CASTAIC AREA MULTI-USE TRAILS PLAN

INITIAL STUDY
AND
PROPOSED MITIGATED NEGATIVE DECLARATION

Volume II
Appendices A–C

Prepared for:

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May 13, 2016

Appendix A

Aesthetics Assessment

Sapphos environmental inc.

May 13, 2016
Job Number: 1020-085
Castaic Area Multi-Use Trails Plan

MEMORANDUM FOR THE RECORD
2.6 1020-085.M09

TO: County of Los Angeles
Department of Parks and Recreation
(Ms. Olga Ruano, Mr. Zachary Likins, and Mr. Frank Moreno)

FROM: Sapphos Environmental, Inc.
(Ms. Laura Male)

SUBJECT: Castaic Area Multi-Use Trails Plan Aesthetics Assessment

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2. Local Vicinity Map
3. Castaic Project Area Location, Existing Trails, and Adopted Proposed Trails
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14. Viewshed Map – Pacific Crest National Scenic Trail
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16. Viewshed Map – County Designated Town and Country Scenic Drives

APPENDIX:
A. Key Observation Points

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EXECUTIVE SUMMARY

This Memorandum for the Record (MFR) documents the results of the evaluation of aesthetics that was undertaken in support of the proposed Castaic Area Multi-Use Trails Plan (proposed project). The MFR will inform the County of Los Angeles, serving in the capacity of a Lead Agency, pursuant to the California Environmental Quality Act (CEQA). Based on the results of a site visit, viewshed analysis, and map review conducted by Sapphos Environmental, Inc., the construction, recreational use, and maintenance activities associated with the proposed project would have the potential to result in impacts to aesthetics that would be mitigated to below the level of significance with mitigation measures. The analysis includes characterization of the existing conditions for aesthetics in relation to scenic vistas, scenic resources, visual character and quality, and light and glare. The analysis considered potential for the designation, construction, use, and maintenance of trails within the Castaic project area to impact aesthetics in relation to scenic vistas, scenic resources, visual character and quality of the site and its surroundings, and light and glare. The characterization of the baseline conditions for aesthetics and consideration of applicable federal, state, and local statutes and regulations resulted in a determination that the designation, construction, operation, and maintenance of the proposed project (at the programmatic level of analysis) would be expected to result in impacts to aesthetics that are below the level of significance.

Scenic Vistas

The proposed project would not result in impacts to aesthetics in regard to a substantial adverse effect on a scenic vista because there are no designated scenic vista points within the Castaic project area; nor is the Castaic project area visible from scenic vista points designated within the Los Angeles County General Plan 2035 or by Caltrans.[1,2]

Regional Riding and Hiking Trails

The proposed project would result in less than significant impacts to aesthetics in regard to visibility from a regional riding or hiking trail because although the proposed project would potentially be barely visible from the nearby Pacific Crest National Scenic Trail (PCT), which is located approximately 8.5 miles north of the Castaic project area, it would not be expected to obstruct views due to intervening topography, trees, and shrubs, as well as the small scale of the proposed facilities. A viewshed analysis was conducted that determined that, based on topography, up to 17 percent of the Castaic project area would potentially be visible from the PCT with clear atmospheric conditions and no intervening trees or shrubs.

Scenic Resources within State Scenic Highway Corridors

The proposed project would result in significant impacts to aesthetics in regard to substantial damage to scenic resources within a state scenic highway corridor. Although the proposed project would not be visible from Officially Designated State Scenic Highways, the proposed project

[1] The County has designated scenic vistas in the Santa Monica Mountains land use plans, which are located more than 15 miles south of the Castaic project area. As the 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] Male, Laura, Sapphos Environmental, Inc. Pasadena, CA. 3 July 2015. Communication with Daniel Kitowski, Transportation Manager (GIS), California Department of Transportation.

would be located within the nearest Eligible State Scenic Highway corridors – Henry Mayo Drive (State Route 126) and the Golden State Highway (Interstate 5). Implementation of Mitigation Measure AES-1 is required to reduce impacts to scenic resources within the state scenic highway corridors to less than significant.

