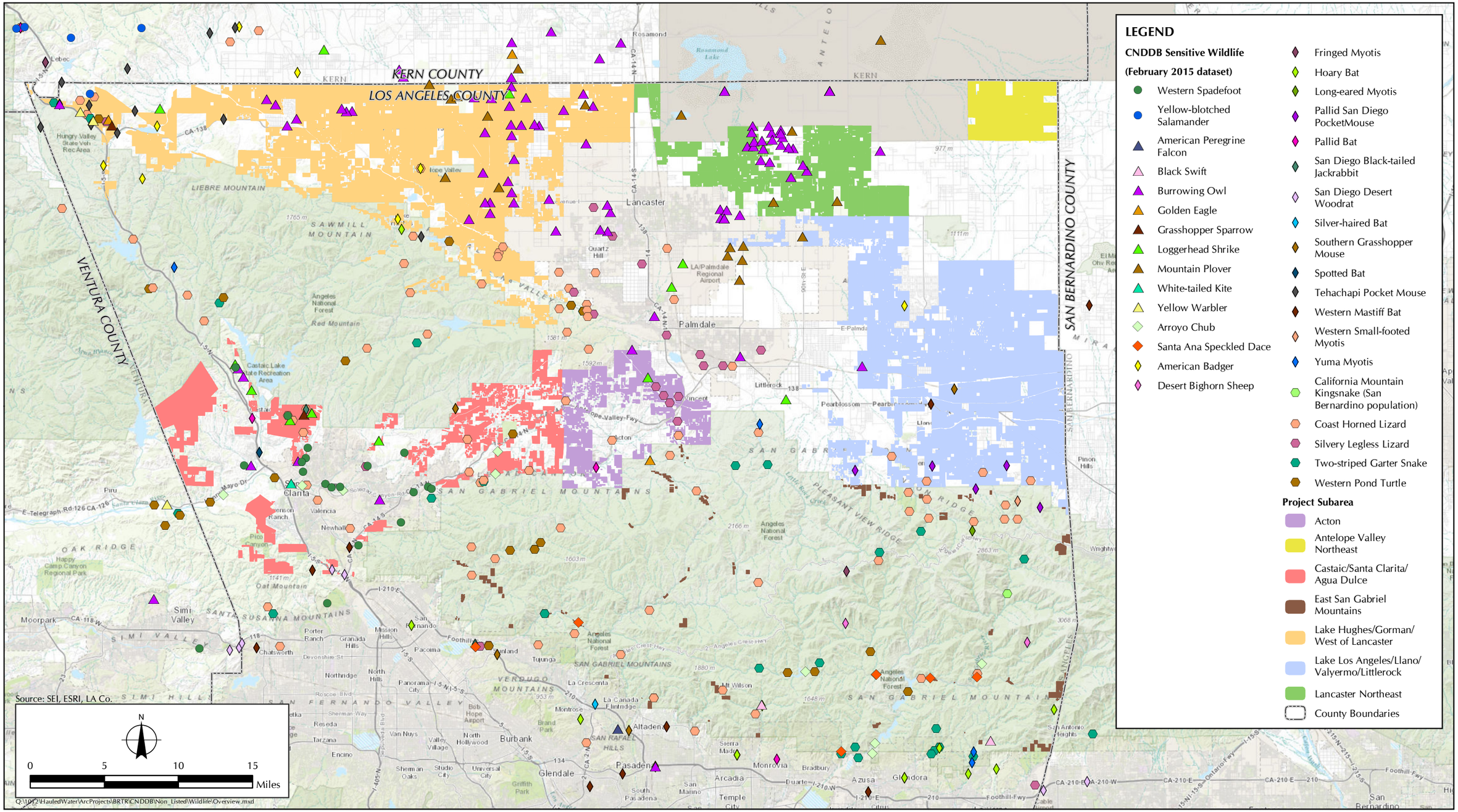


FIGURE 5.1.1-4

Other Sensitive Wildlife Species With the Potential to Occur Within The Proposed Initiative Subareas

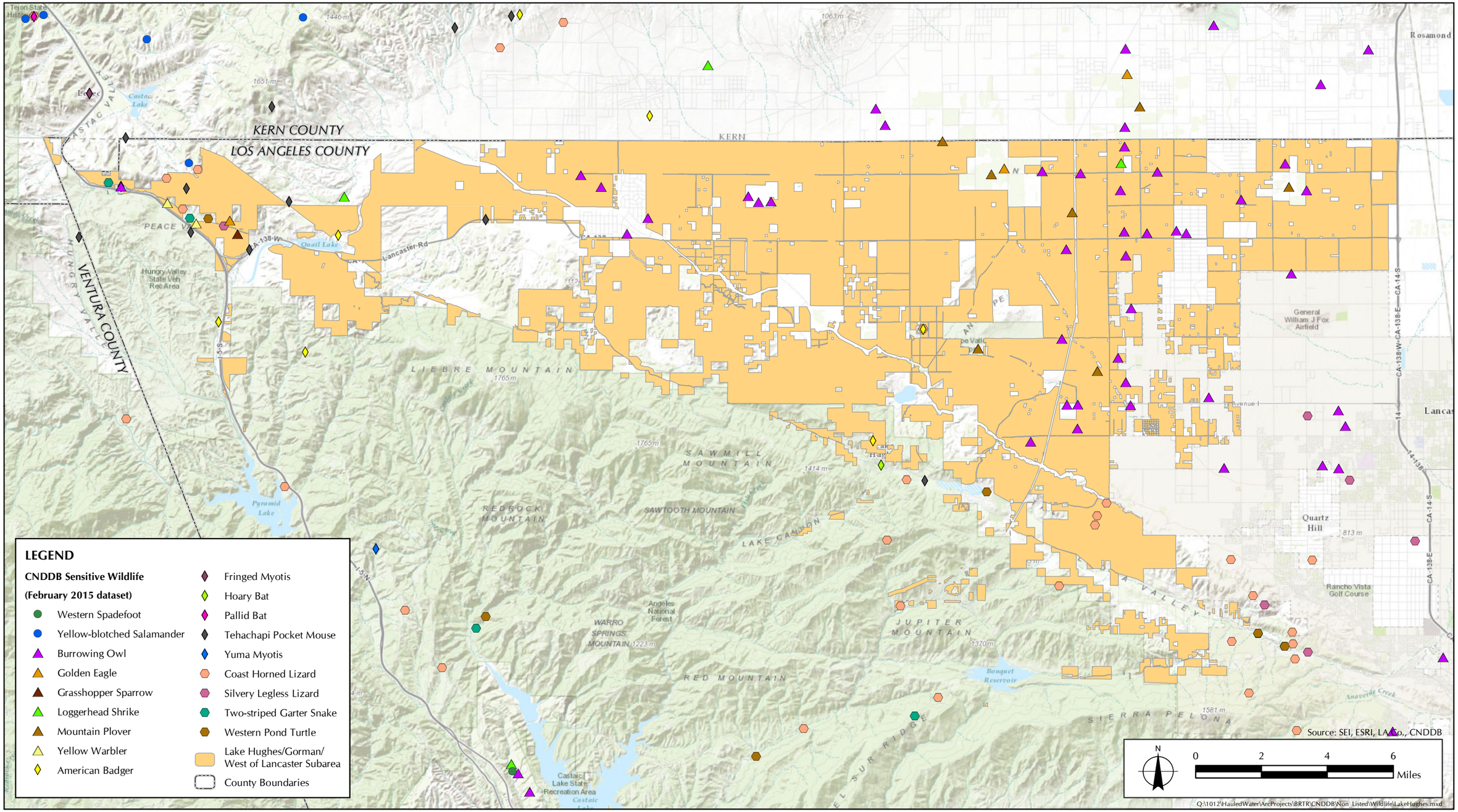


FIGURE 5.1.1-4A

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
Lake Hughes/Gorman/West of Lancaster Subarea

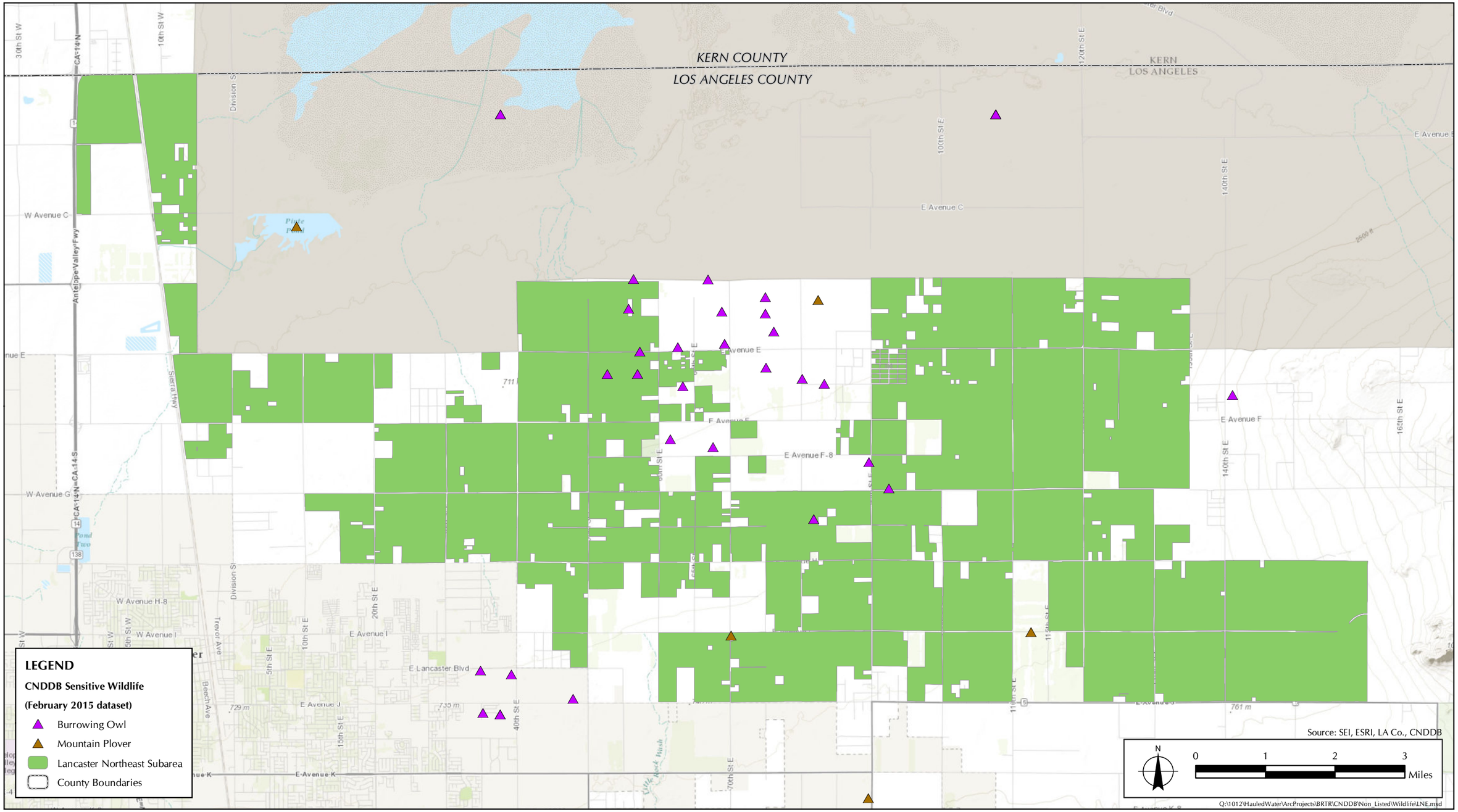


FIGURE 5.1.1-4B

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
Lancaster Northeast Subarea

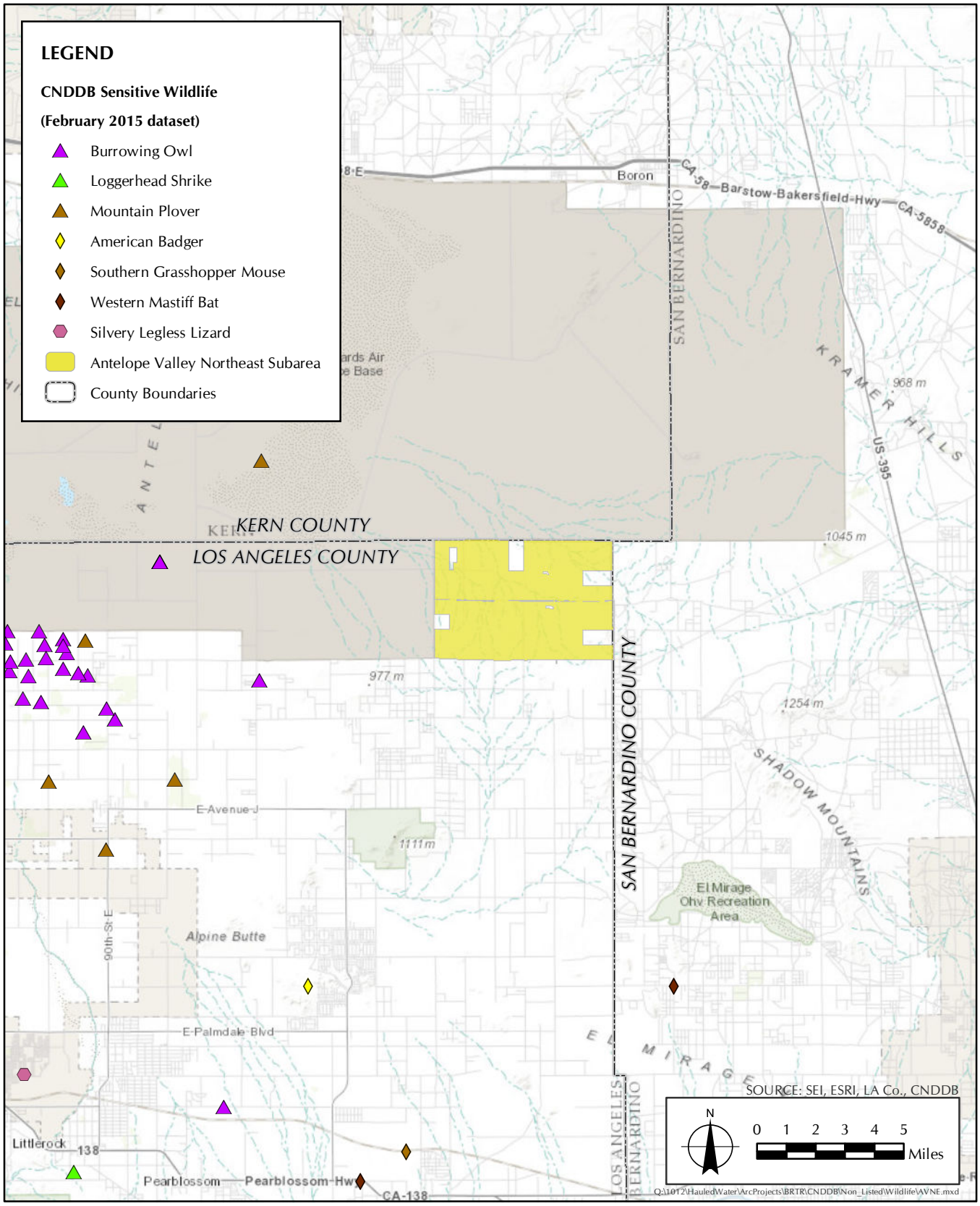


FIGURE 5.1.1-4C

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
Antelope Valley Northeast Subarea

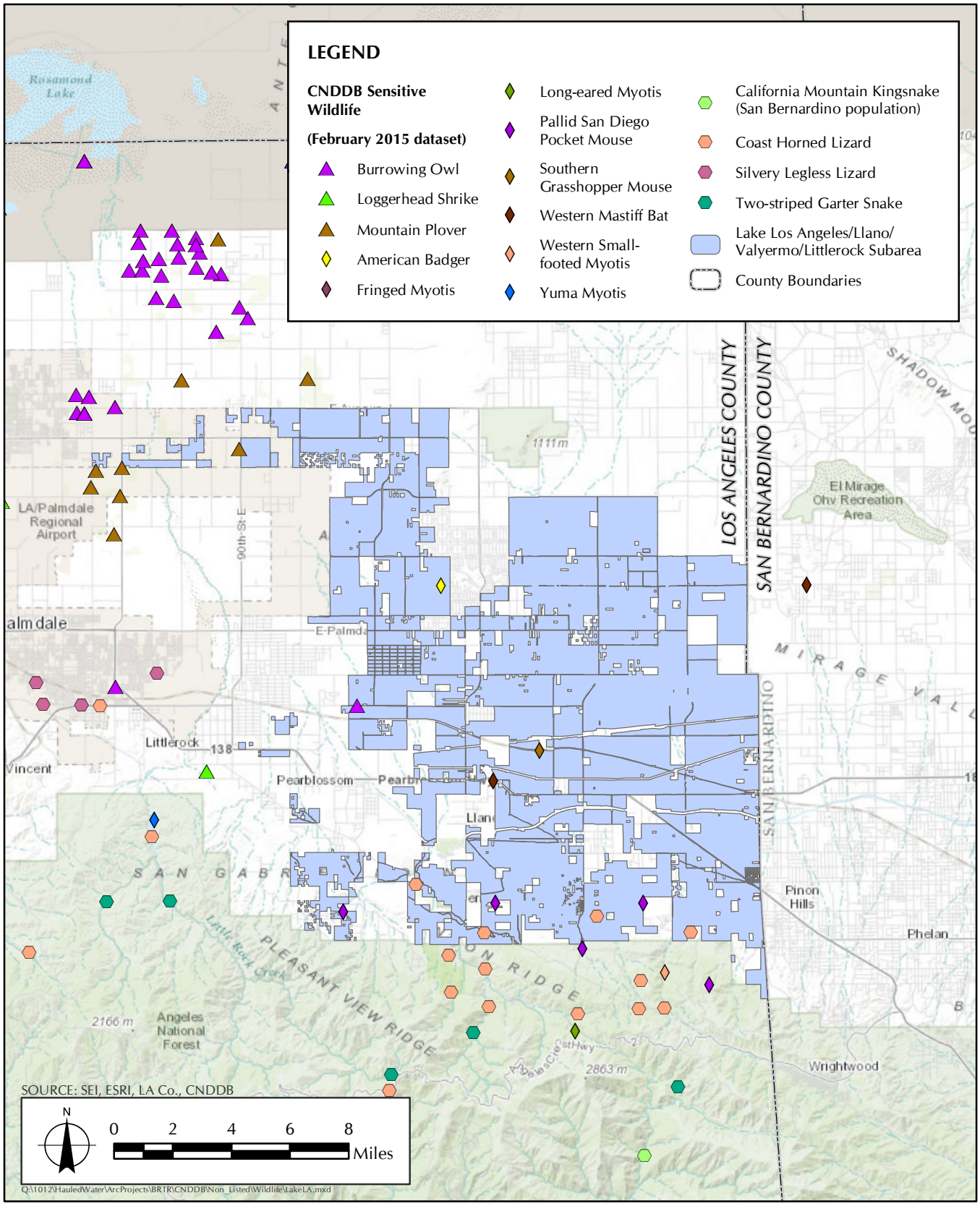


FIGURE 5.1.1-4D

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
Lake Los Angeles/Llano/Valyermo/Littlerock Subarea

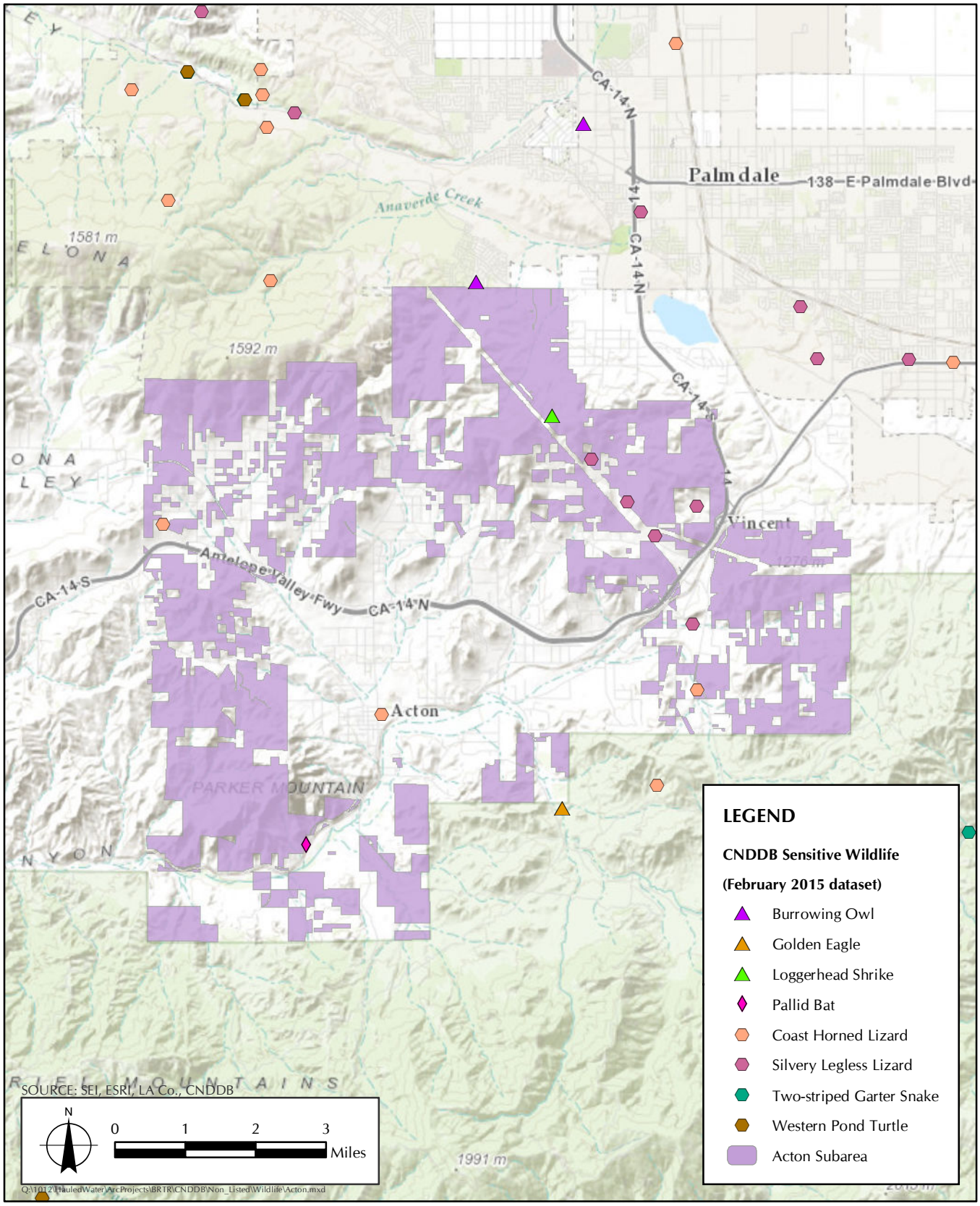


FIGURE 5.1.1-4E

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
Acton Subarea

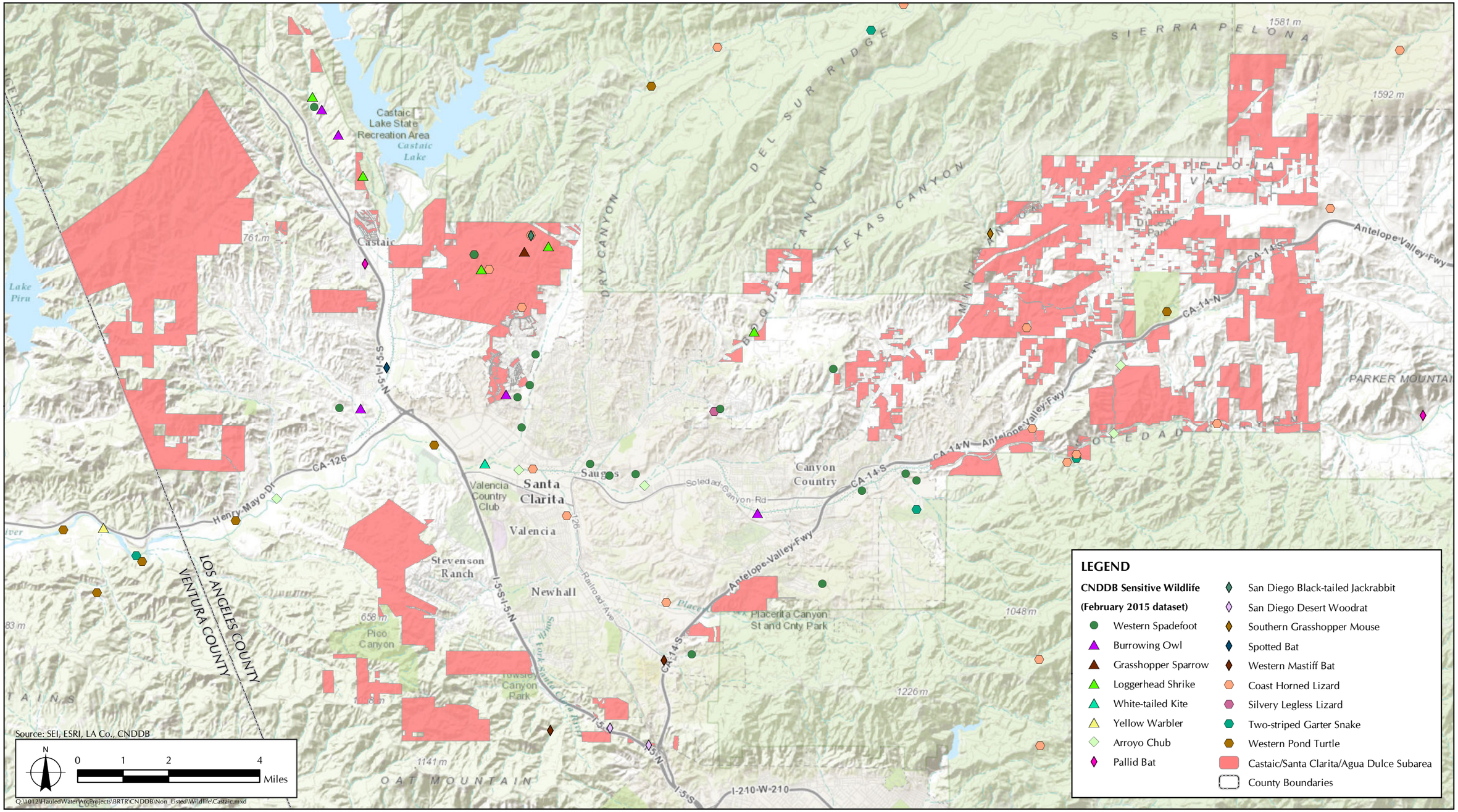


FIGURE 5.1.1-4F

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
Castaic/Santa Clarita/Agua Dulce Subarea

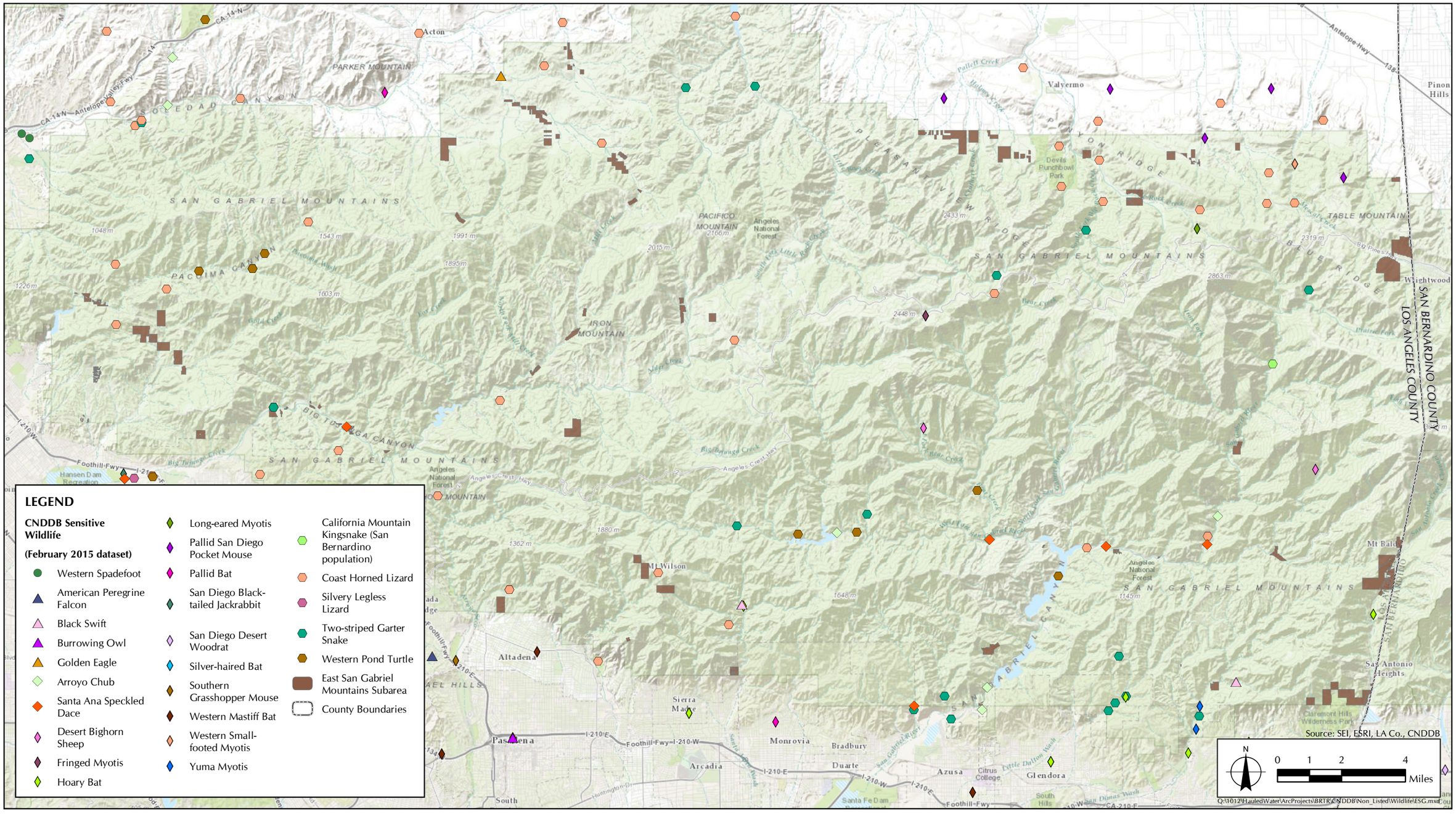


FIGURE 5.1.1-4G

Other Sensitive Plant Species With the Potential to Occur Within The Proposed Initiative Subareas
East San Gabriel Mountains Subarea

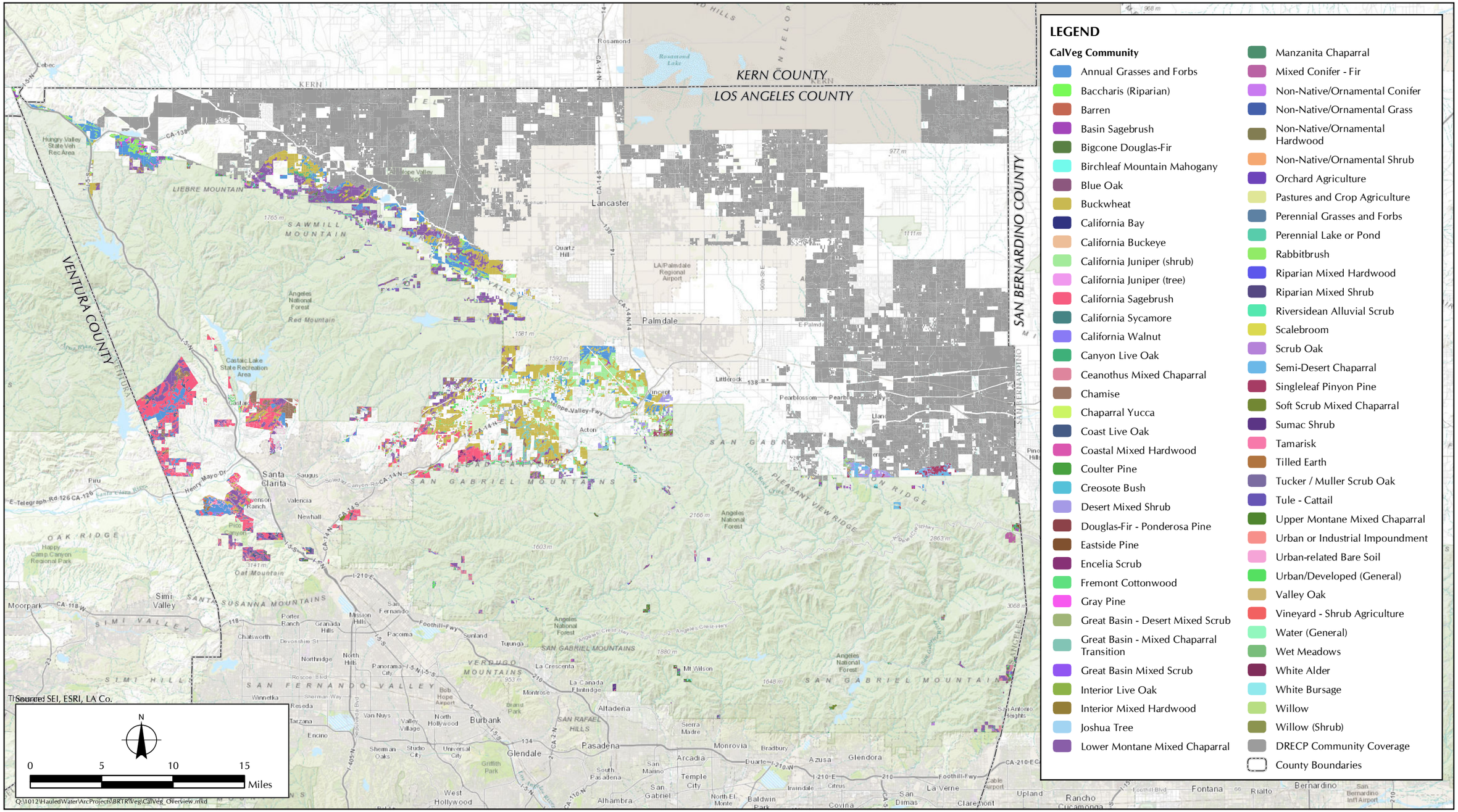


FIGURE 5.1.2-1

CalVeg Plant Communities Present Within the Proposed Initiative Subareas

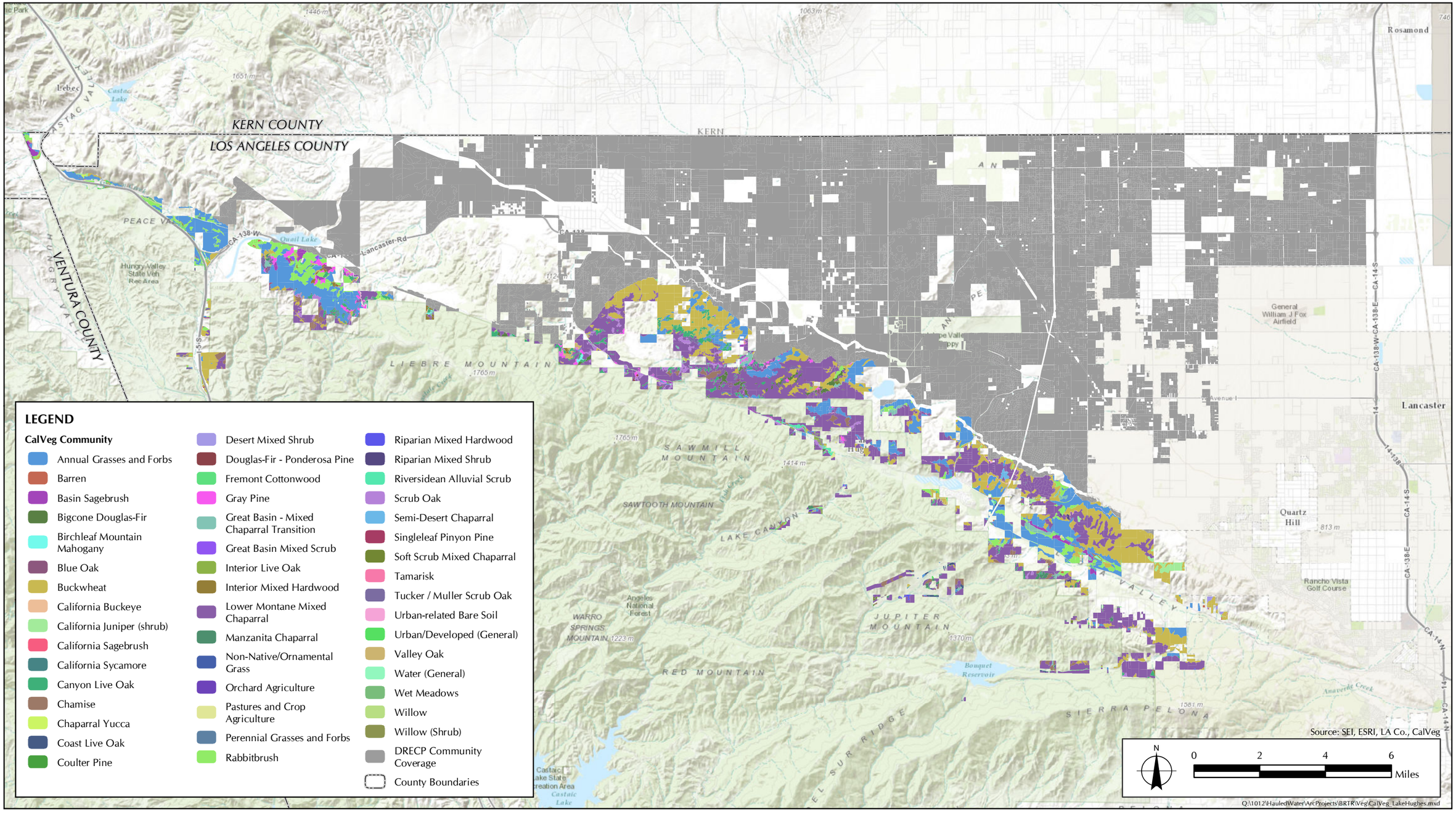


FIGURE 5.1.2-1A

CalVeg Plant Communities Present Within the Proposed Initiative Subareas
Lake Hughes/Gorman/West of Lancaster Subarea

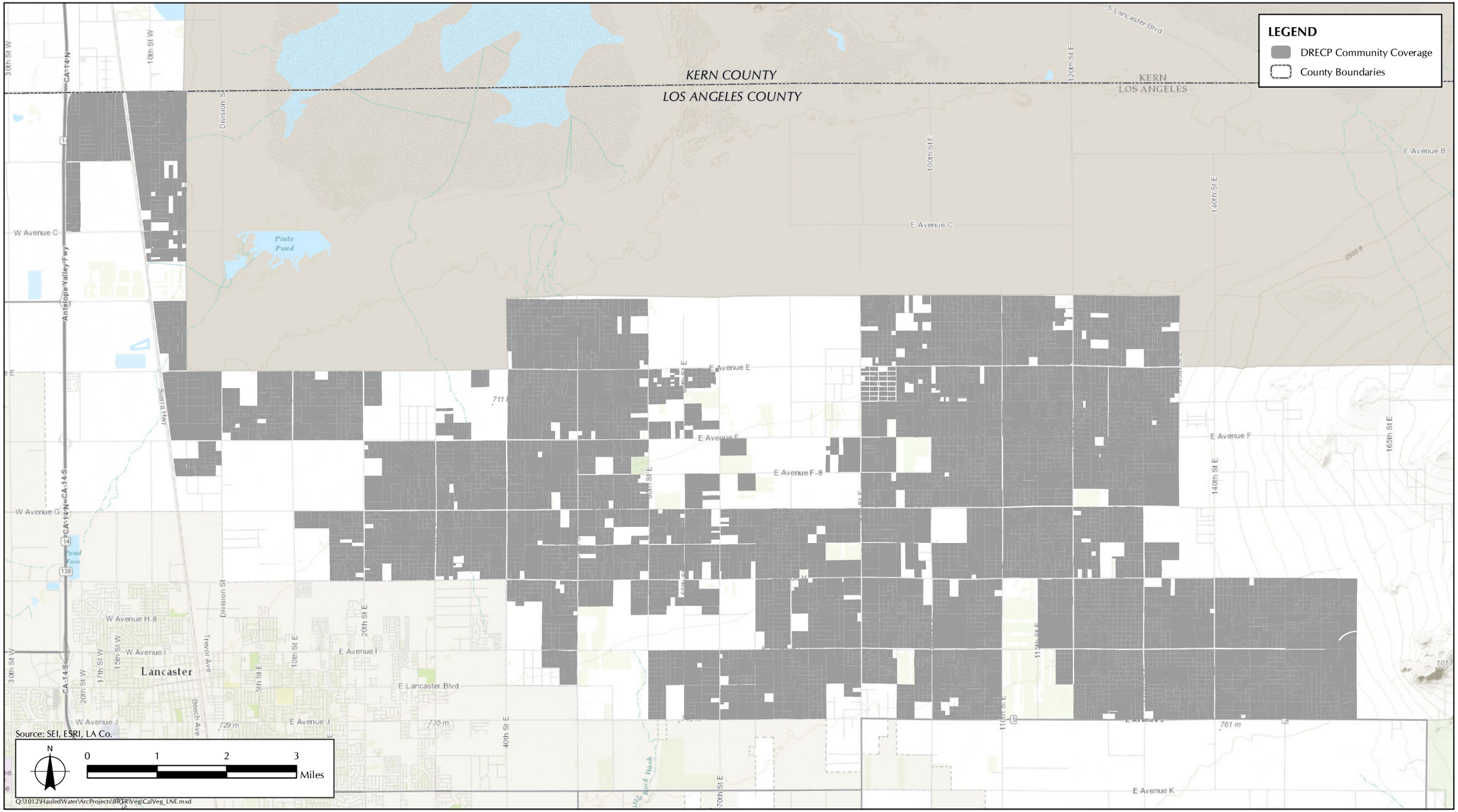


FIGURE 5.1.2-1B

CalVeg Plant Communities Present Within the Proposed Initiative Subareas
Lancaster Northeast Subarea

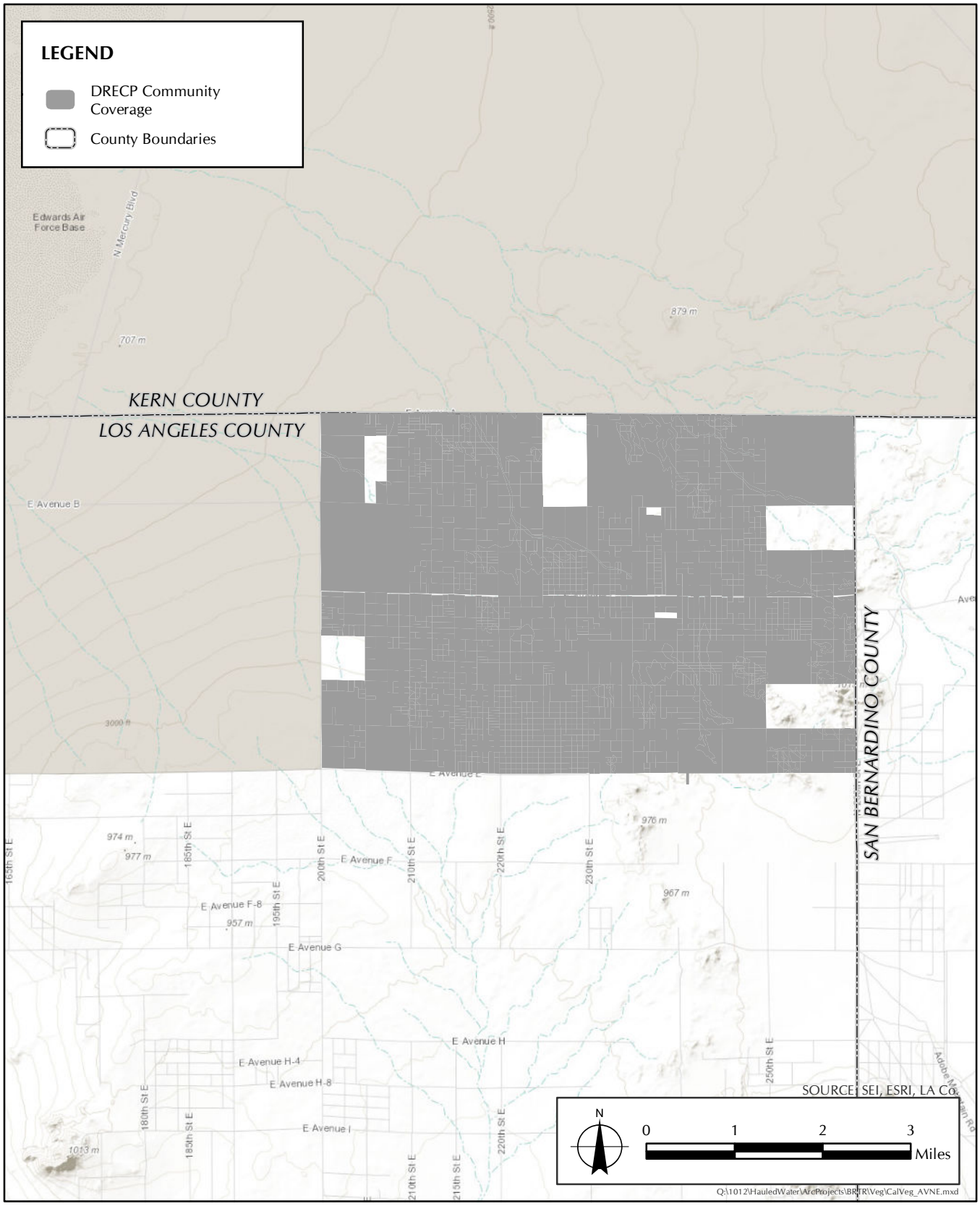


FIGURE 5.1.2-1C

CalVeg Plant Communities Present Within the Proposed Initiative Subareas
Antelope Valley Northeast Subarea

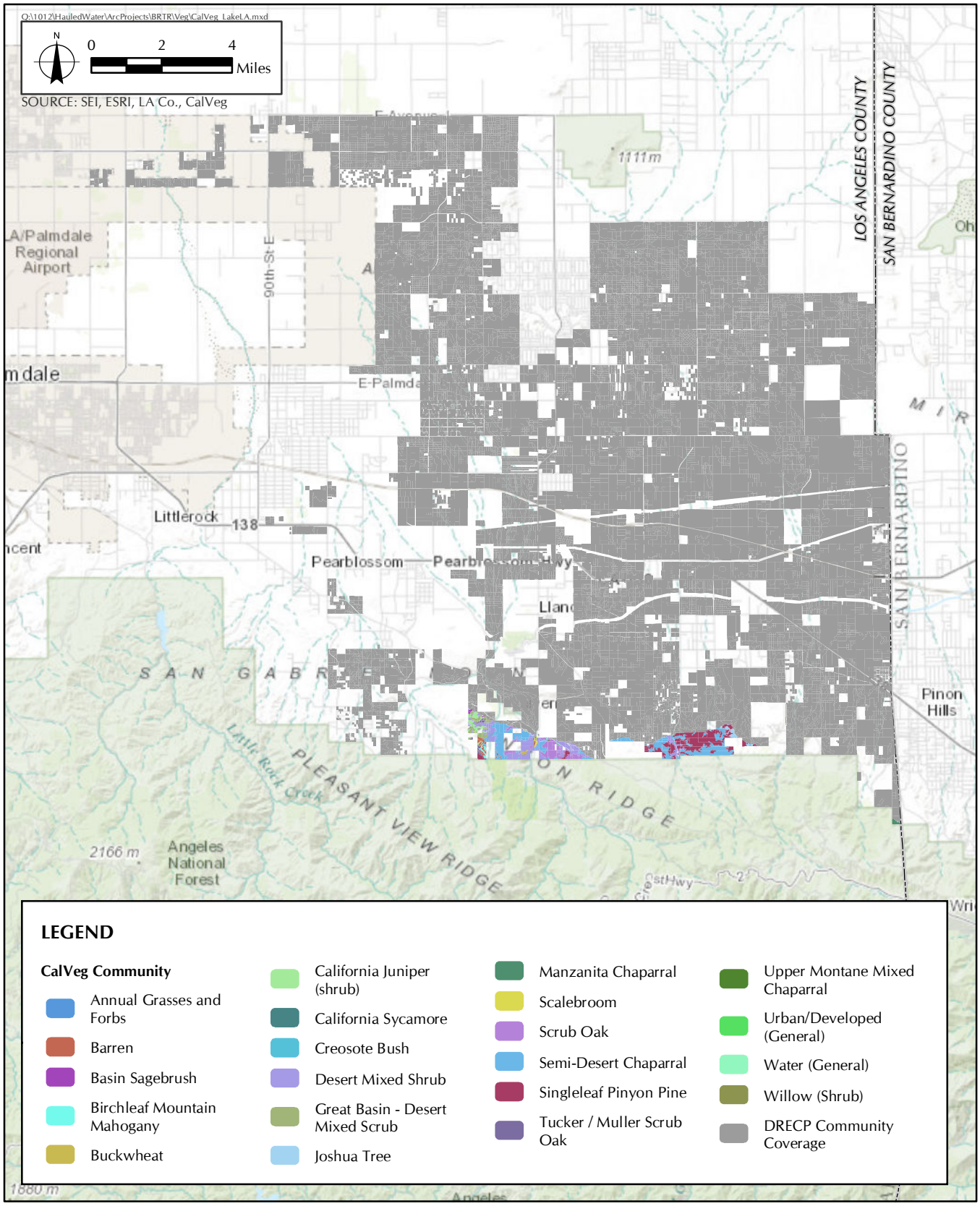


FIGURE 5.1.2-1D

CalVeg Plant Communities Present Within the Proposed Initiative Subareas
Lake Los Angeles/Llano/Valyermo/Littlerock Subarea