Visual Character and Quality

The proposed project would result in less than significant impacts to aesthetics in regard to substantial degradation of the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features. Trails and related supporting facilities would generally not be expected to substantially degrade the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, or character because they would be low to the ground, spaced and designed in a pattern that follows the natural topography and existing paved and dirt roads, and be consistent with the scale and character of the rural Castaic project area that already contains several dirt access roads and fire roads throughout the mountainous and hilly terrain.

Shadows, Light, and Glare

The proposed project would result in less than significant impacts to aesthetics in relation to the creation of a new source of substantial shadows, light or glare. Although the hours of operation for Los Angeles County trails are typically from dawn to dusk (County Code 17.04.330). Where lighting features are provided for safety and wayfinding reasons, lighting would be installed in a manner to be nonintrusive to adjacent uses, avoid detracting from a natural outdoors experience for trail users, and directed downward to avoid light pollution or spillover in general, in accordance with the guidelines of the County Trails Manual.[3]

[3] County of Los Angeles Department of Parks and Recreation. [Adopted 17 May 2011] Revised June 2013. *County of Los Angeles Trails Manual*. Available at: https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

INTRODUCTION

This MFR provides the County of Los Angeles Department of Parks and Recreation (County) with the substantial evidence used to make a determination that there would be no significant and unavoidable impacts in regard to scenic vistas regional trails, state scenic highways, visual character or quality, and shadows/light and glare related to the designation, construction, operation and maintenance of trails from the proposed project. The Castaic Area Multi-Use Trails Plan constitutes a project pursuant to Section 21065 of the CEQA Statute because it would be an activity directly undertaken by a public agency that may cause a reasonably foreseeable indirect physical change in the environment. This MFR provides the requisite information related to aesthetics to support the County's decision-making process in relation to the proposed project: regulatory framework; existing conditions; thresholds of significance; and the consideration of the potential for direct, indirect, and cumulative impacts in accordance with the County of Los Angeles Department of Parks and Recreation's Environmental Checklist Form and Appendix G of the State CEQA Guidelines.[4] The scope of analysis considered the potential for impacts on aesthetics from the proposed project in relation to scenic vistas; views from existing regional trails; scenic resources within a scenic highway corridor; visual character and quality of the site and its surroundings; and shadows, light, and glare. The County of Los Angeles Trails Manual was consulted for ability of the proposed project to meet the County's objectives related to the visual and aesthetic experience of recreation users and adjacent land uses. As the proposed project is a plan, the analysis was conducted a programmatic level of detail, consistent with the provisions of the State CEQA Guidelines.

Purpose

The purpose of this MFR is to support the County in the development of a multi-use trail plan that would minimize the aesthetics impacts on the surrounding community. It is understood that the County expects to move forward with the proposed project and seek funding for construction, operation, and maintenance of the proposed project. The evaluation of the proposed project to result in significant impacts to aesthetics was undertaken in accordance with Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines, the County of Los Angeles Trails Manual, and the Los Angeles County General Plan.

LOCATION

The Castaic project area, which encompasses approximately 78 square miles (approximately 50,000 acres) in the Castaic area of the Santa Clarita Valley, is located in the northwestern portion of the unincorporated area of the County of Los Angeles (Figure 1, *Regional Vicinity Map*). The Castaic project area is bound by the Angeles National Forest to the north, the City of Santa Clarita to the southeast, Highway 126 to the south, and Ventura County to the west (Figure 2, *Local Vicinity Map*). The Castaic project area includes three existing County trails (approximately 4.9 miles) and approximately 74.7 miles of adopted County Trail System proposed trails (Figure 3, *Castaic Project Area Location, Existing Trails, and Adopted Proposed Trails*).