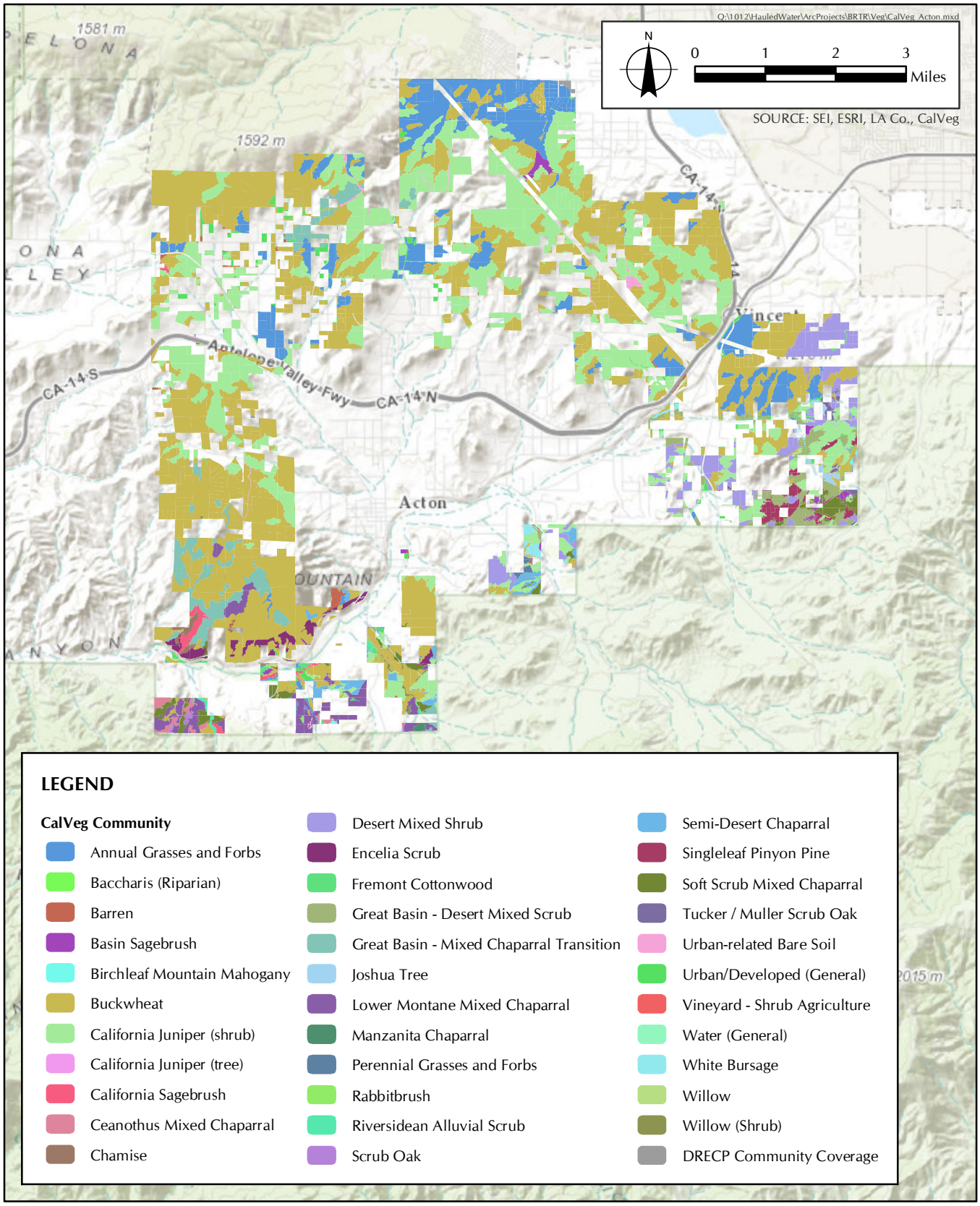


FIGURE 5.1.2-1E

CalVeg Plant Communities Present Within the Proposed Initiative Subareas
Acton Subarea

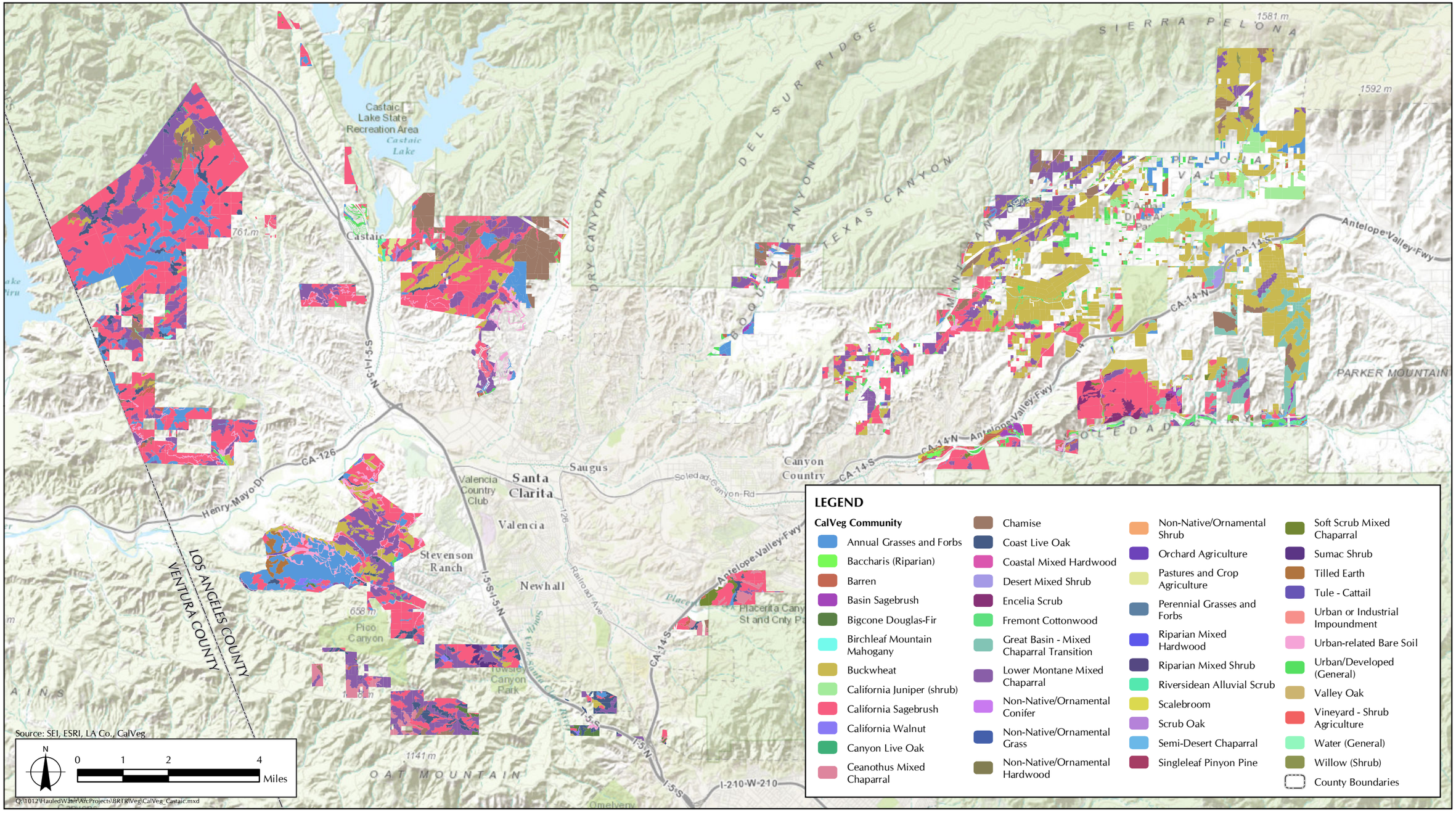


FIGURE 5.1.2-1F

CalVeg Plant Communities Present Within the Proposed Initiative Subareas
Castaic/Santa Clarita/Agua Dulce Subarea

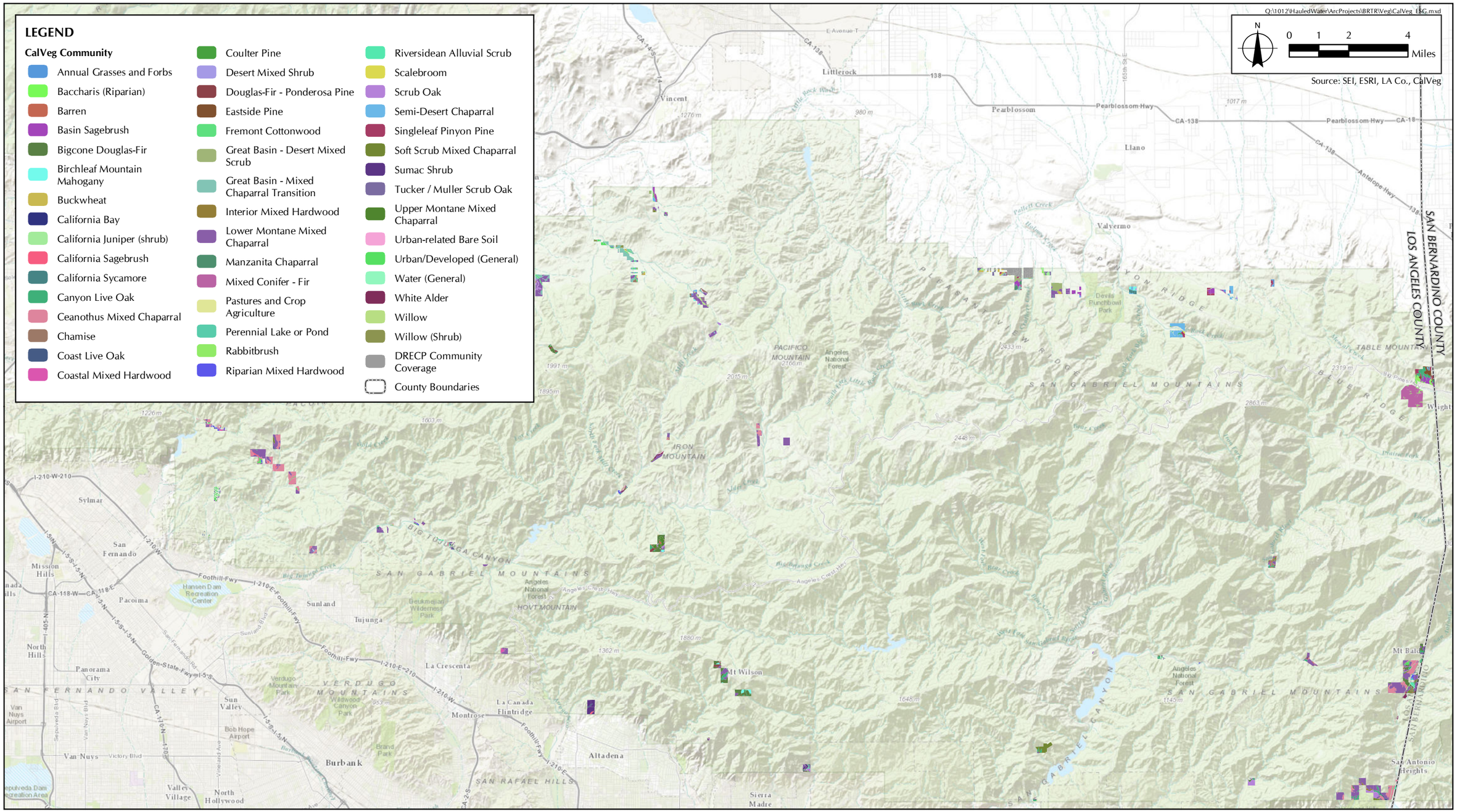


FIGURE 5.1.2-1G

CalVeg Plant Communities Present Within the Proposed Initiative Subareas
East San Gabriel Mountains Subarea

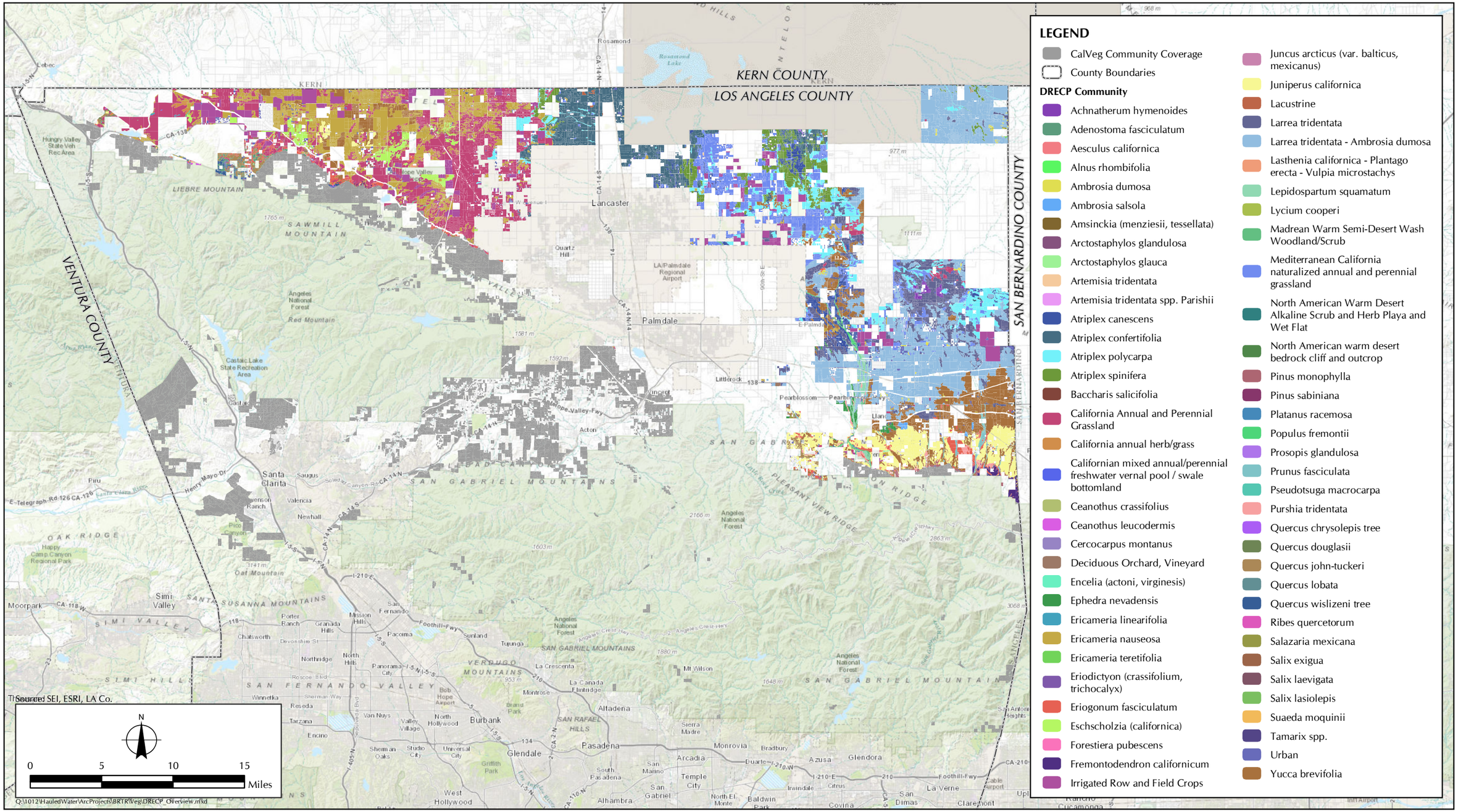
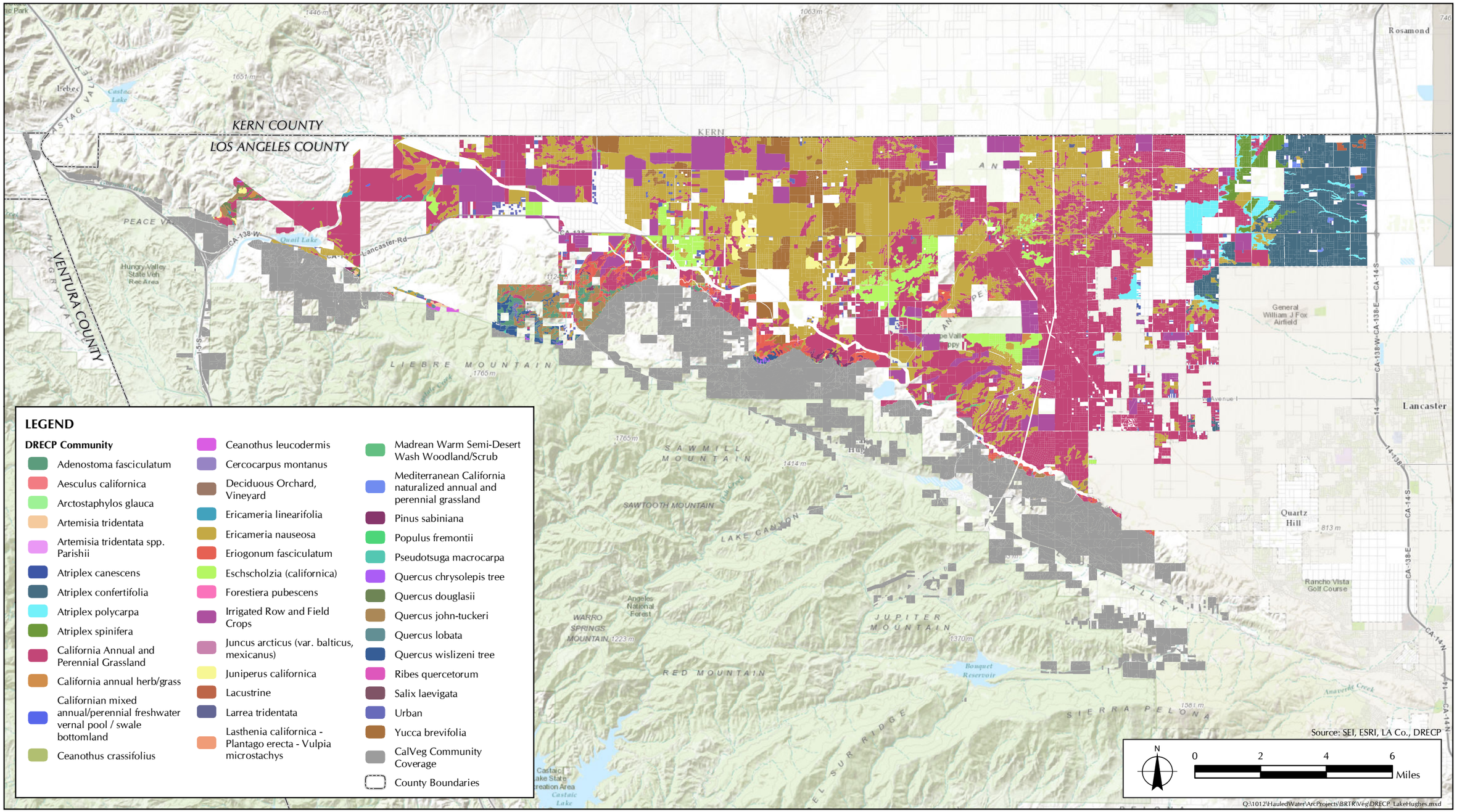


FIGURE 5.1.2-2

DRECP Plant Communities Present Within the Proposed Initiative Subareas



LEGEND

DRECP Community

- Adenostoma fasciculatum
- Aesculus californica
- Arctostaphylos glauca
- Artemisia tridentata
- Artemisia tridentata spp. Parishii
- Atriplex canescens
- Atriplex confertifolia
- Atriplex polycarpa
- Atriplex spinifera
- California Annual and Perennial Grassland
- California annual herb/grass
- Californian mixed annual/perennial freshwater vernal pool / swale bottomland
- Ceanothus crassifolius
- Ceanothus leucodermis
- Cercocarpus montanus
- Deciduous Orchard, Vineyard
- Ericameria linearifolia
- Ericameria nauseosa
- Eriogonum fasciculatum
- Eschscholzia (californica)
- Forestiera pubescens
- Irrigated Row and Field Crops
- Juncus arcticus (var. balticus, mexicanus)
- Juniperus californica
- Lacustrine
- Larrea tridentata
- Lasthenia californica - Plantago erecta - Vulpia microstachys
- Madrean Warm Semi-Desert Wash Woodland/Scrub
- Mediterranean California naturalized annual and perennial grassland
- Pinus sabiniana
- Populus fremontii
- Pseudotsuga macrocarpa
- Quercus chrysolepis tree
- Quercus douglasii
- Quercus john-tuckeri
- Quercus lobata
- Quercus wislizeni tree
- Ribes quercetorum
- Salix laevigata
- Urban
- Yucca brevifolia
- CalVeg Community Coverage
- County Boundaries

FIGURE 5.1.2-2A

DRECP Plant Communities Present Within the Proposed Initiative Subareas
Lake Hughes/Gorman/West of Lancaster Subarea

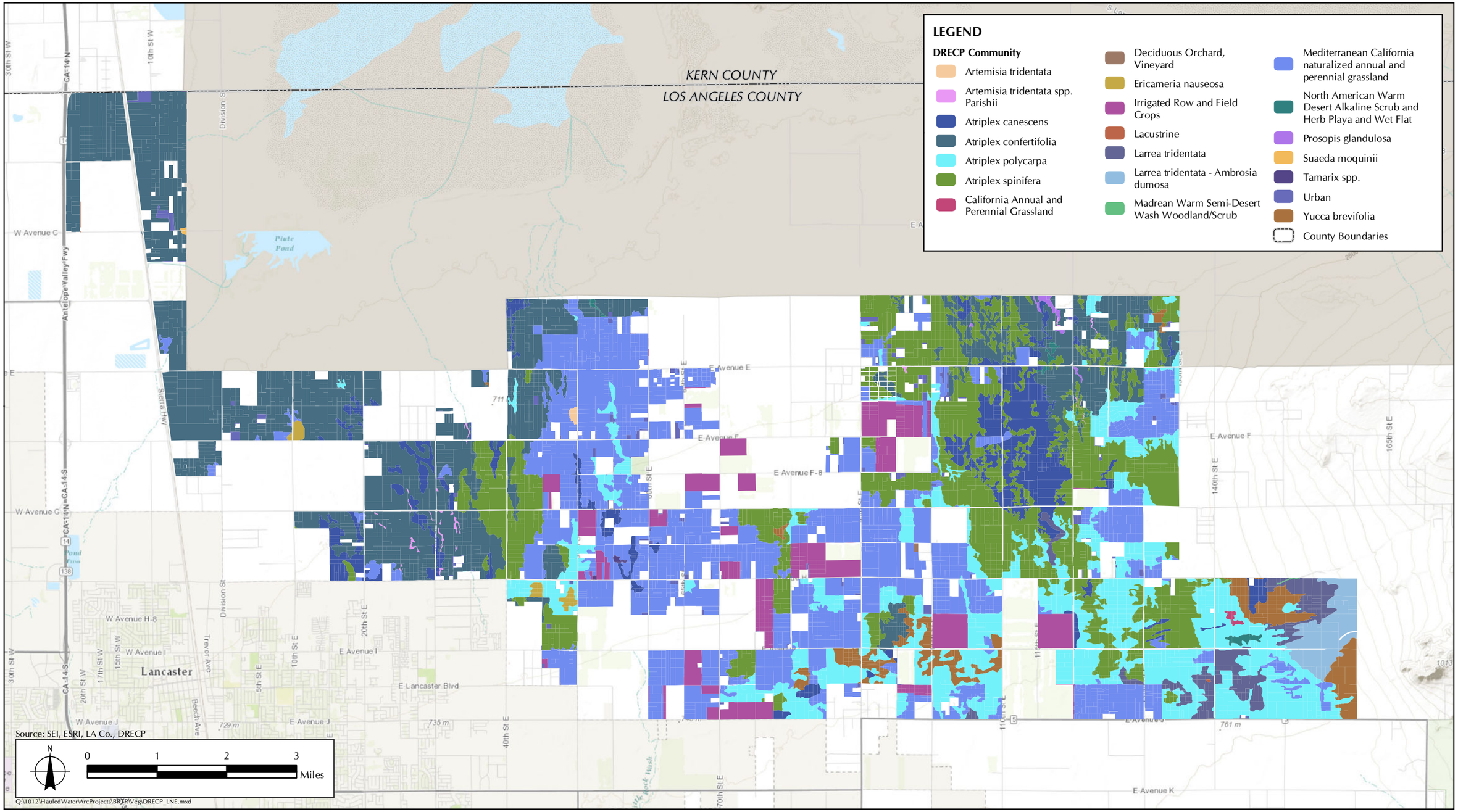


FIGURE 5.1.2-2B

DRECP Plant Communities Present Within the Proposed Initiative Subareas
Lancaster Northeast Subarea

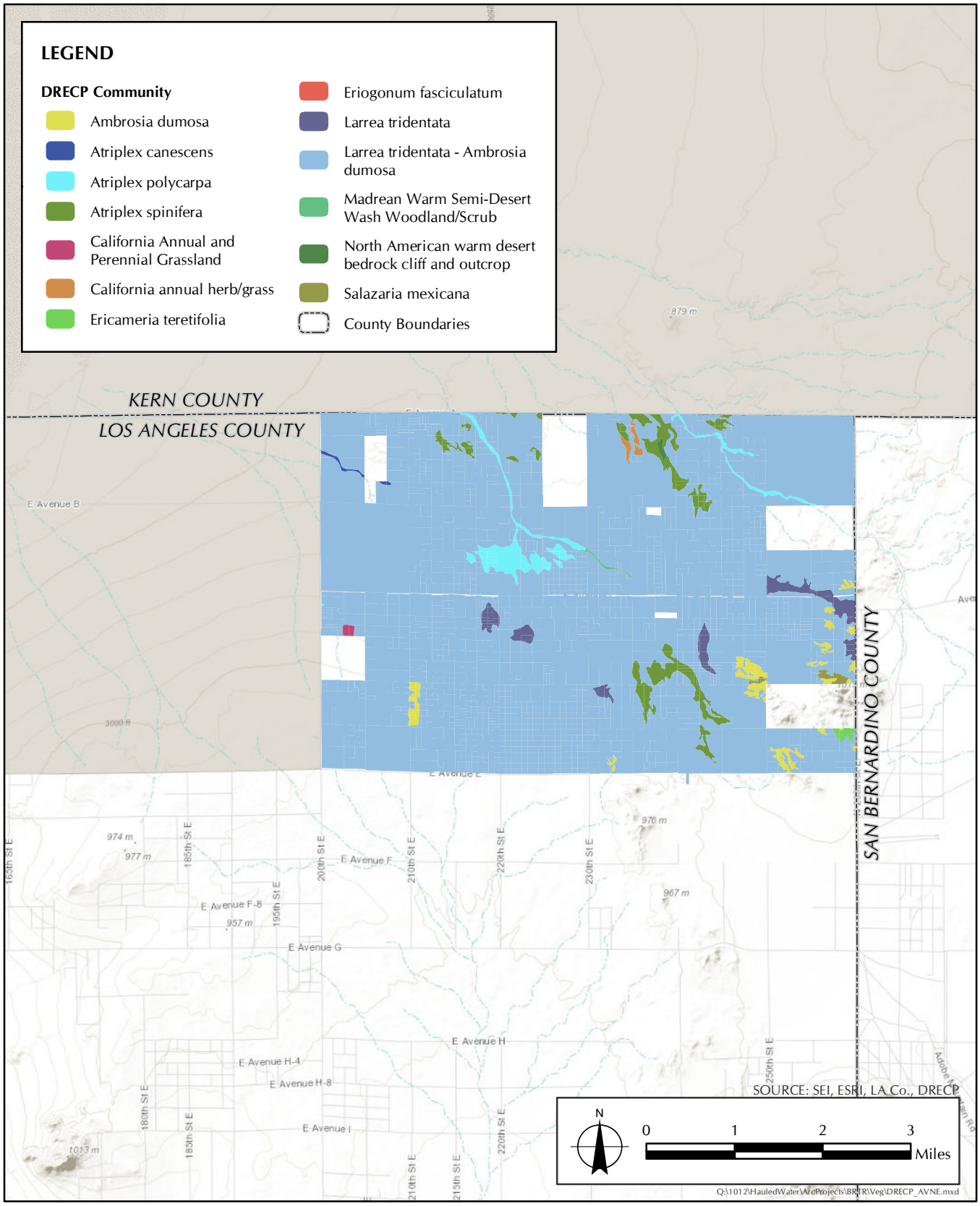


FIGURE 5.1.2-2C

DRECP Plant Communities Present Within the Proposed Initiative Subareas
Antelope Valley Northeast Subarea

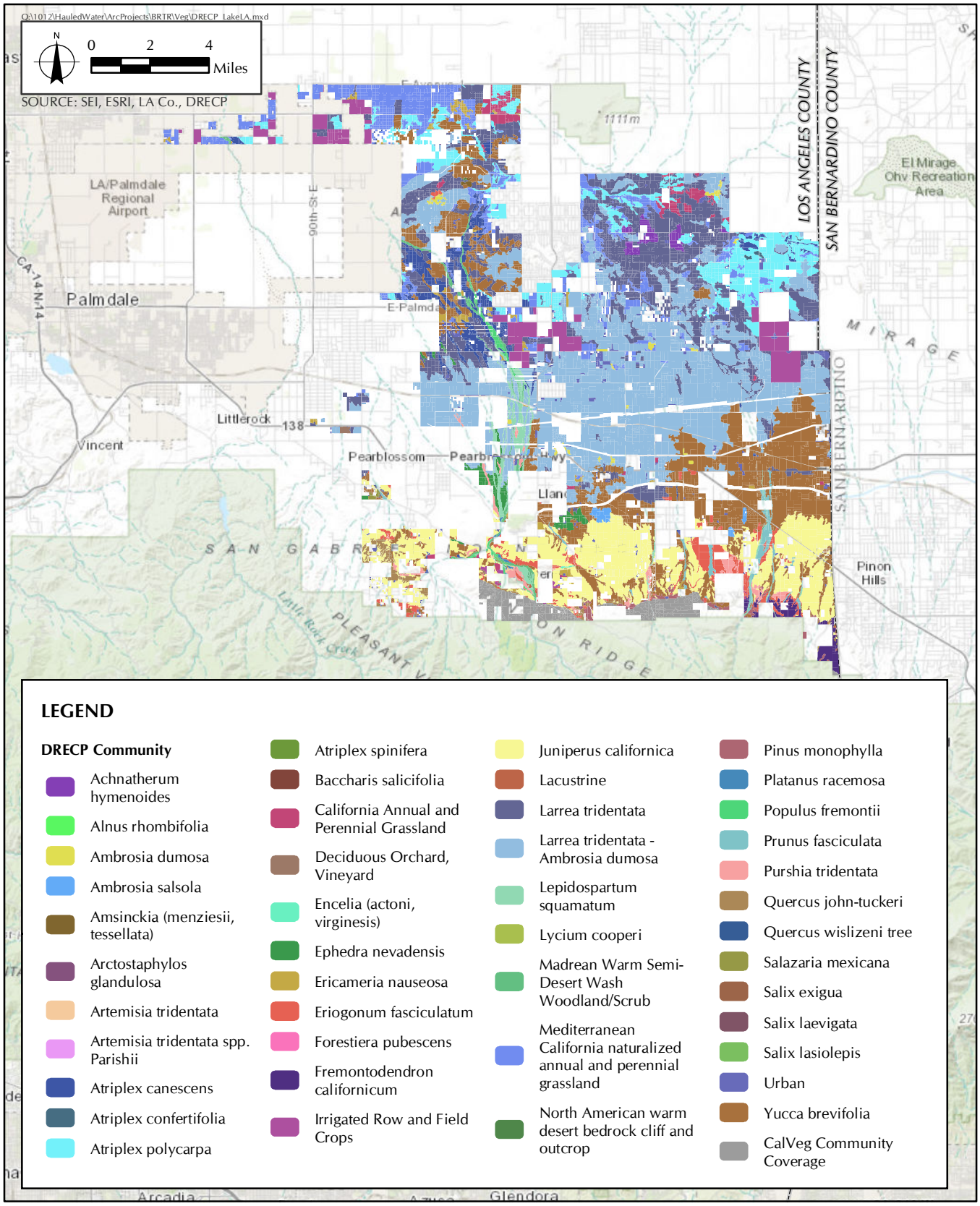


FIGURE 5.1.2-2D

DRECP Plant Communities Present Within the Proposed Initiative Subareas
Lake Los Angeles/Llano/Valyermo/Littlerock Subarea

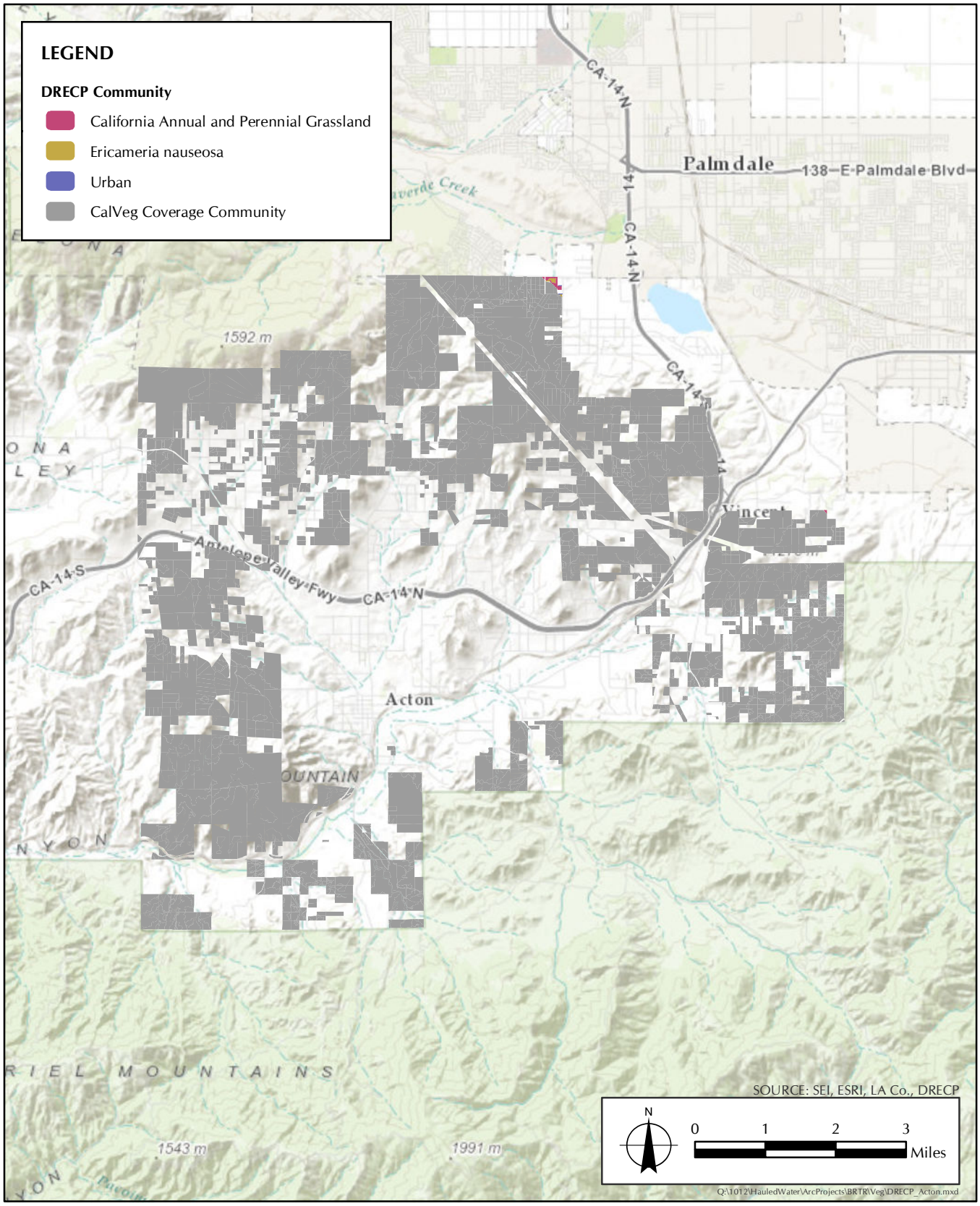


FIGURE 5.1.2-2E

DRECP Plant Communities Present Within the Proposed Initiative Subareas
Acton Subarea

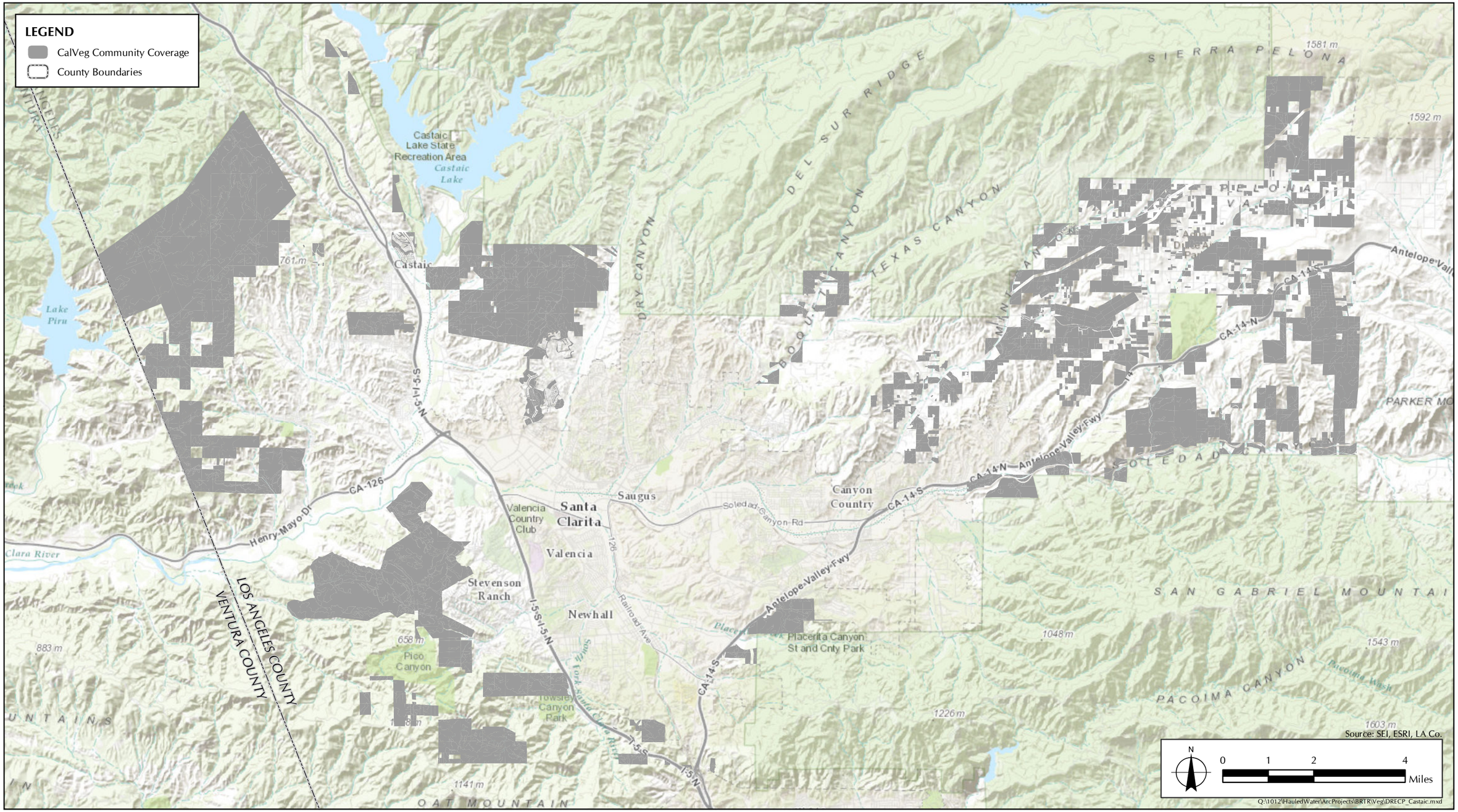


FIGURE 5.1.2-2F

DRECP Plant Communities Present Within the Proposed Initiative Subareas
Castaic/Santa Clarita/Agua Dulce Subarea

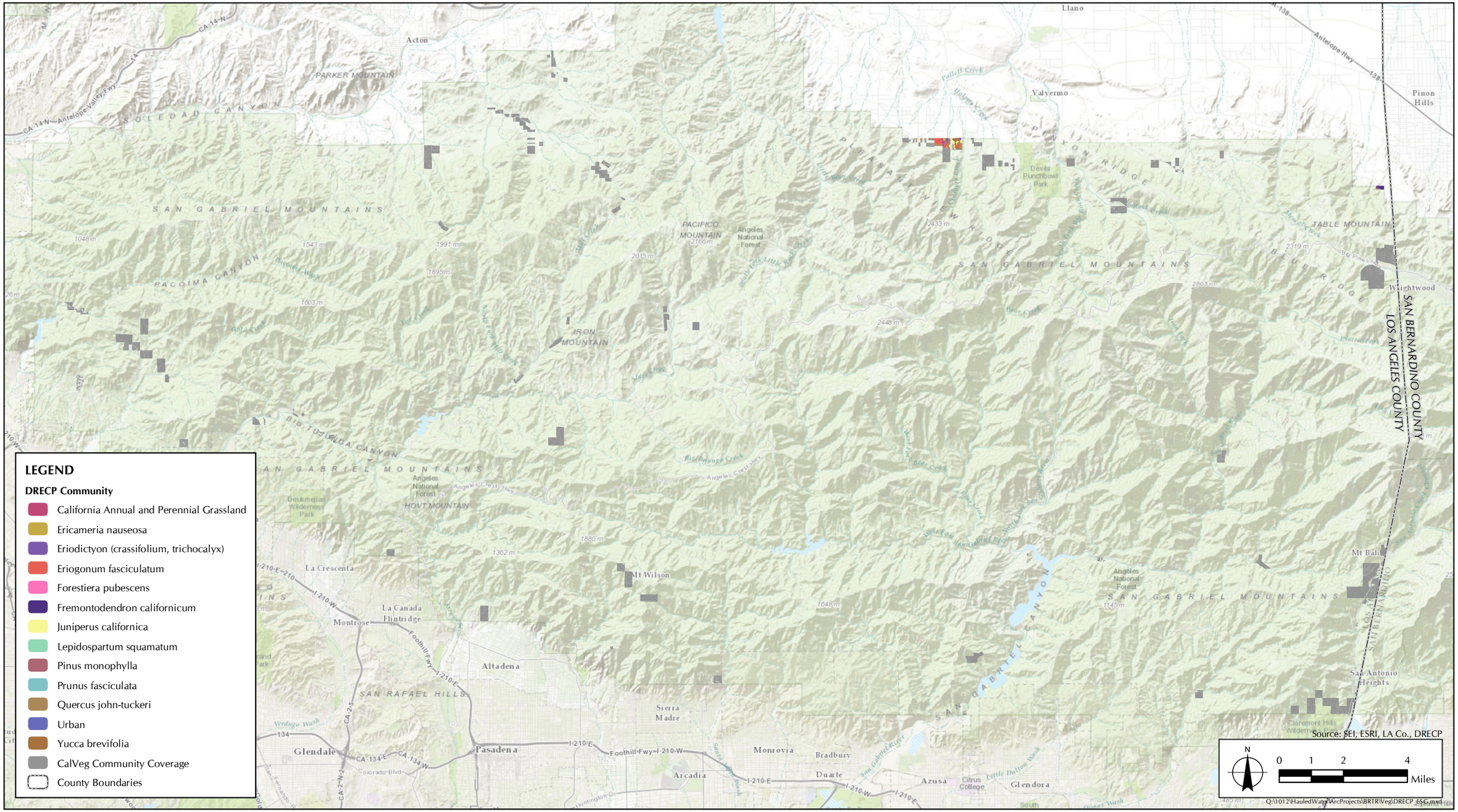


FIGURE 5.1.2-2G

DRECP Plant Communities Present Within the Proposed Initiative Subareas
East San Gabriel Mountains Subarea

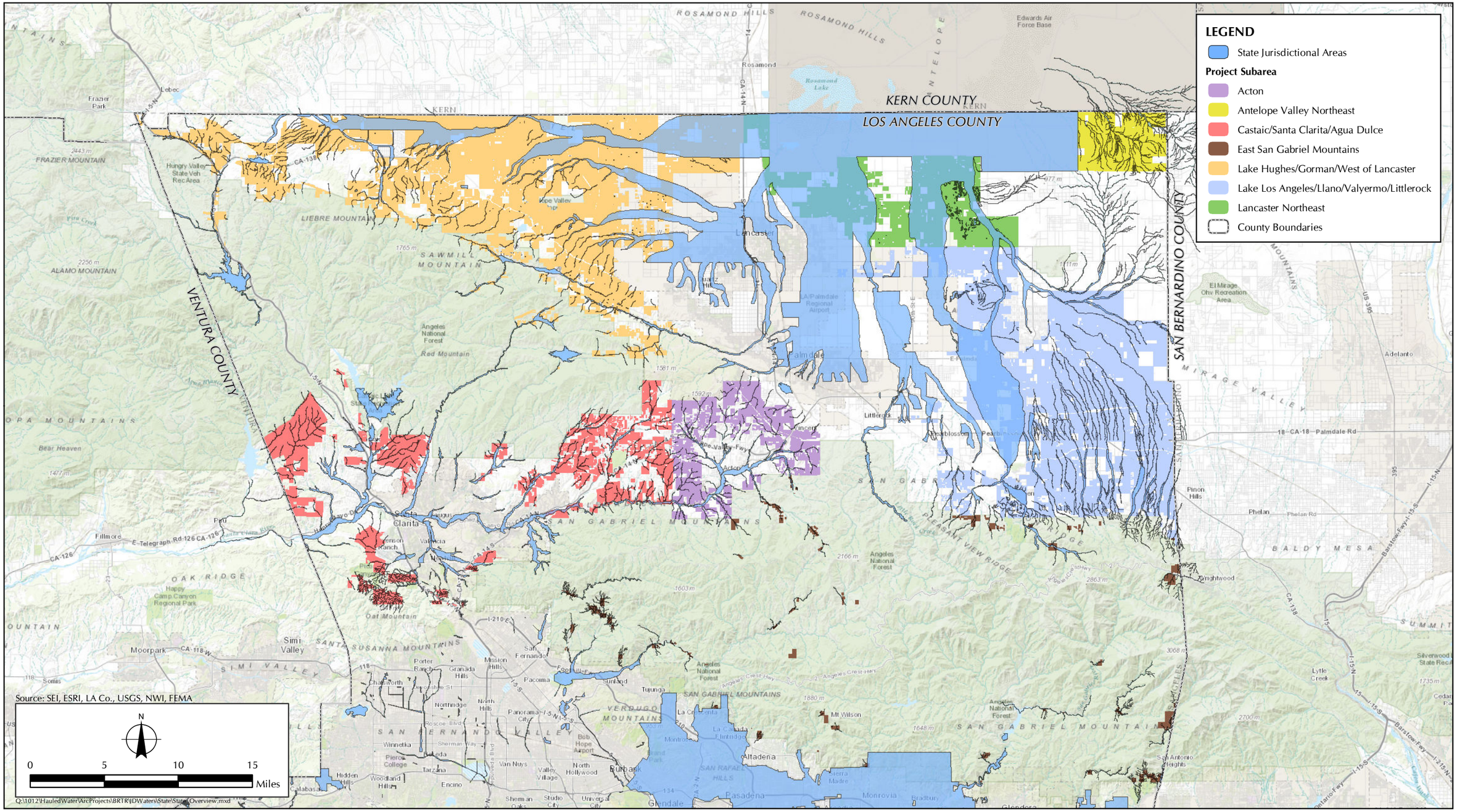


FIGURE 5.1.2-3

State Jurisdictional Areas Potentially Present Within the Proposed Initiative Subareas