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

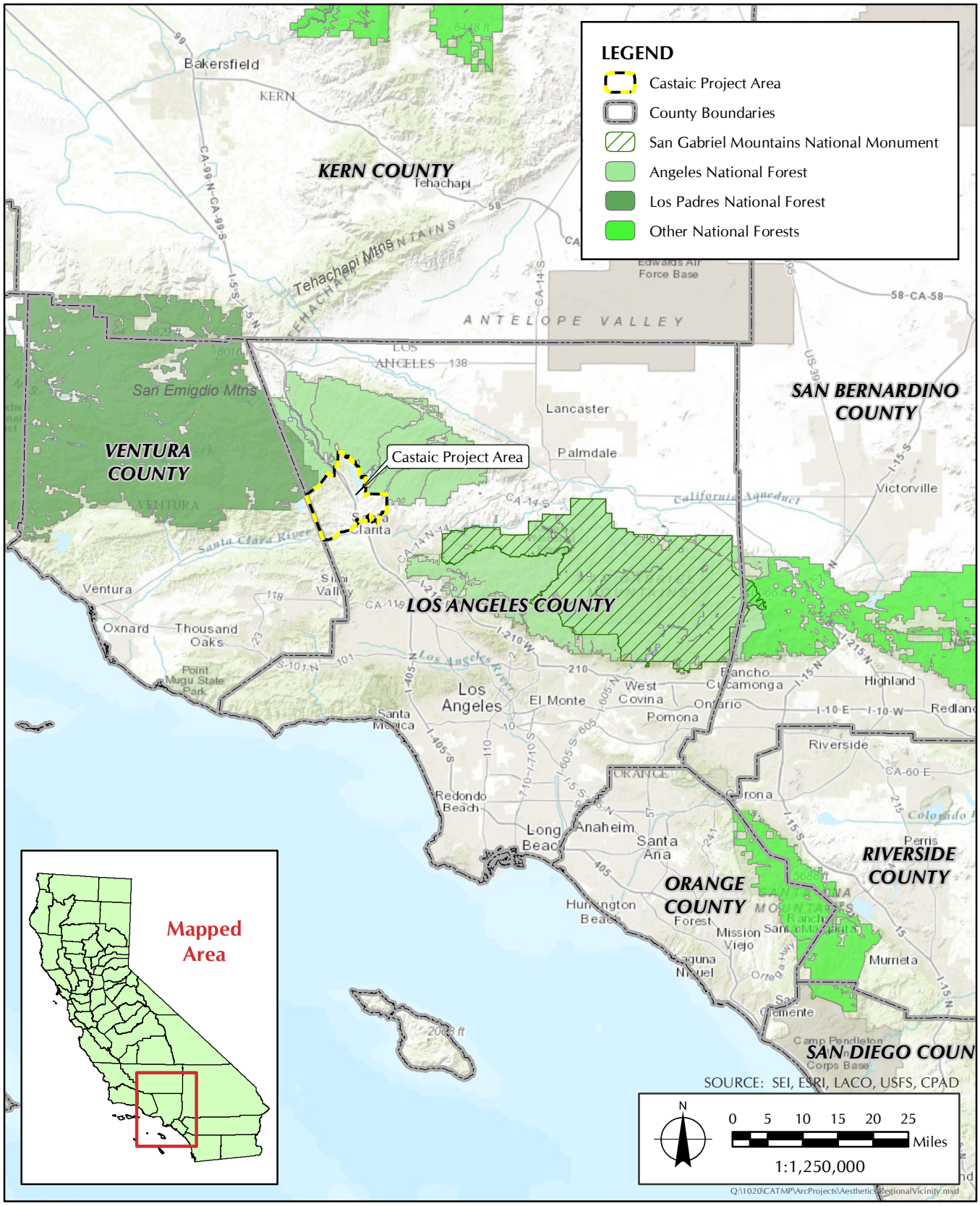

FIGURE 1

Regional Vicinity Map

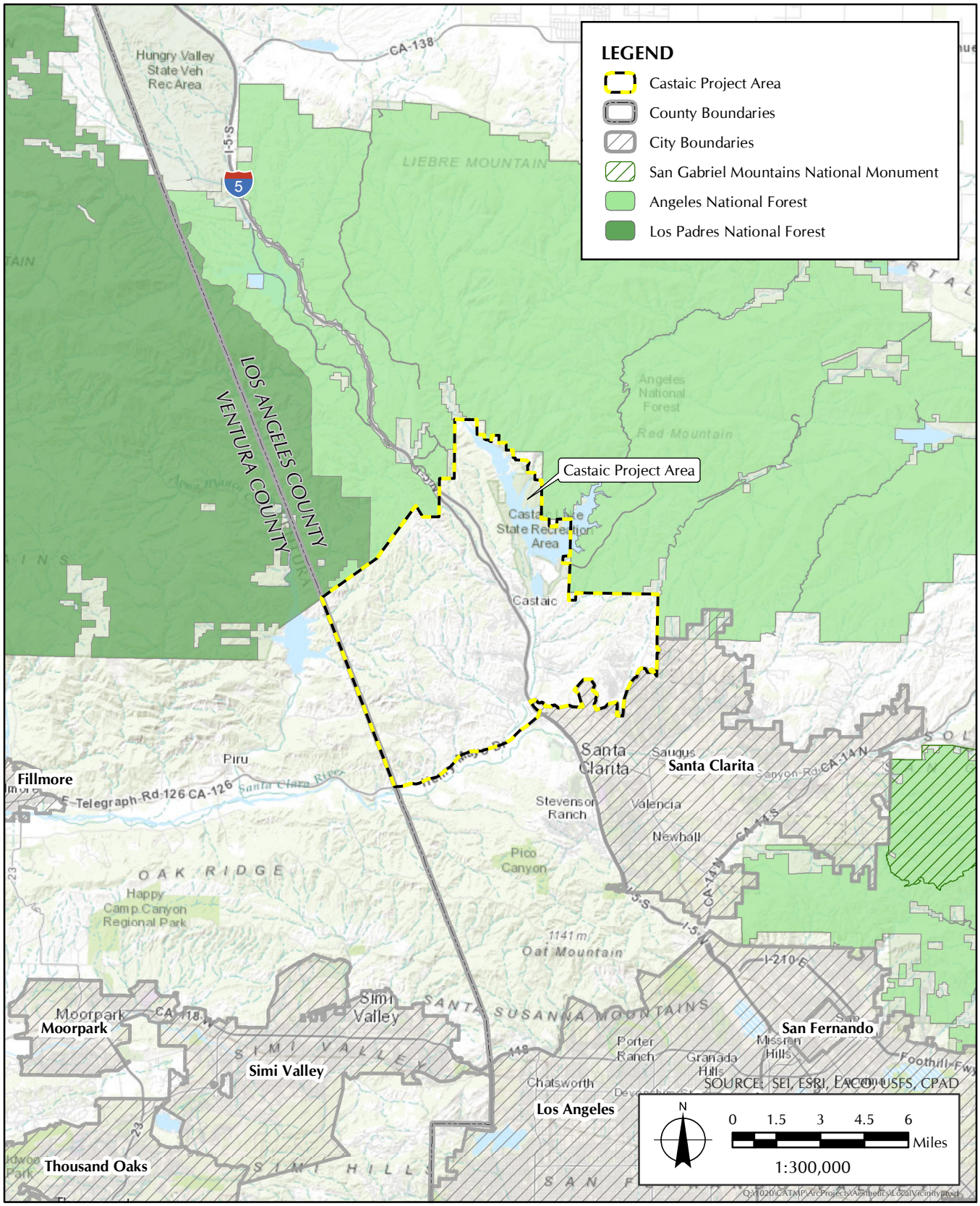

FIGURE 2

Local Vicinity Map

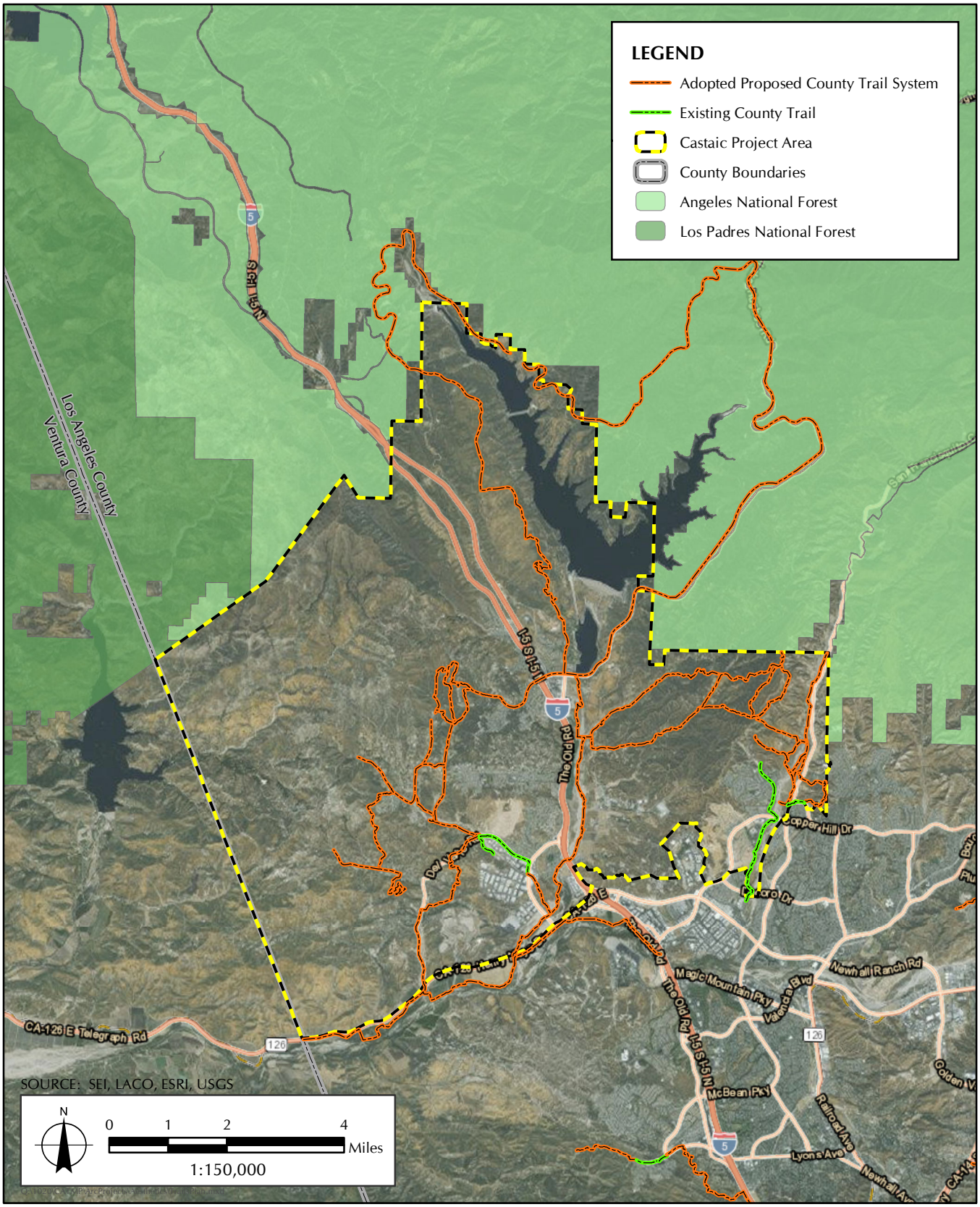

FIGURE 3

Trail Planning Study Area Location, Existing Trails, and Adopted Proposed Trails

The Santa Clarita Valley is centrally located between the San Gabriel Mountains to the east, Sierra Pelona Mountains to the northeast, the Topatopa Mountains to the west, the San Emigdio Mountains and Tehachapi Mountains to the north, and the Santa Susana Mountains and Santa Monica Mountains to the south within the Transverse Ranges, a group of east-west trending mountains paralleling the Pacific Ocean between Santa Barbara and San Diego Counties.[5] The Castaic project area is located on the U.S. Geological Survey (USGS) 7.5-minute series Whitaker Peak, Warm Springs Mountain, Val Verde, and Newhall topographic quadrangles (Figure 4, *Topographic Maps*). The elevation of the Castaic project area ranges from approximately 863 feet above mean sea level (MSL) in the Santa Clara River bed at the southern edge of the Castaic project area to approximately 2,756 feet above MSL along the northern edge of the Trail Planning Area, approximately 0.7 mile southwest of Interstate 5. Loma Linda Peak, at an elevation of approximately 2,494 feet above MSL, is located between Santa Felicia Canyon and Romero Canyon, approximately 0.2 mile south of the northern edge of the Val Verde topographic quadrangle.

PROJECT DESCRIPTION

The proposed project would work to encourage and promote new multi-use trails and recommend improvements to existing trails, providing an alignment to incorporate a transition throughout the Castaic project area to additional areas, jurisdictions, and prime destinations within and adjacent to the Castaic project area. The plan would recommend conditions for improvement of unmet local recreation demands in the 5th Supervisorial District. The proposed project would develop a complete multi-use trail system connecting user groups and local populations to desired recreation destinations and experiences, with unified transition to the trails of adjacent jurisdictions, compatibility with adjacent land uses and environmental resources, and incorporate a sustainable design that is consistent with the County Trails Manual.