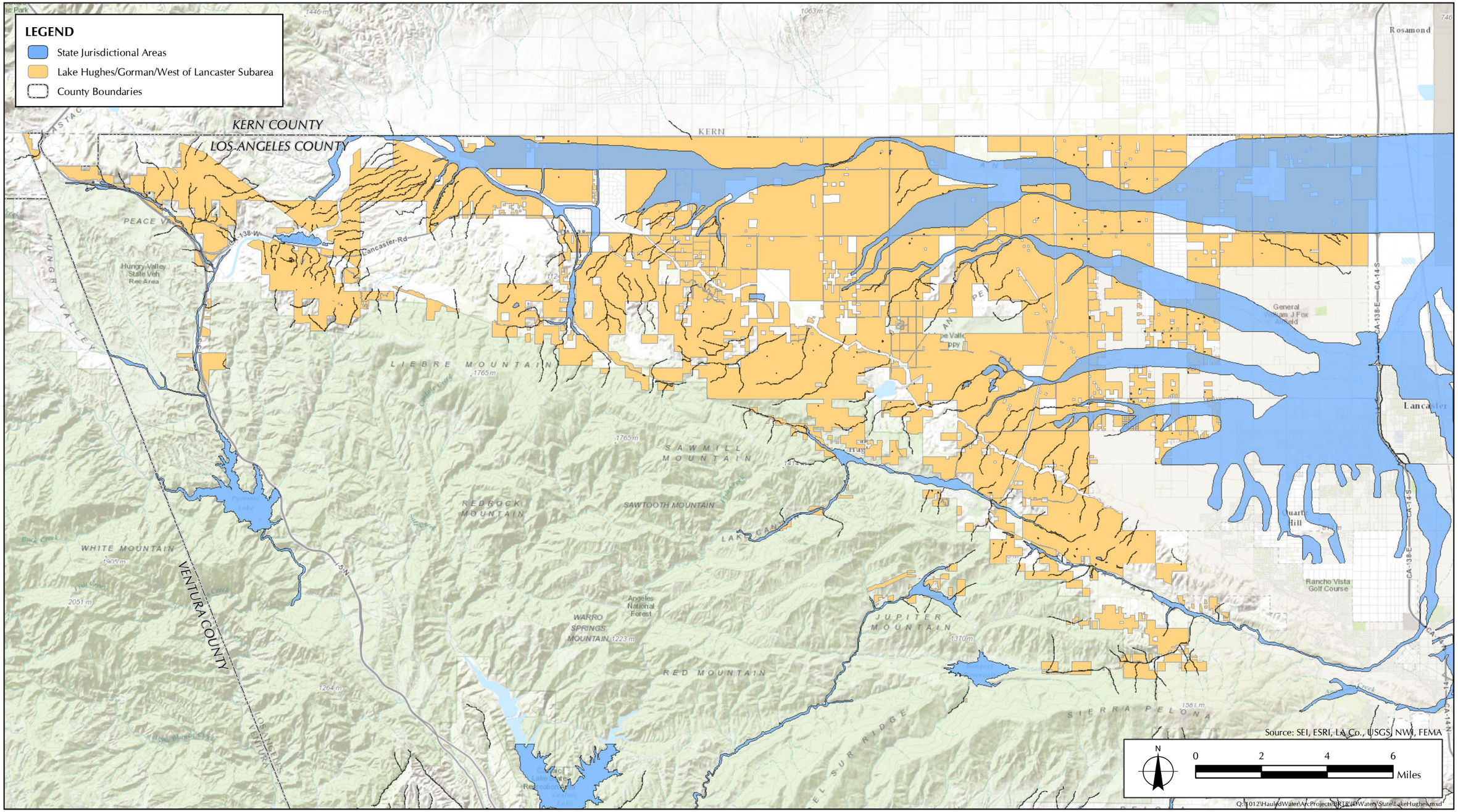


FIGURE 5.1.2-3A

State Jurisdictional Areas Potentially Present Within the Proposed Initiative Subareas
Lake Hughes/Gorman/West of Lancaster Subarea

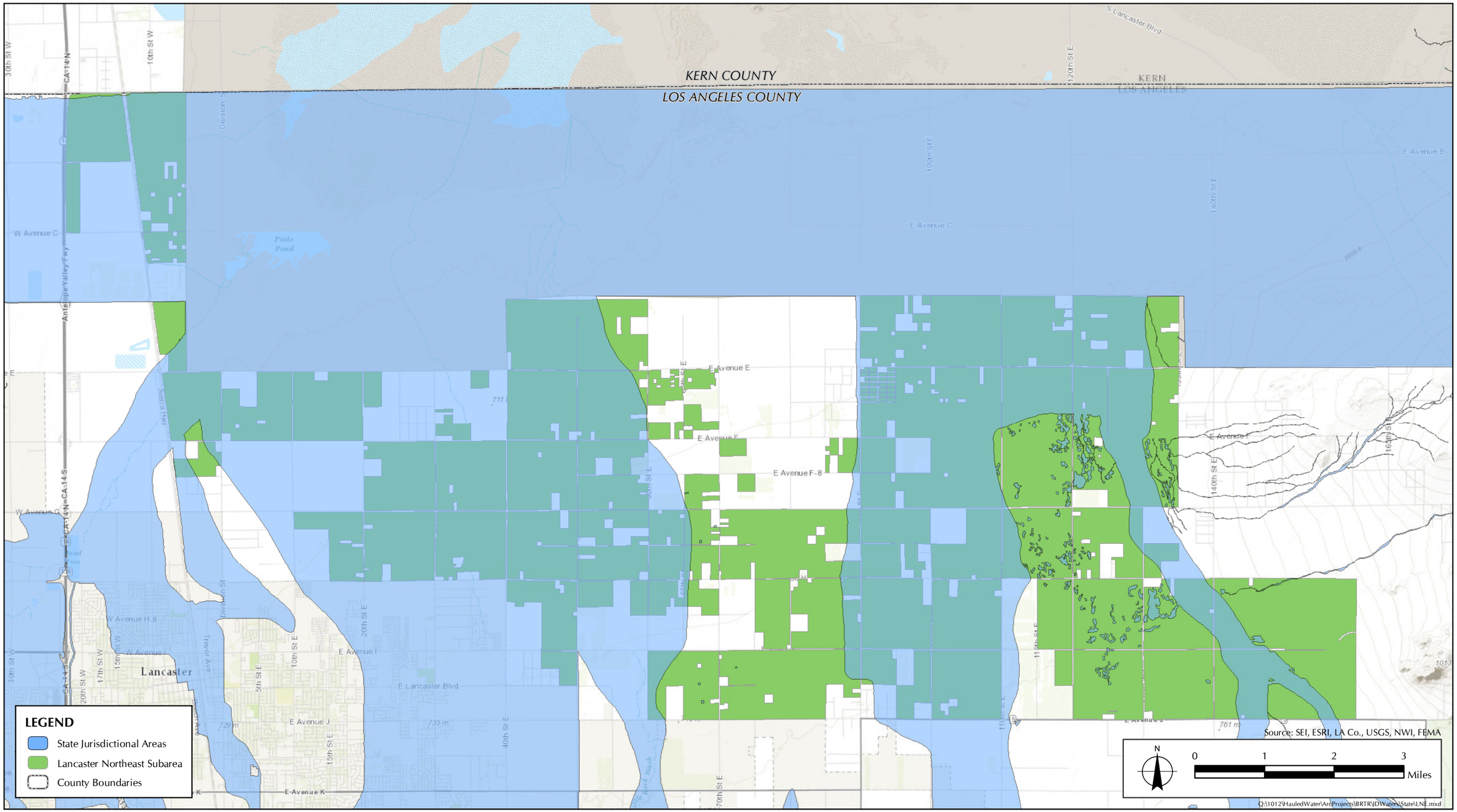


FIGURE 5.1.2-3B

State Jurisdictional Areas Potentially Present Within the Proposed Initiative Subareas
Lancaster Northeast Subarea

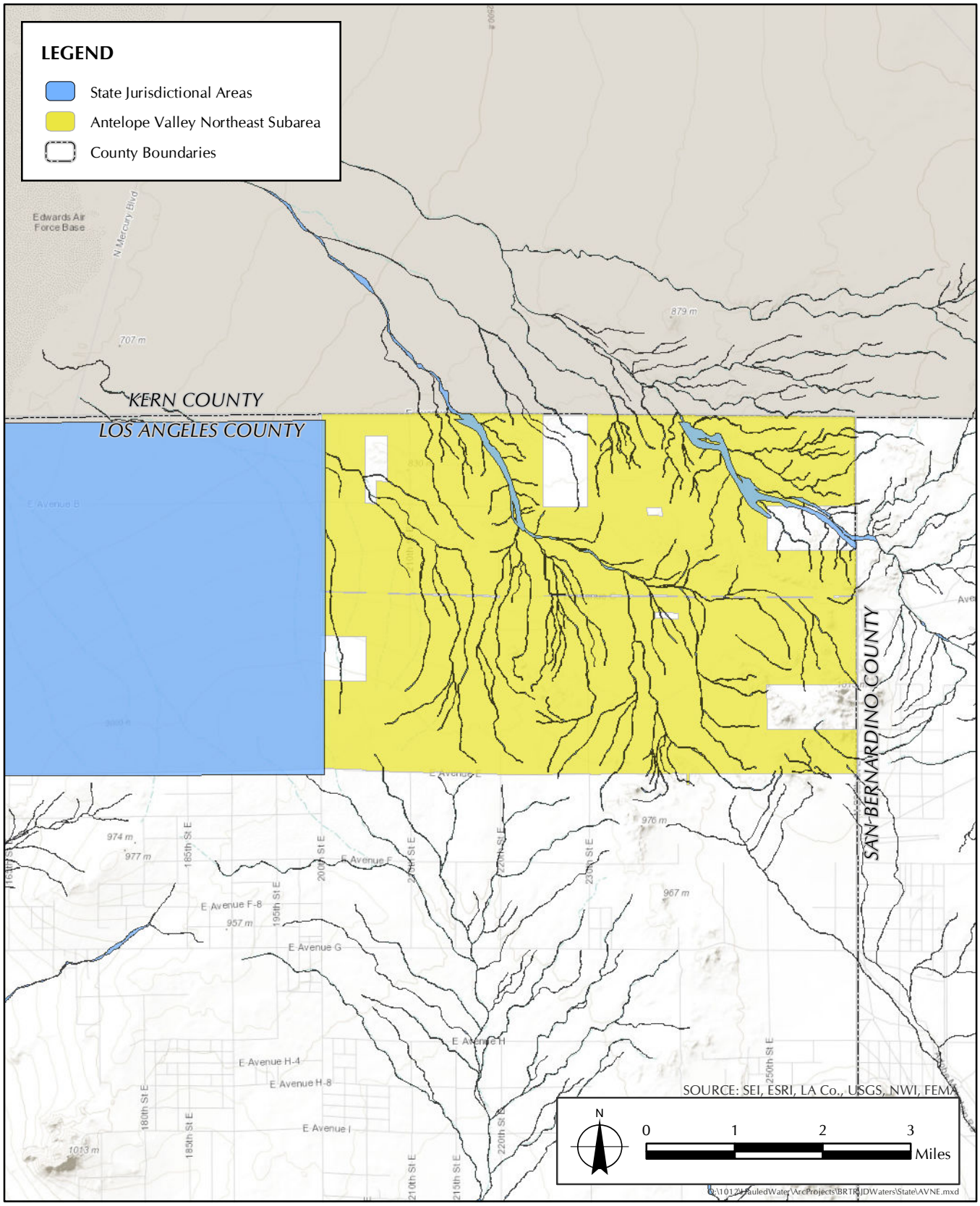


FIGURE 5.1.2-3C

State Jurisdictional Areas Potentially Present Within the Proposed Initiative Subareas
Antelope Valley Northeast Subarea

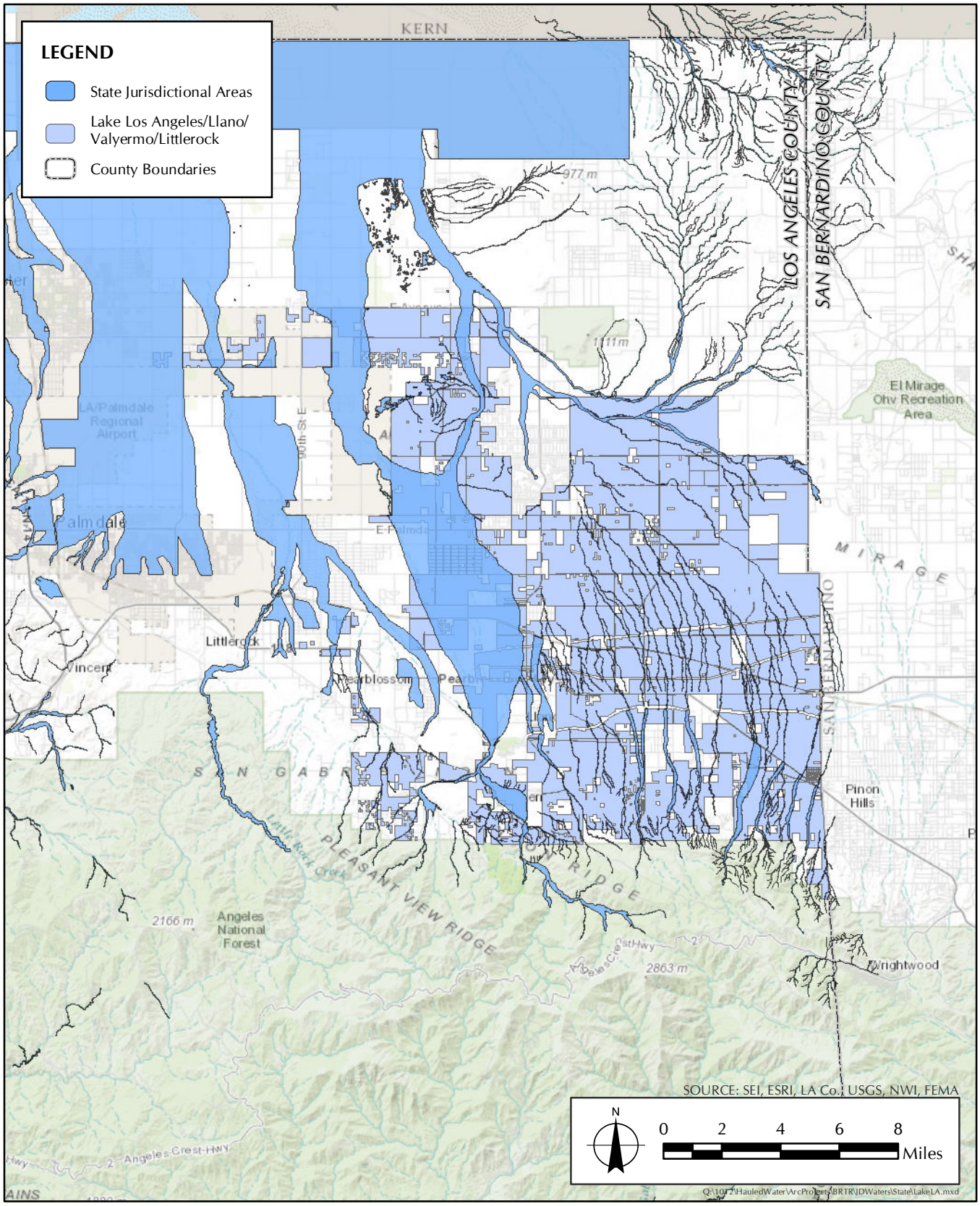


FIGURE 5.1.2-3D

State Jurisdictional Areas Potentially Present Within the Proposed Initiative Subareas
Lake Los Angeles/Llano/Valyermo/Littlerock Subarea

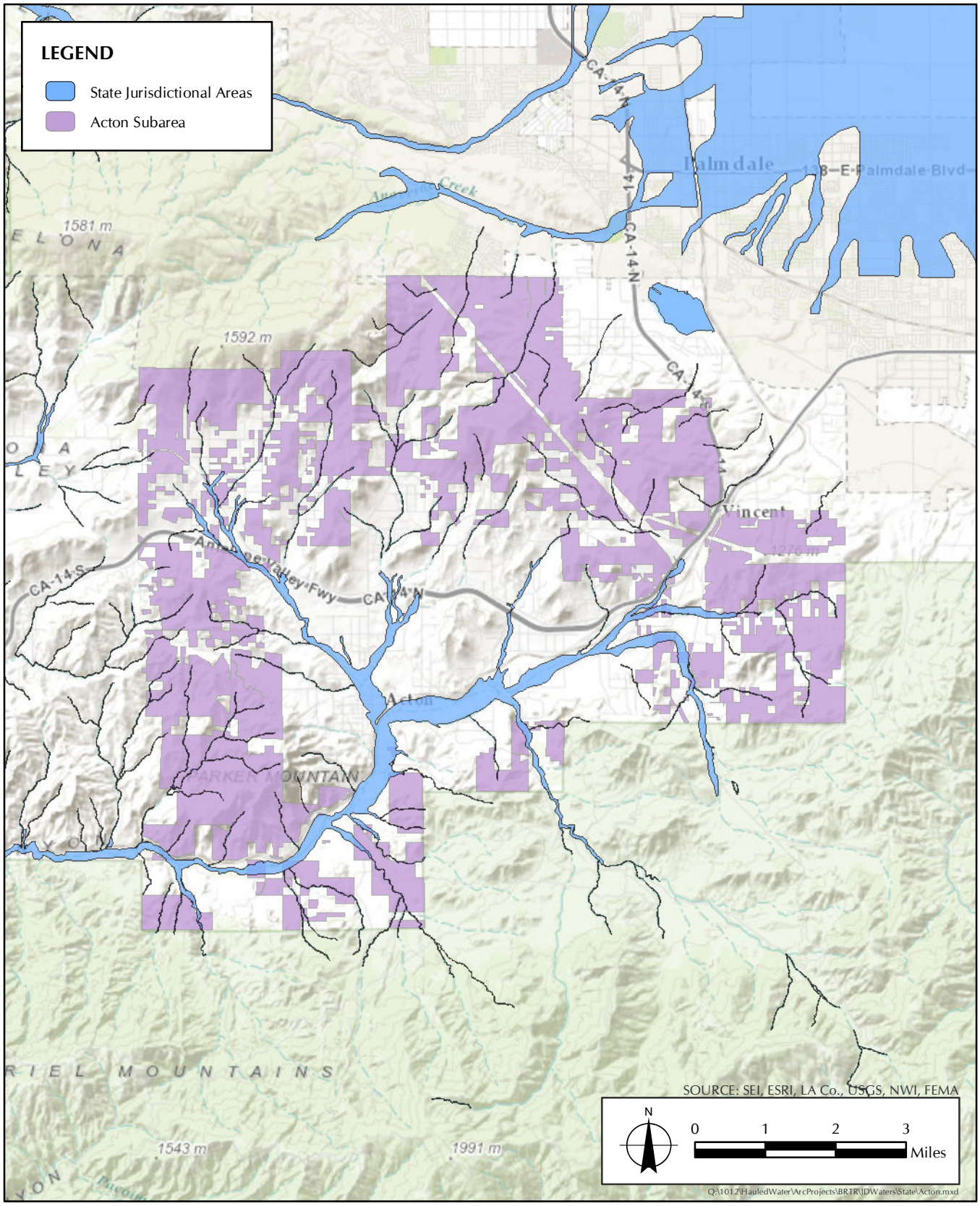


FIGURE 5.1.2-3E

State Jurisdictional Areas Potentially Present Within the Proposed Initiative Subareas
Acton Subarea

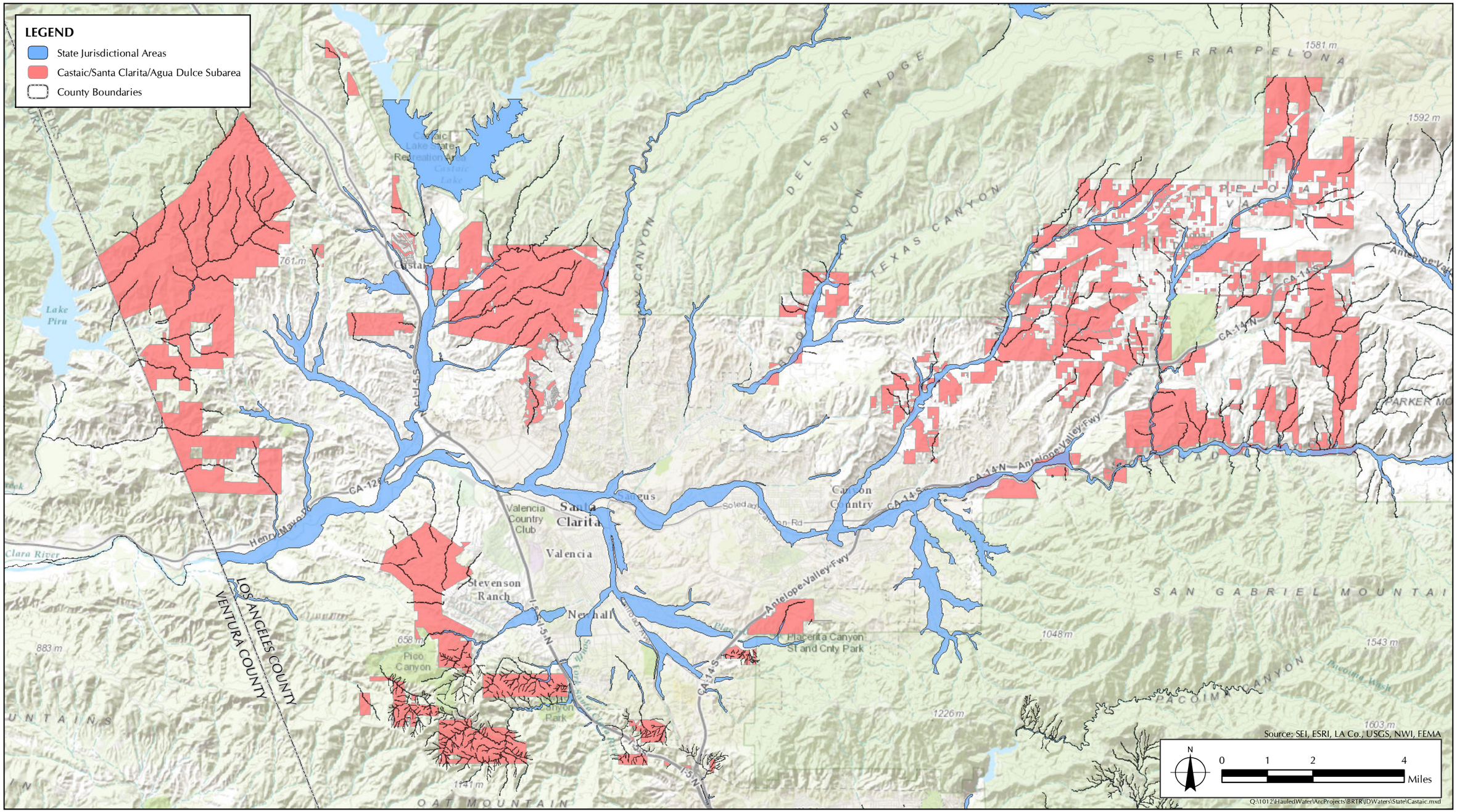


FIGURE 5.1.2-3F

State Jurisdictional Areas Potentially Present Within the Proposed Initiative Subareas
Castaic/Santa Clarita/Agua Dulce Subarea

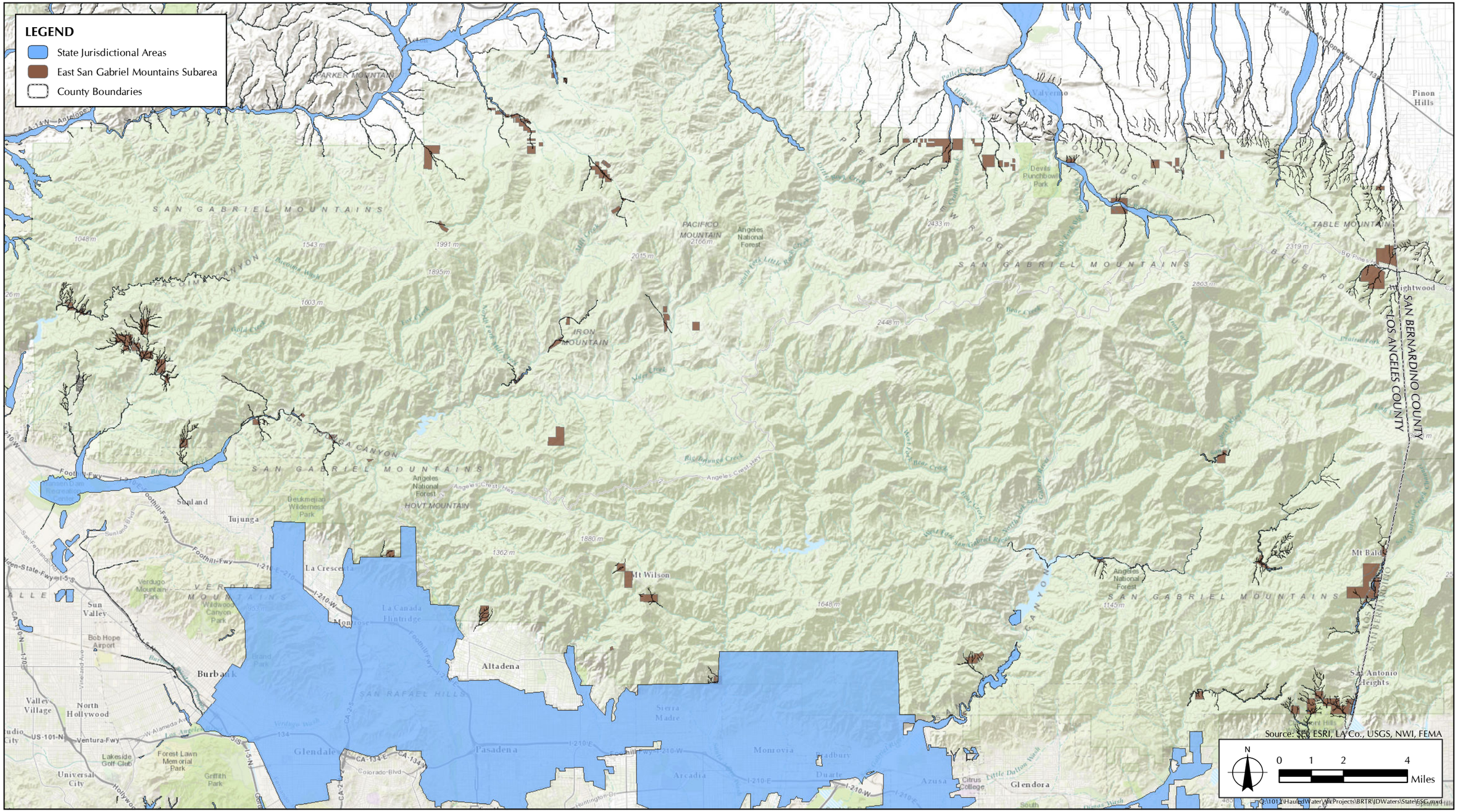


FIGURE 5.1.2-3G

State Jurisdictional Areas Potentially Present Within the Proposed Initiative Subareas
East San Gabriel Mountains Subarea

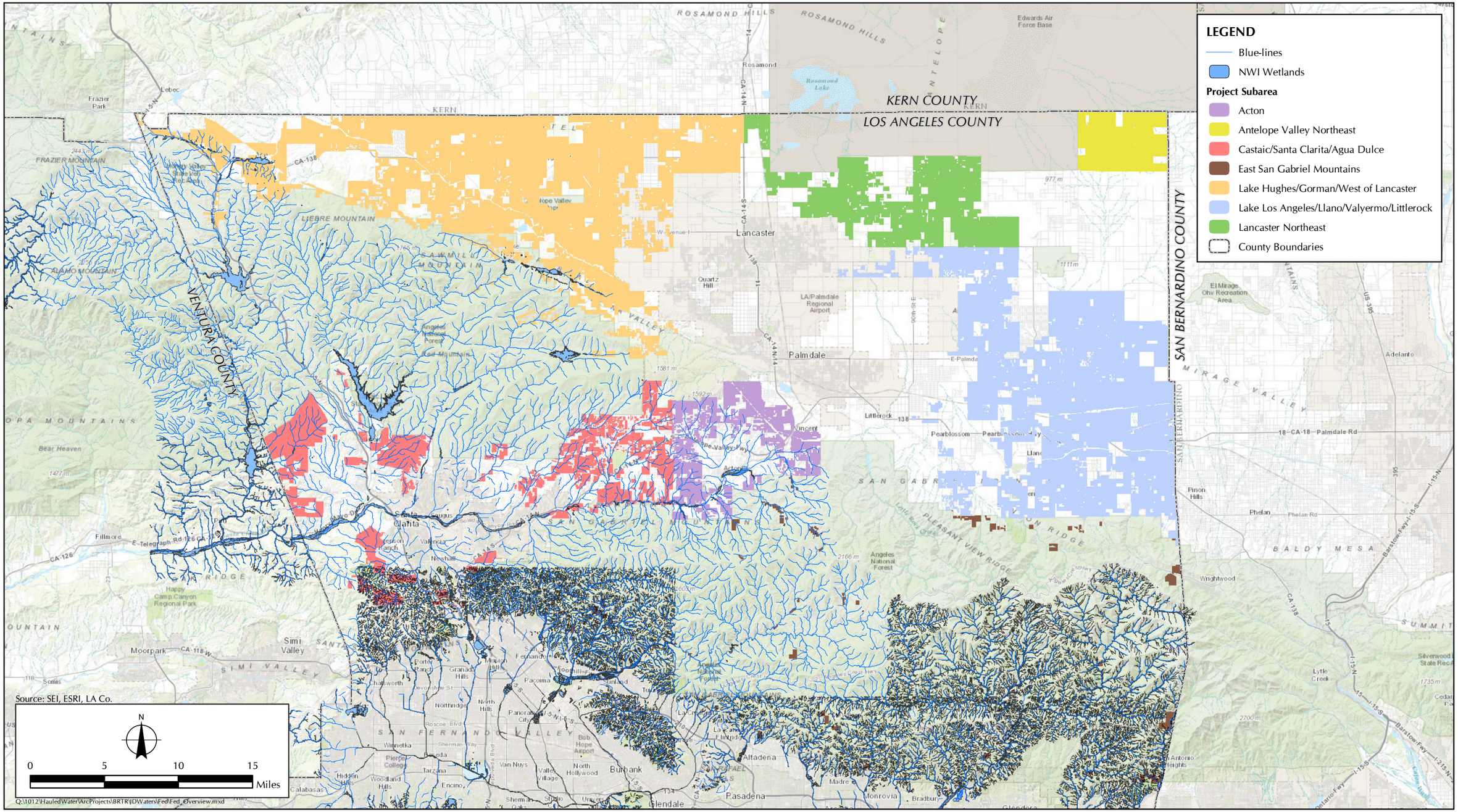


FIGURE 5.1.3-1

Federal Waters of the United States Potentially Present Within the Proposed Initiative Subareas

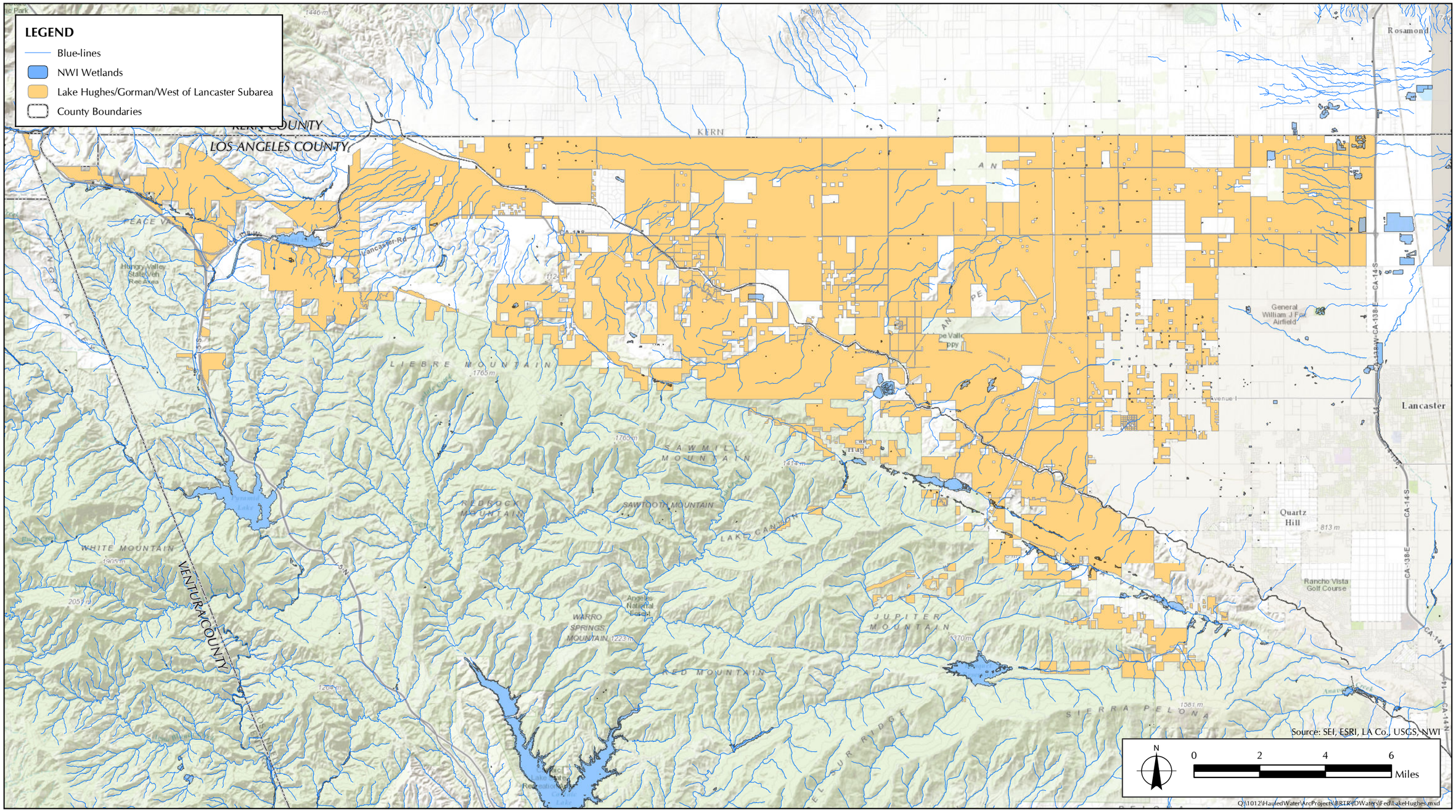


FIGURE 5.1.3-1A

Federal Waters of the United States Potentially Present Within the Proposed Initiative Subareas
Lake Hughes/Gorman/West of Lancaster Subarea

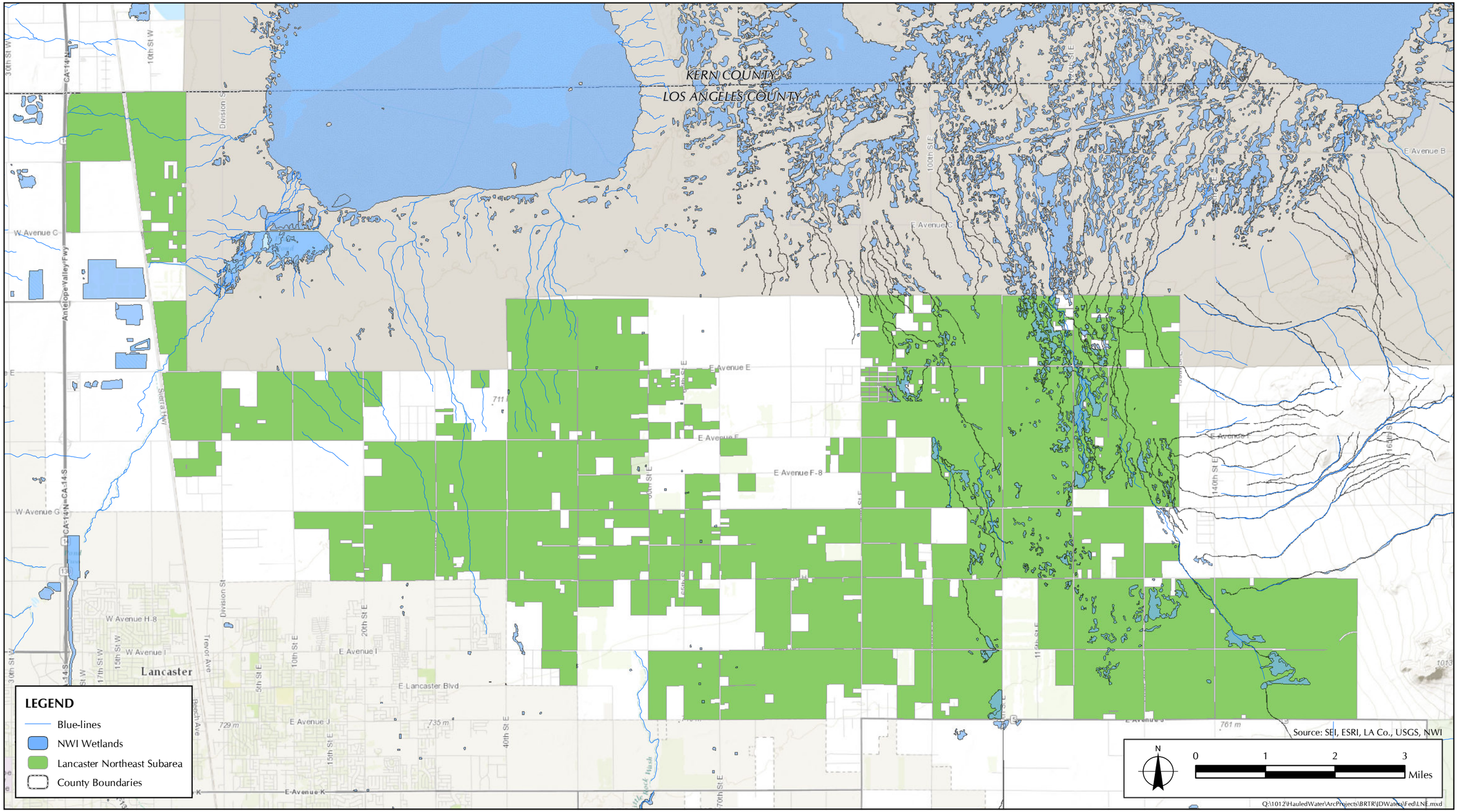


FIGURE 5.1.3-1B

Federal Waters of the United States Potentially Present Within the Proposed Initiative Subareas
Lancaster Northeast Subarea

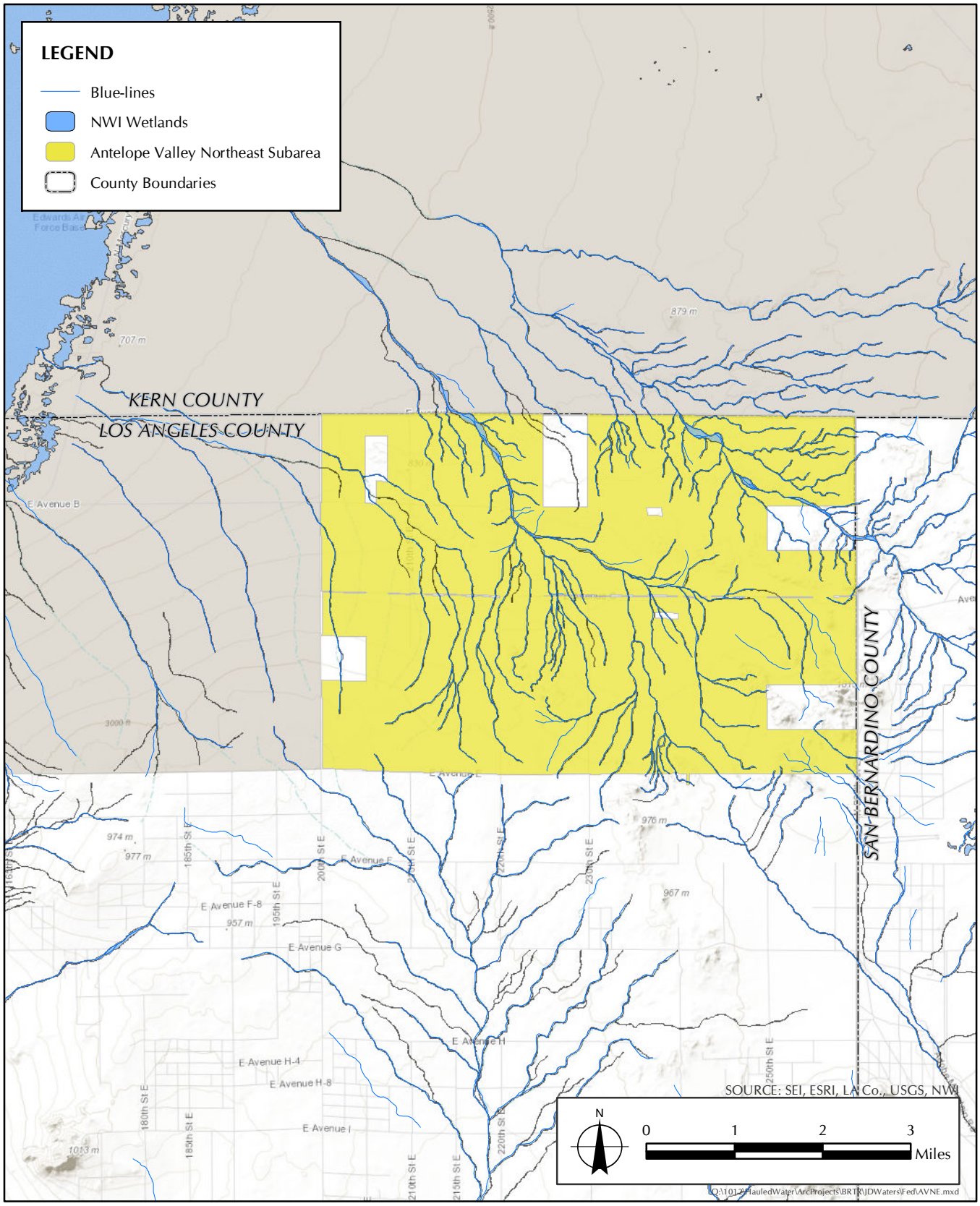


FIGURE 5.1.3-1C

Federal Waters of the United States Potentially Present Within the Proposed Initiative Subareas
Antelope Valley Northeast Subarea

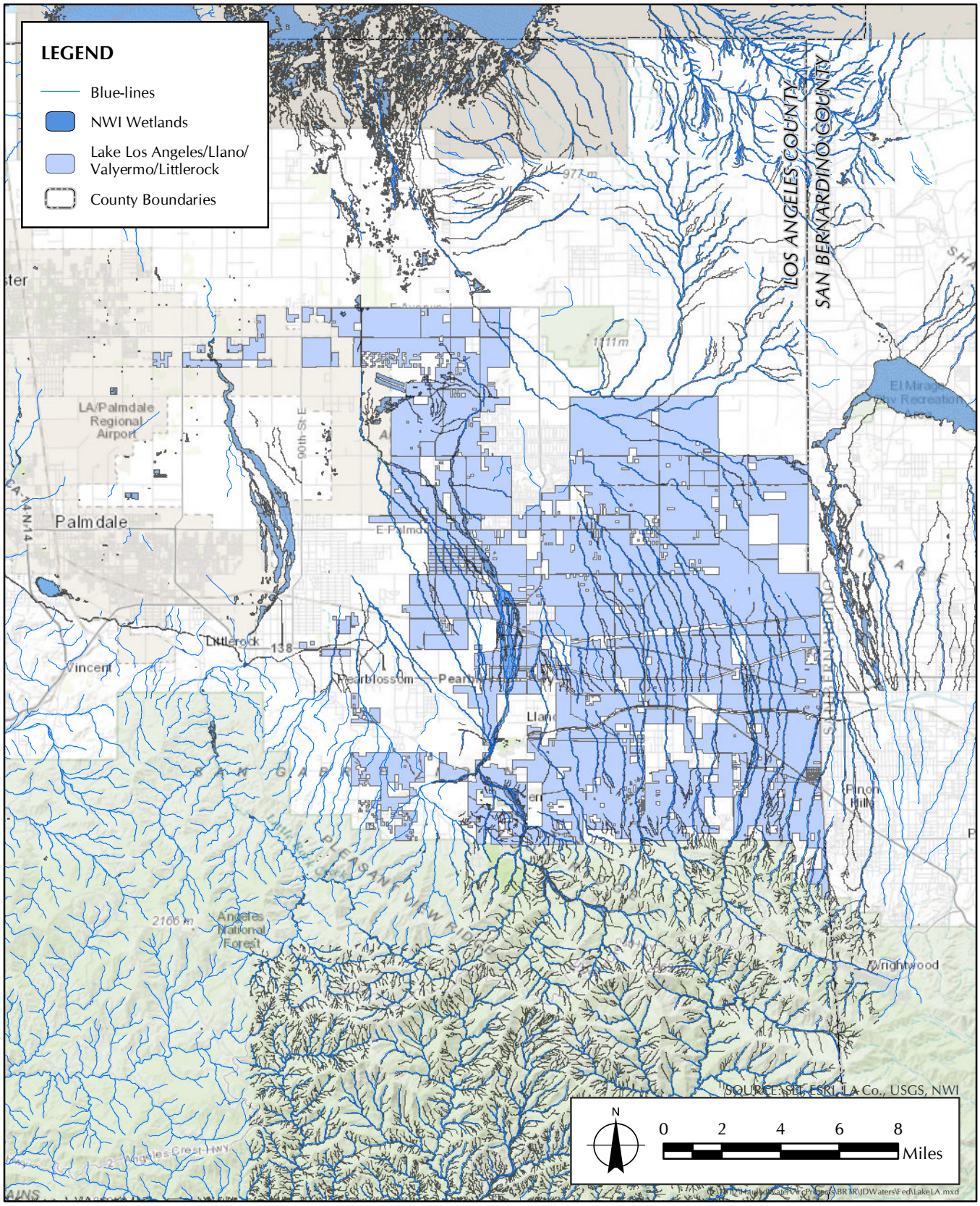


FIGURE 5.1.3-1D

Federal Waters of the United States Potentially Present Within the Proposed Initiative Subareas

Lake Los Angeles/Llano/Valyermo/Littlerock Subarea

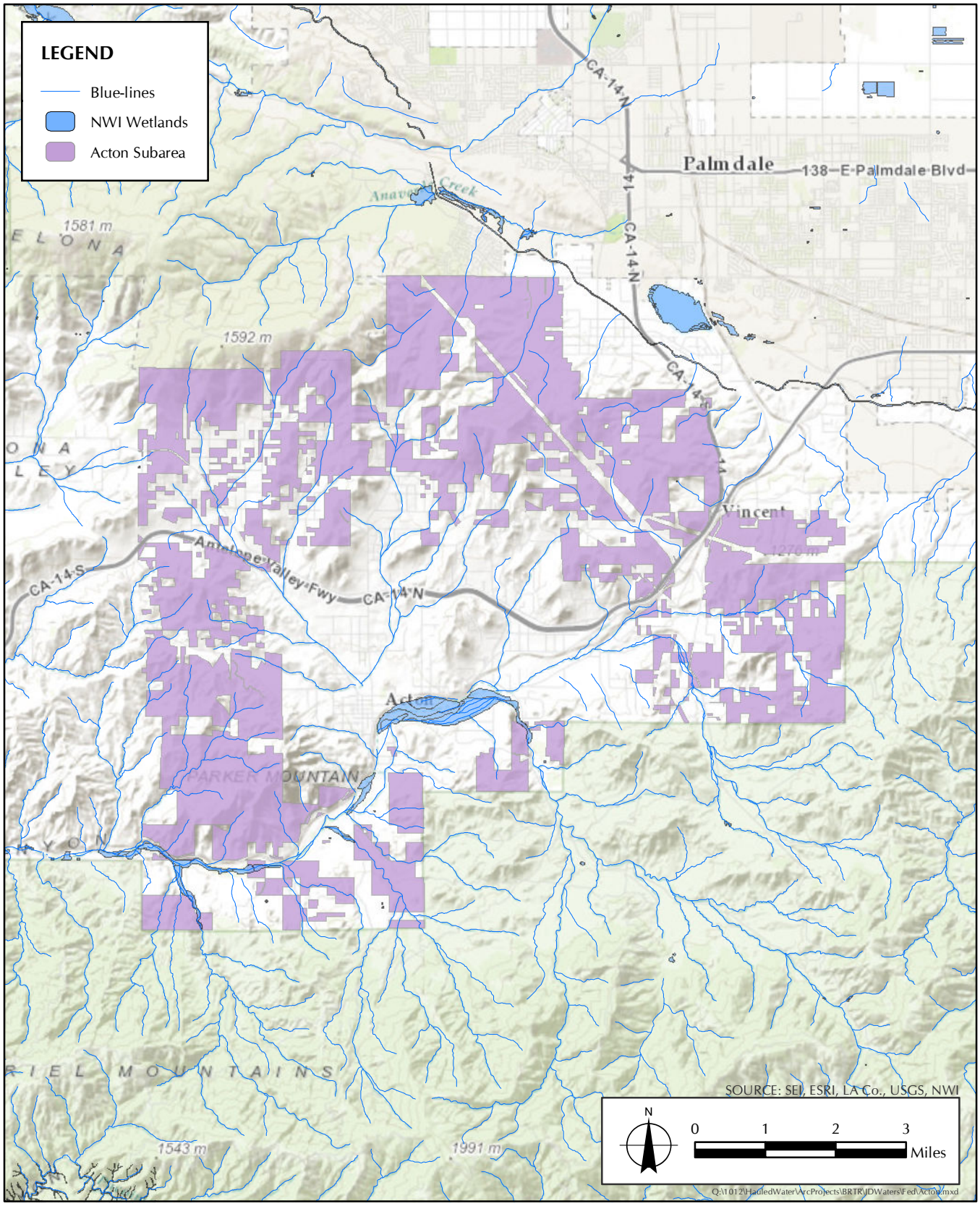


FIGURE 5.1.3-1E

Federal Waters of the United States Potentially Present Within the Proposed Initiative Subareas
Acton Subarea

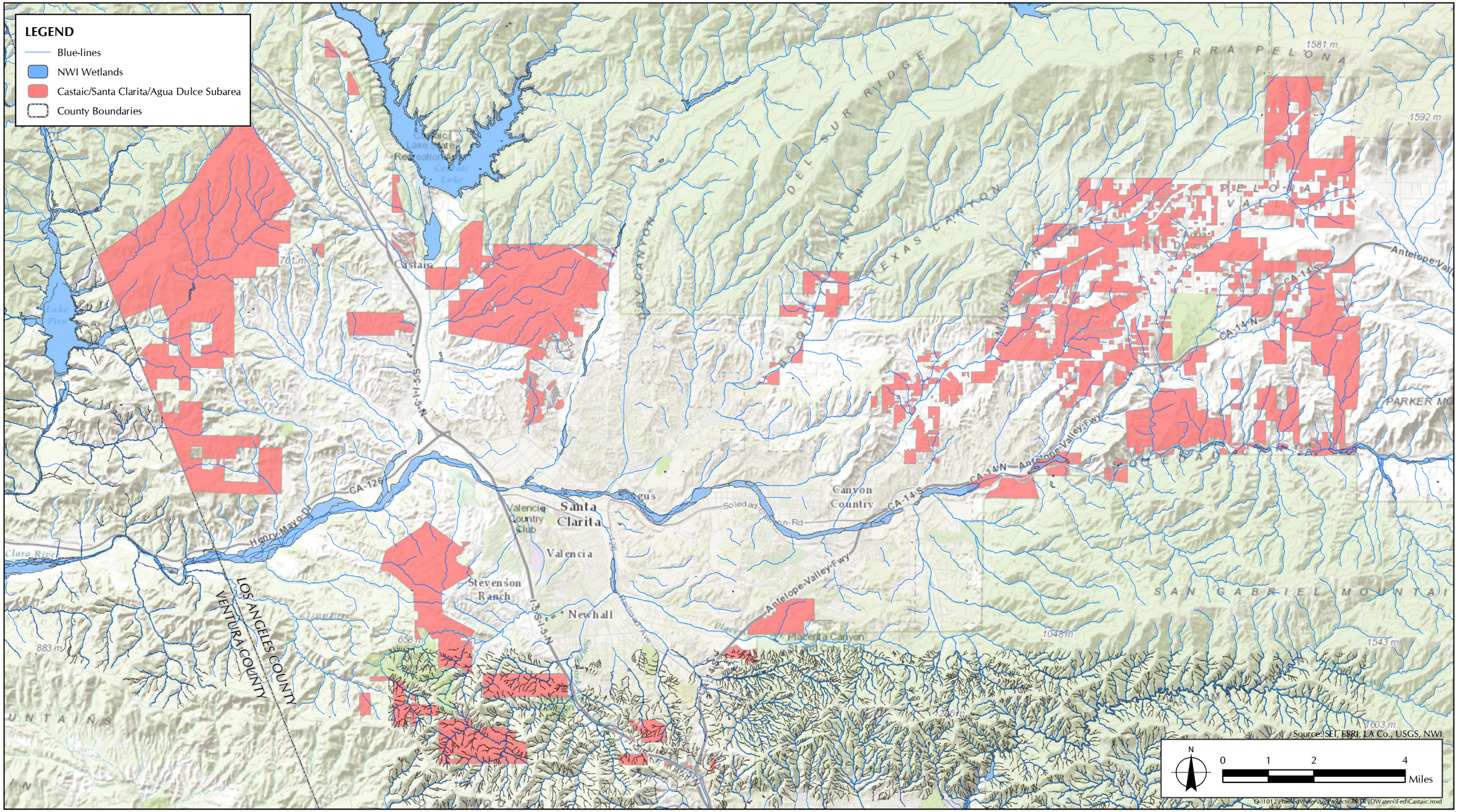


FIGURE 5.1.3-1F

Federal Waters of the United States Potentially Present Within the Proposed Initiative Subareas
Castaic/Santa Clarita/Agua Dulce Subarea

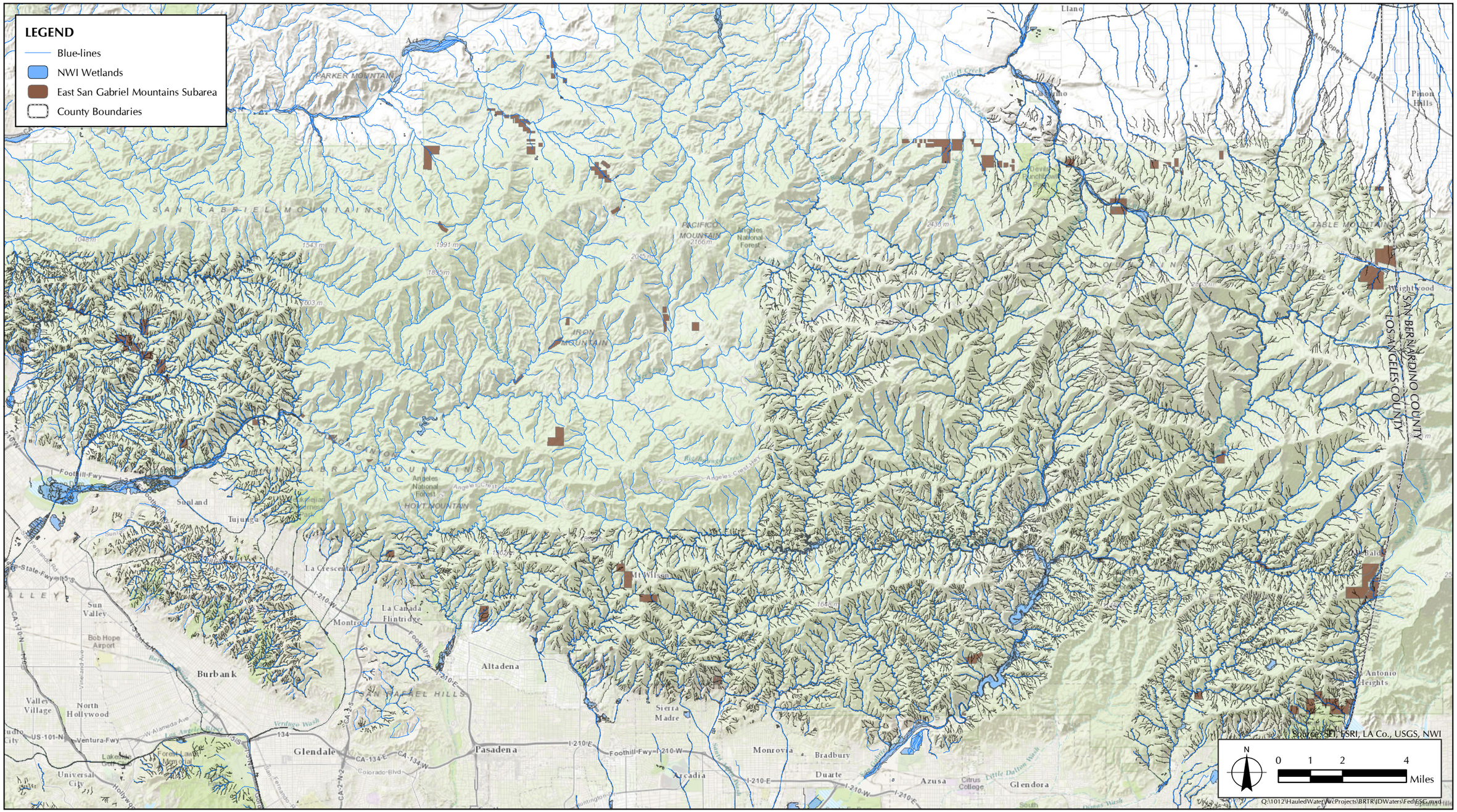


FIGURE 5.1.3-1G

Federal Waters of the United States Potentially Present Within the Proposed Initiative Subareas
East San Gabriel Mountains Subarea

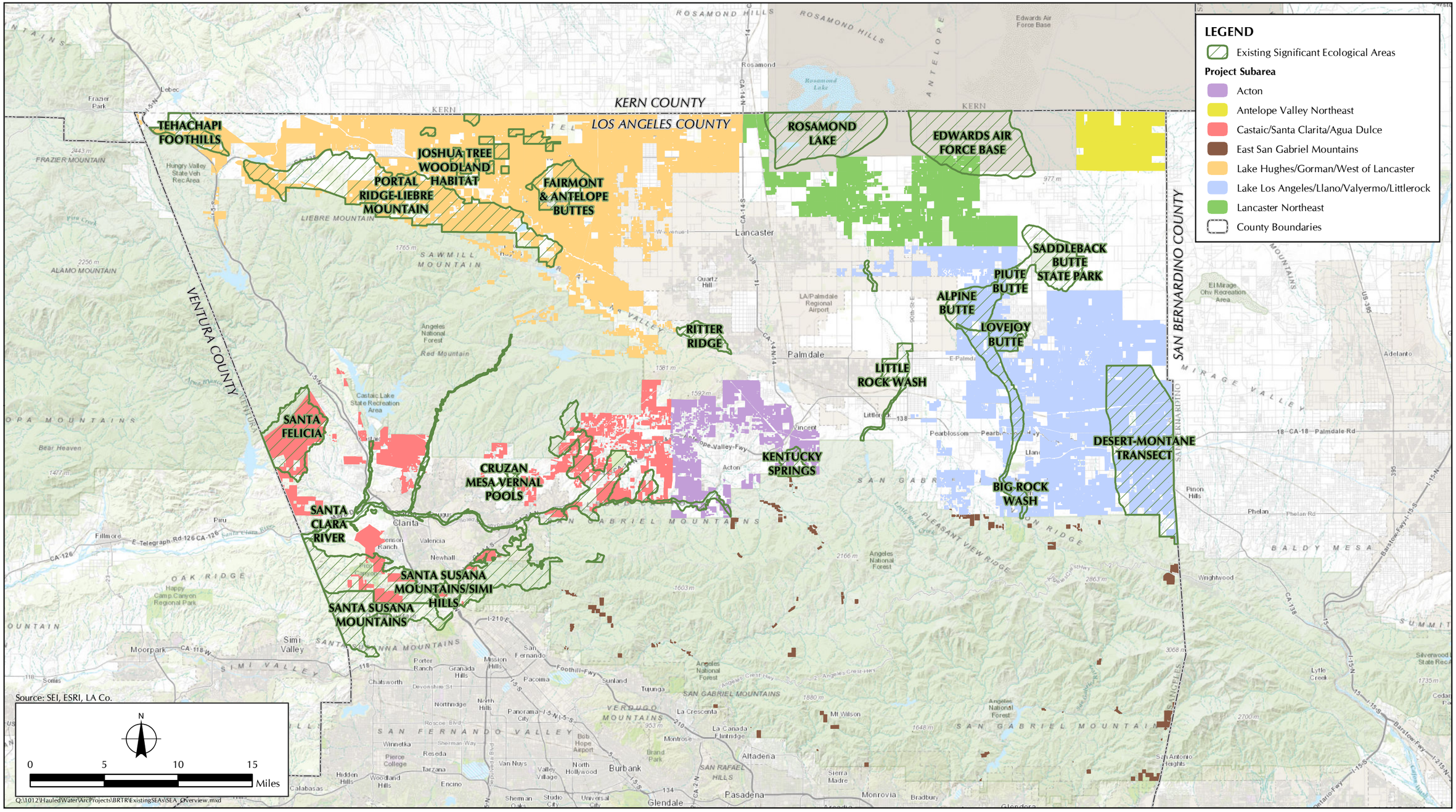


FIGURE 5.1.4-1

Proposed Initiative Subareas Located Within Existing SEAs

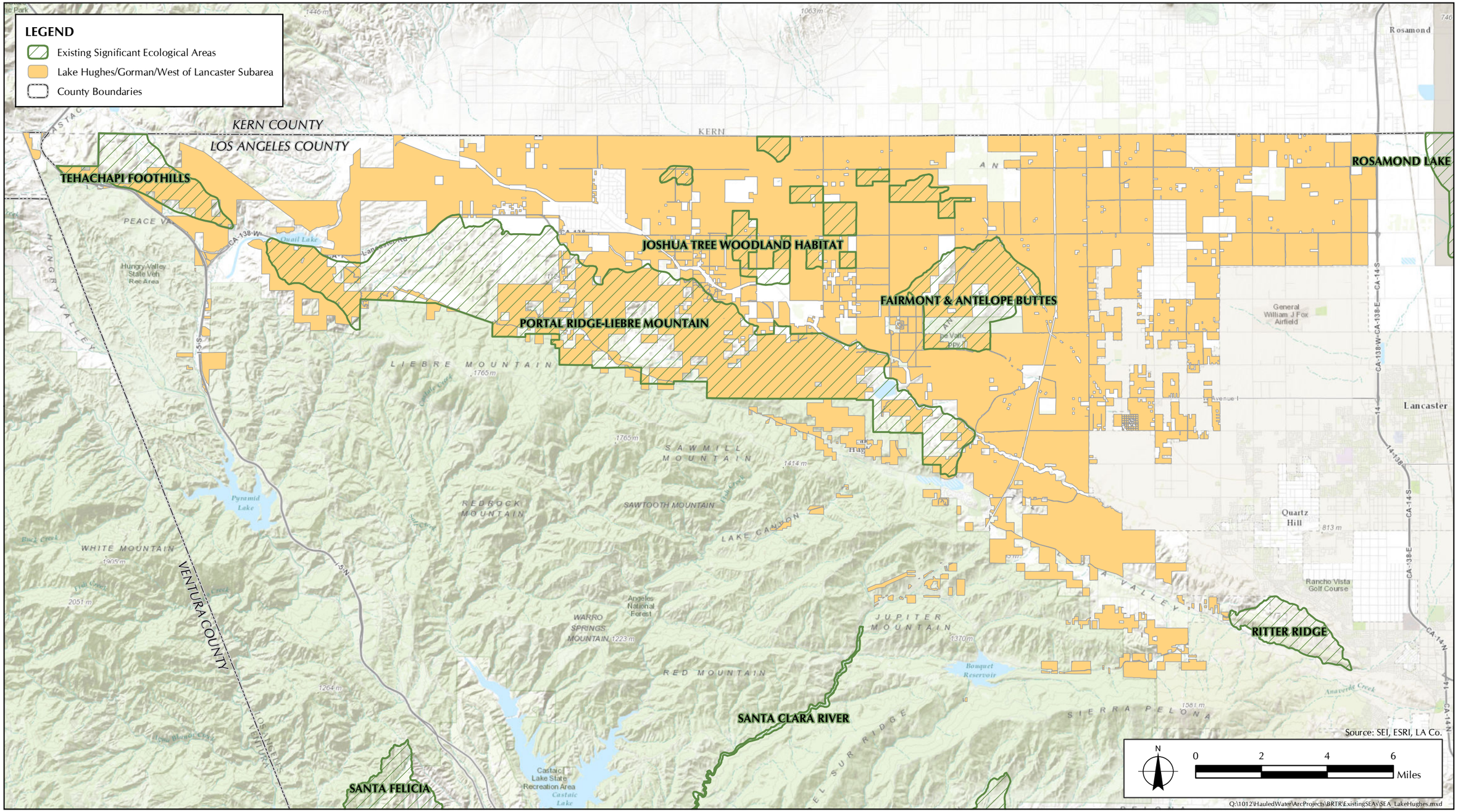


FIGURE 5.1.4-1A

Proposed Initiative Subareas Located Within Existing SEAs
Lake Hughes/Gorman/West of Lancaster Subarea

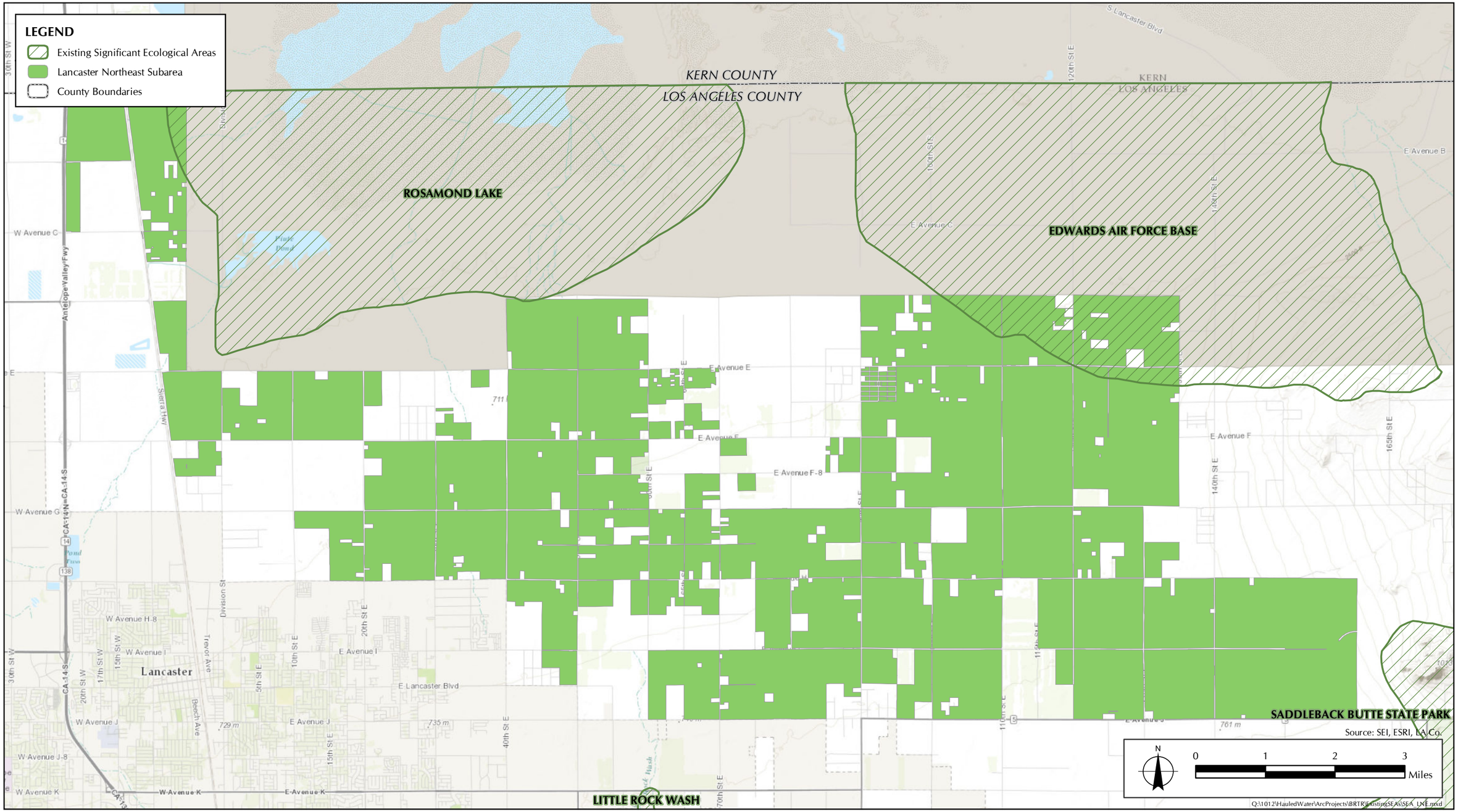


FIGURE 5.1.4-1B

Proposed Initiative Subareas Located Within Existing SEAs
Lancaster Northeast Subarea

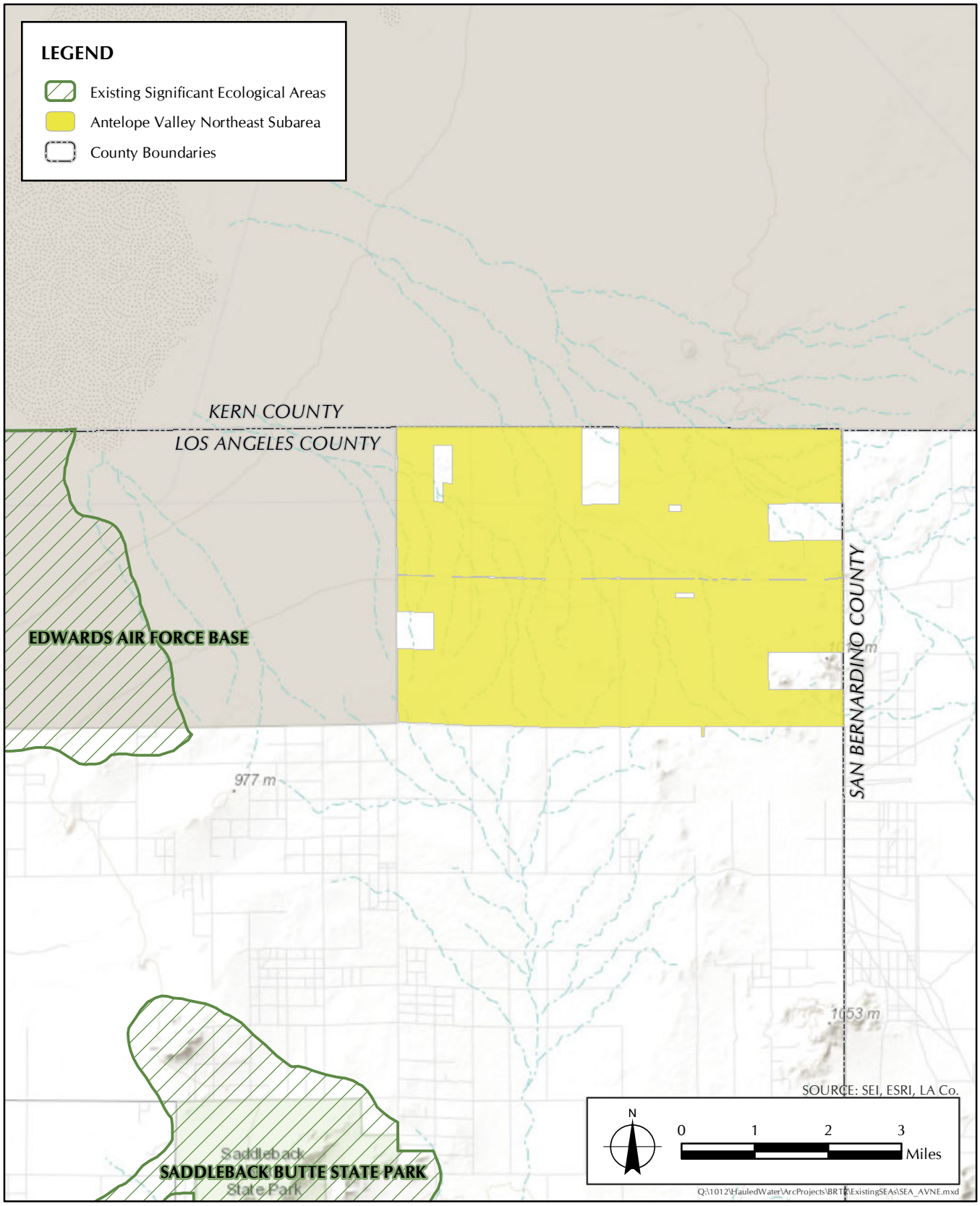


FIGURE 5.1.4-1C

Proposed Initiative Subareas Located Within Existing SEAs
Antelope Valley Northeast Subarea

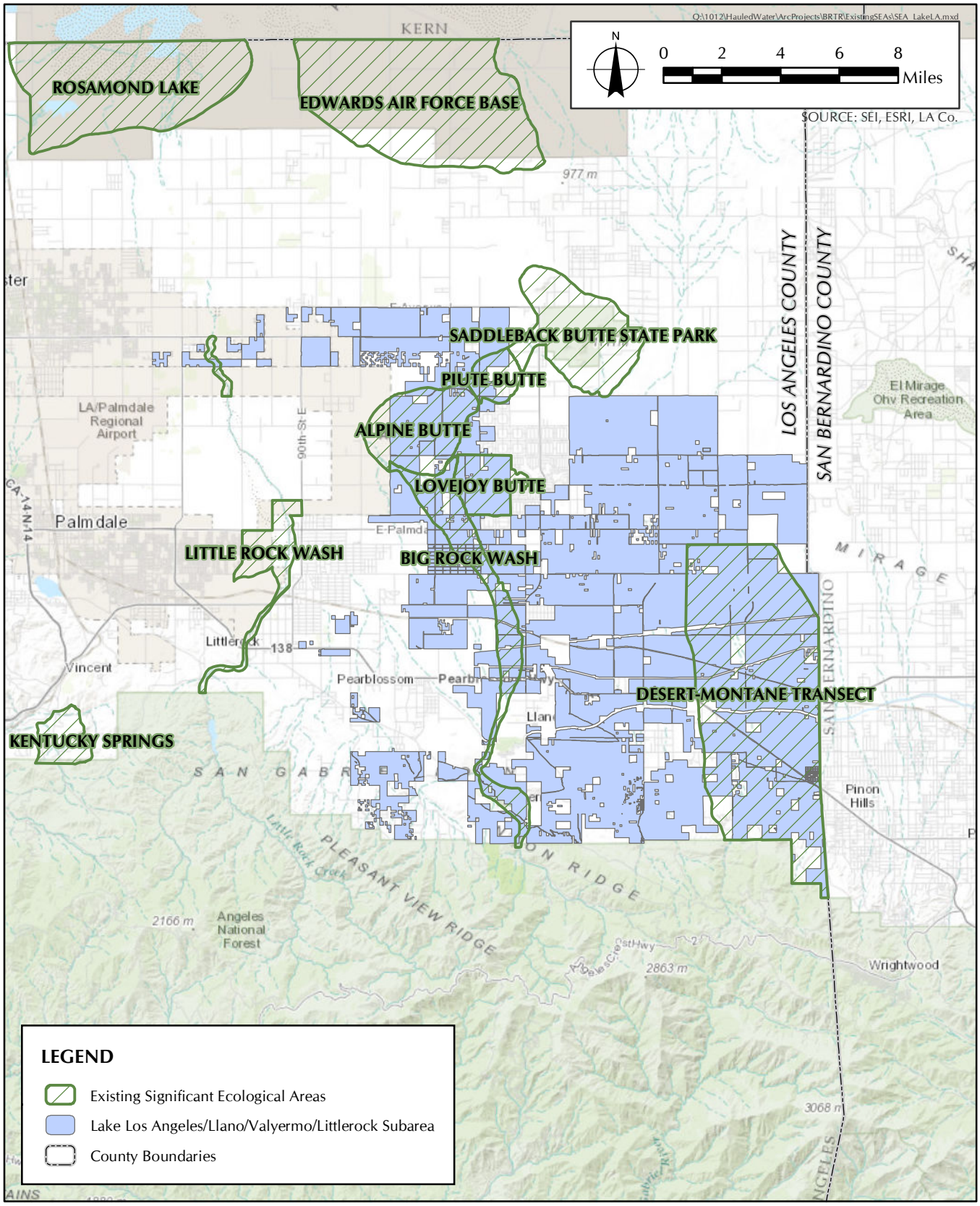


FIGURE 5.1.4-1D

Proposed Initiative Subareas Located Within Existing SEAs
Lake Los Angeles/Llano/Valyermo/Littlerock Subarea

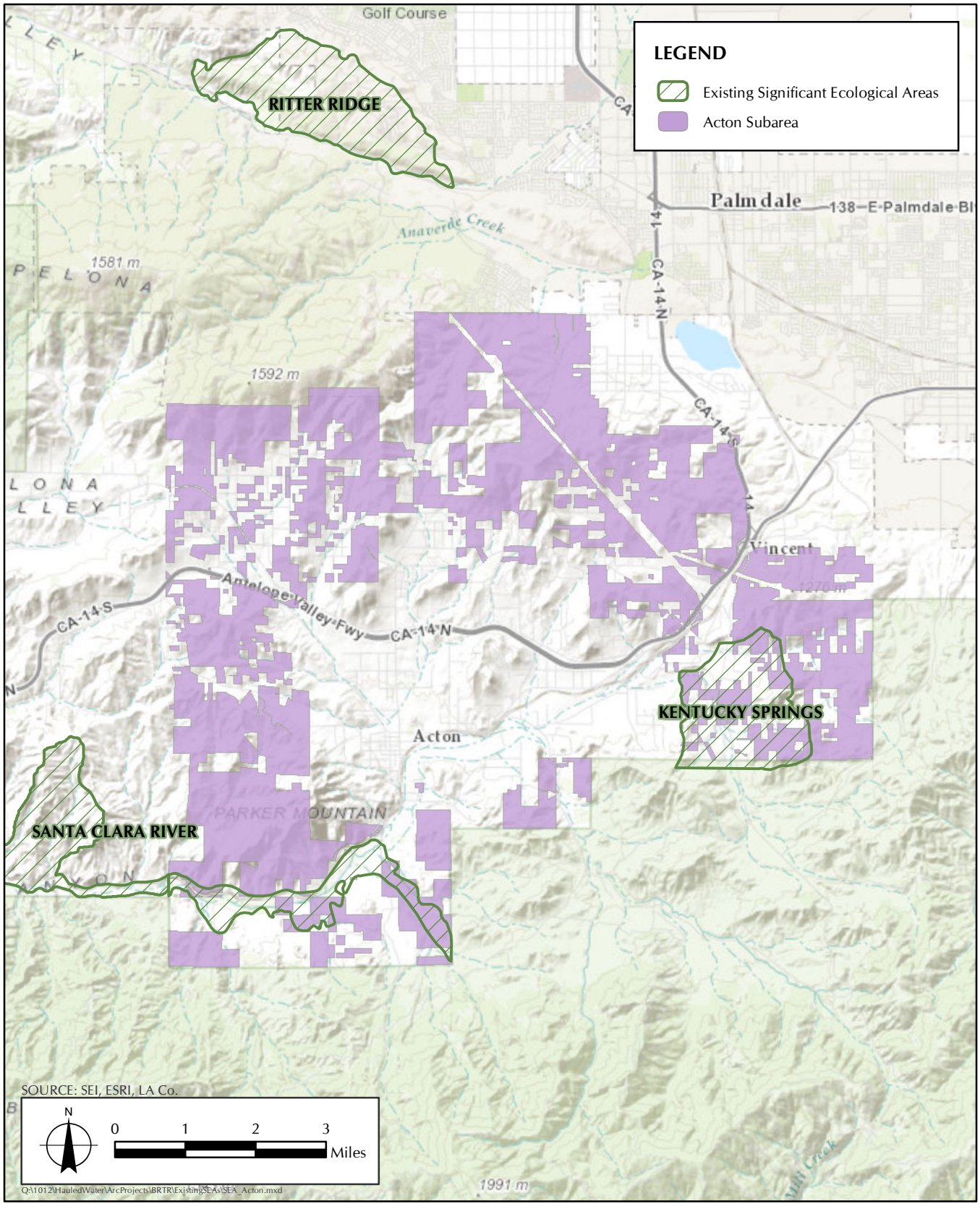


FIGURE 5.1.4-1E

Proposed Initiative Subareas Located Within Existing SEAs
Acton Subarea

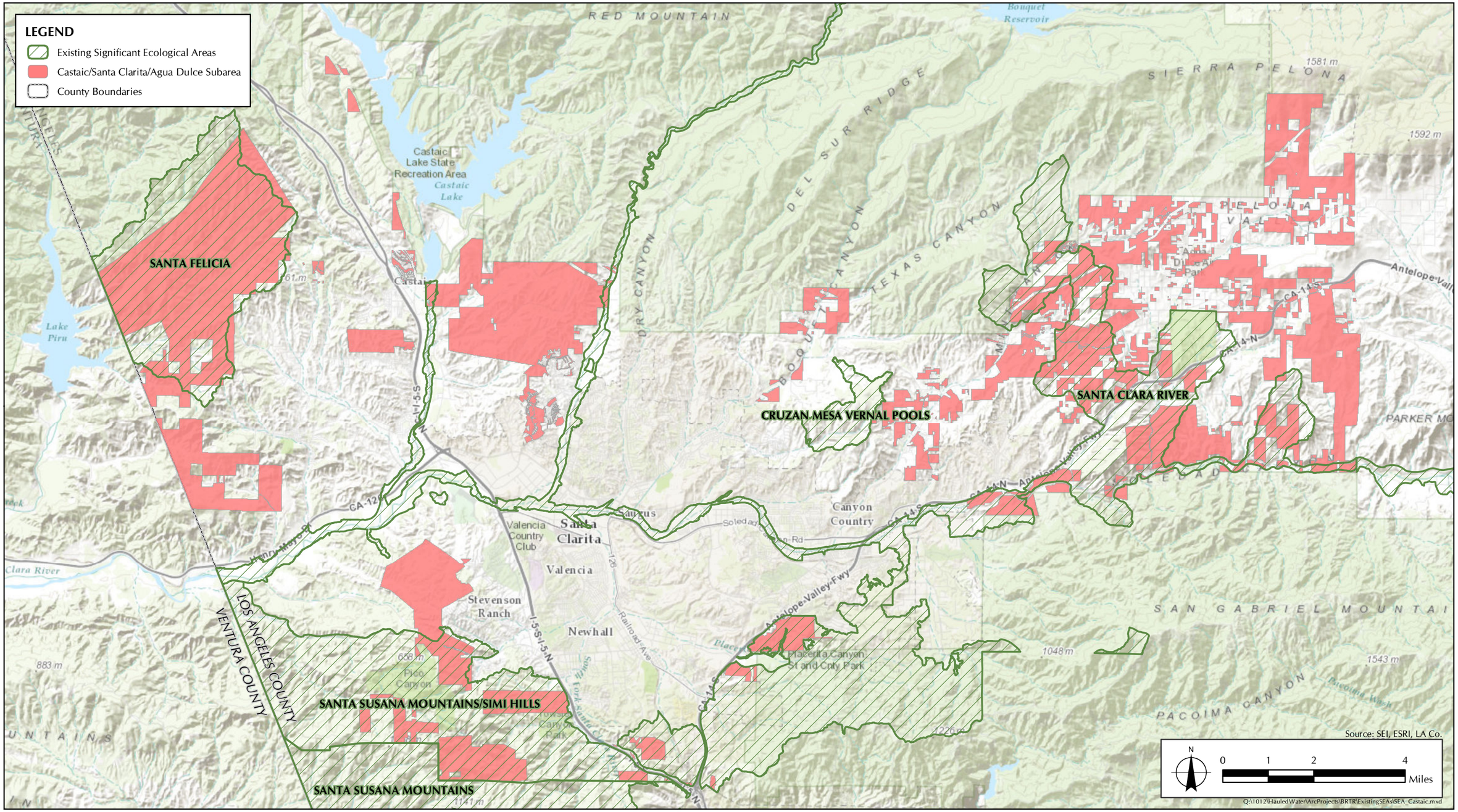


FIGURE 5.1.4-1F

Proposed Initiative Subareas Located Within Existing SEAs
Castaic/Santa Clarita/Agua Dulce Subarea

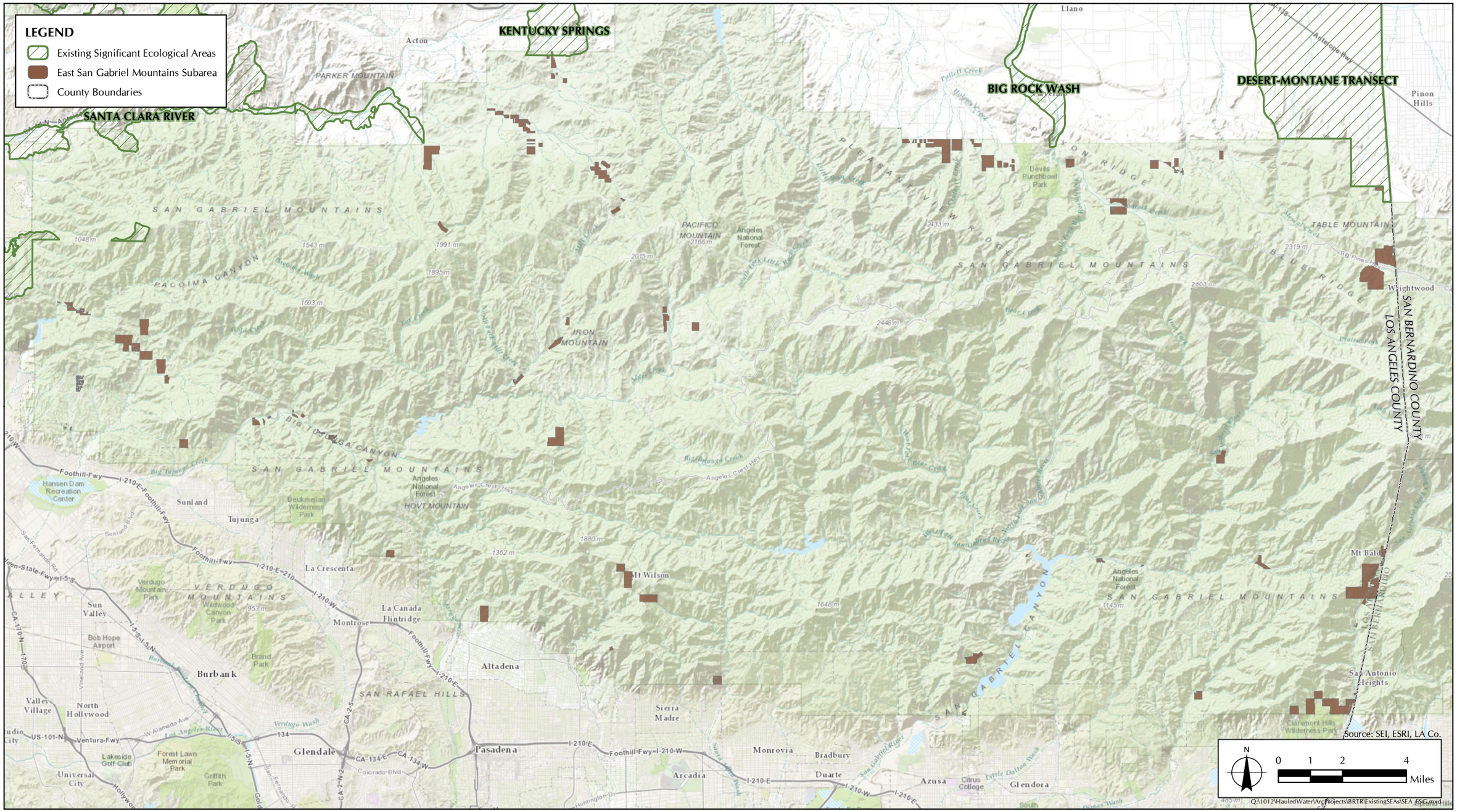


FIGURE 5.1.4-1G

Proposed Initiative Subareas Located Within Existing SEAs
East San Gabriel Mountains Subarea

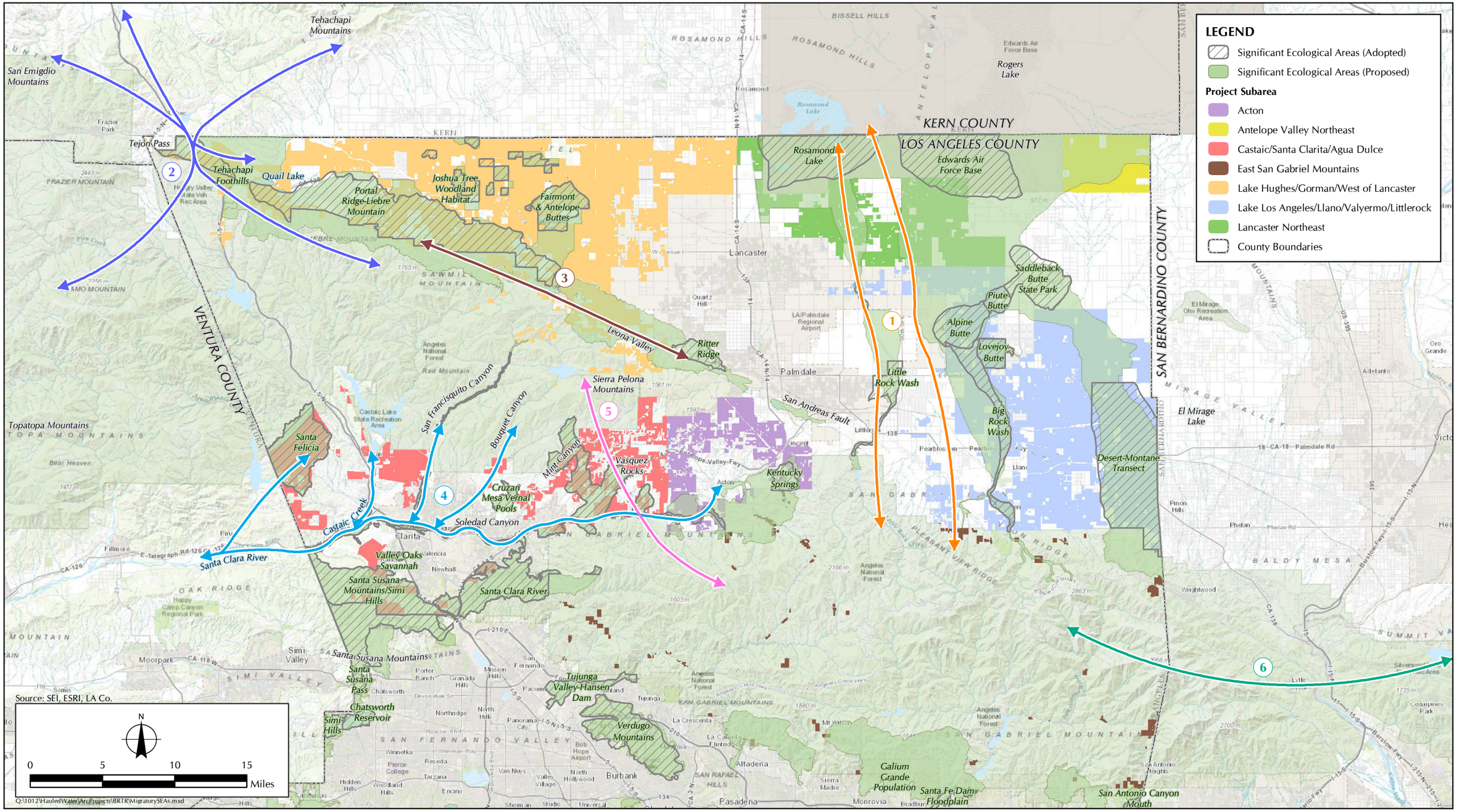


FIGURE 5.1.4-2

Migratory Corridors Potentially Present within the Proposed Initiative Subareas

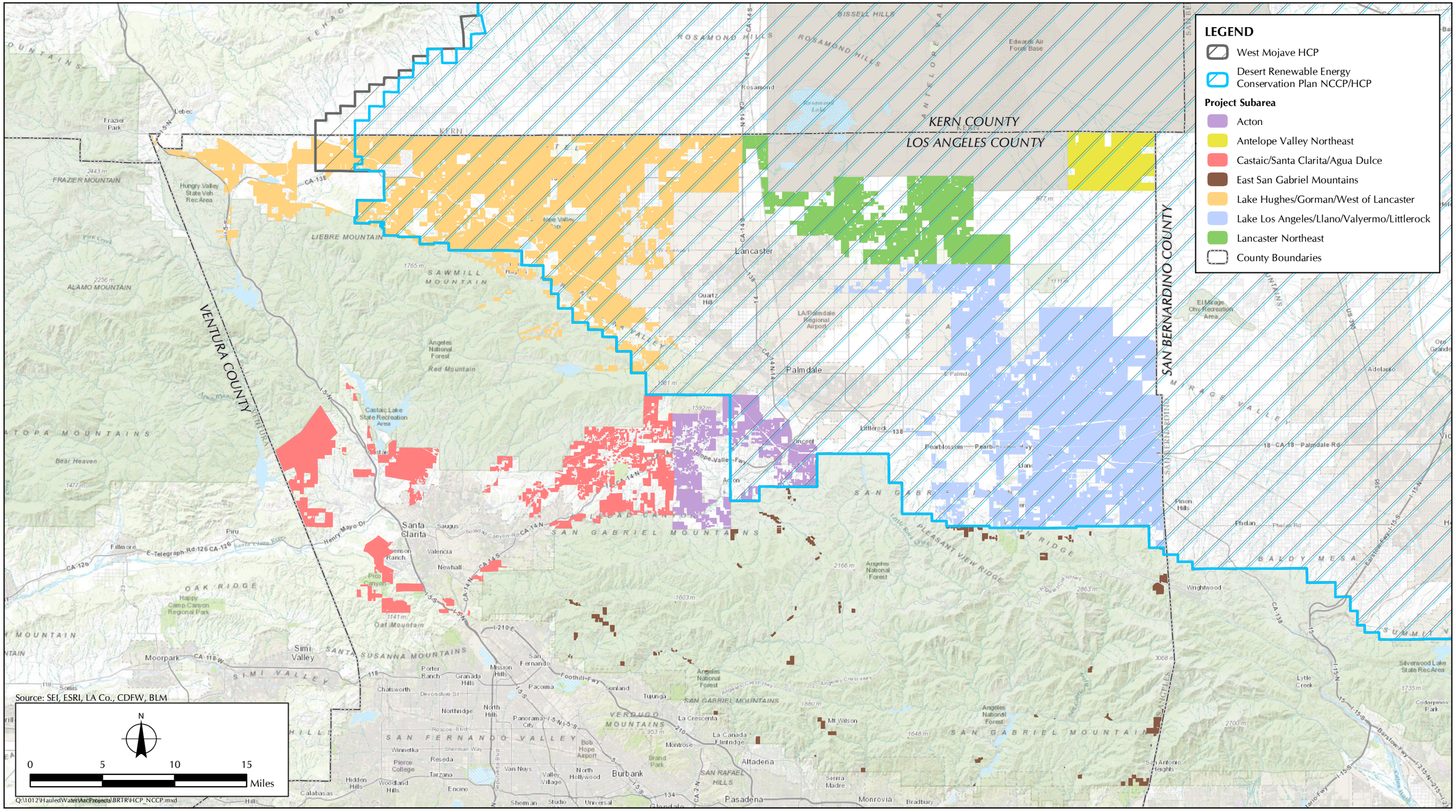


FIGURE 5.1.6-1

HCPs and NCCPs Present Within the Proposed Initiative Subareas

SECTION 6.0
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