The proposed project includes approximately 100 miles of proposed multi-use trails and related staging areas, bike skills parks, parking areas, and other supporting trail facilities in the Castaic Area of the Santa Clarita Valley Planning Area (Figure 5, *Proposed Trail Plan*). The proposed trails would provide connections to the Angeles National Forest, trails in the City of Santa Clarita, and trails in the Newhall Ranch Specific Plan. The trails would be multi-use and range from 3 to 12 feet wide based on site conditions, with adequate space for combined pedestrian, equestrian, and mountain biking use, in accordance with the County of Los Angeles Trails Manual guidelines (Table 1, *County Trail Types*).

[5] U.S. Geological Survey. Accessed 10 August 2015. TopoView. Available at: http://ngmdb.usgs.gov/maps/TopoView/viewer/#11/34.5626/-118.5353

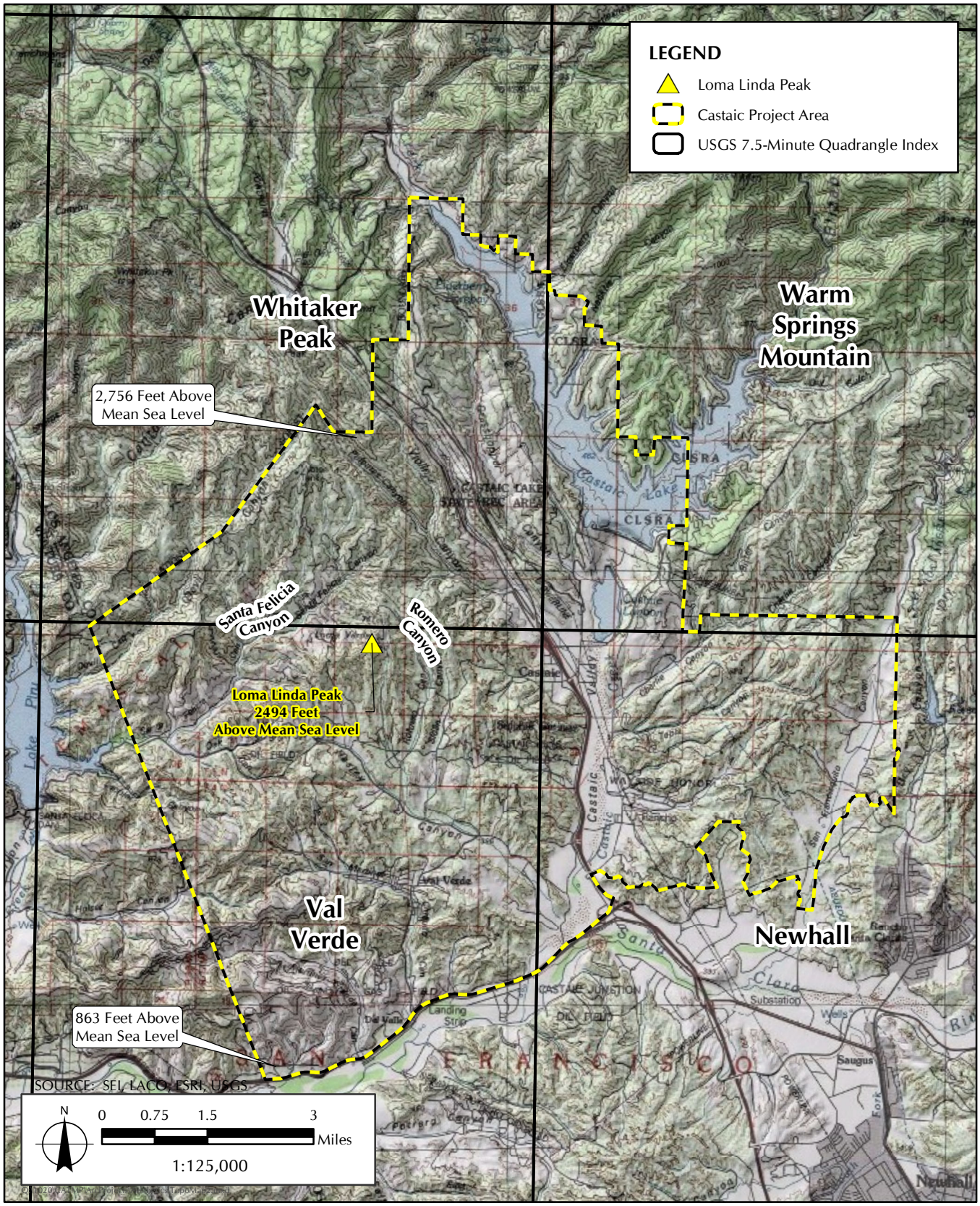

FIGURE 4

Topographic Map with United States Geological Survey 7.5 Minute Quadrangle Index

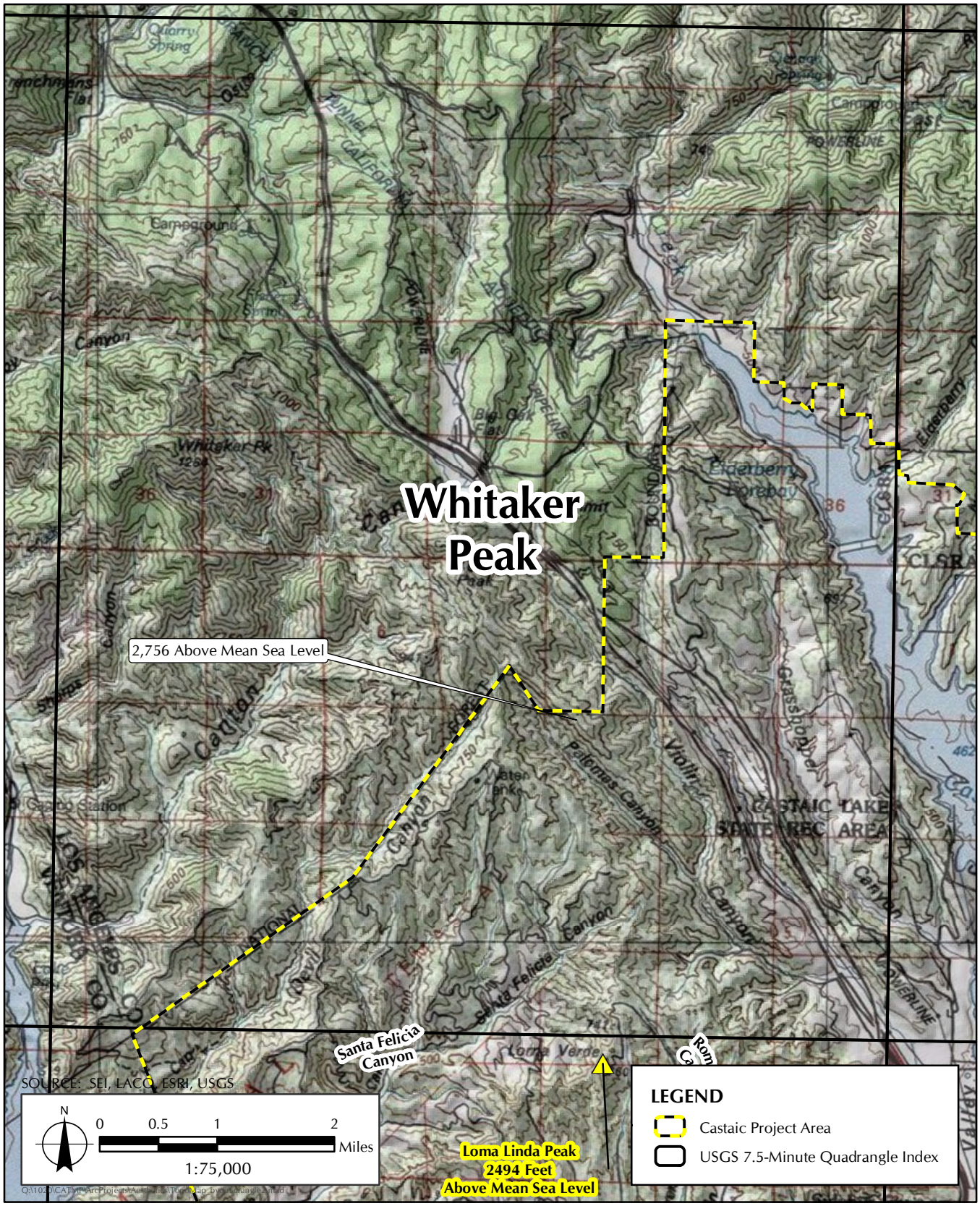

FIGURE 4A

Topographic Map with United States Geological Survey 7.5 Minute Quadrangle Index

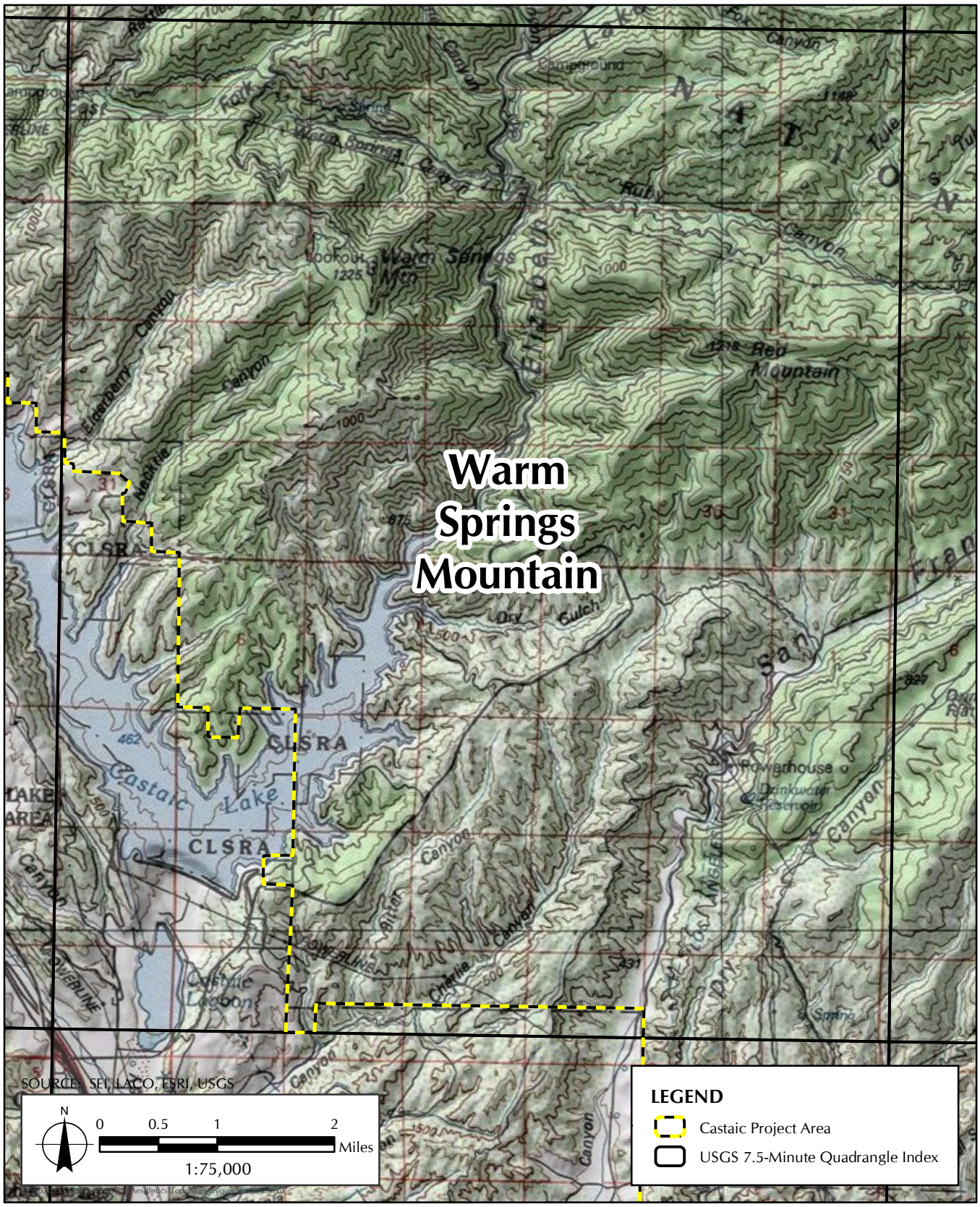

FIGURE 4B

Topographic Map with United States Geological Survey 7.5 Minute Quadrangle Index

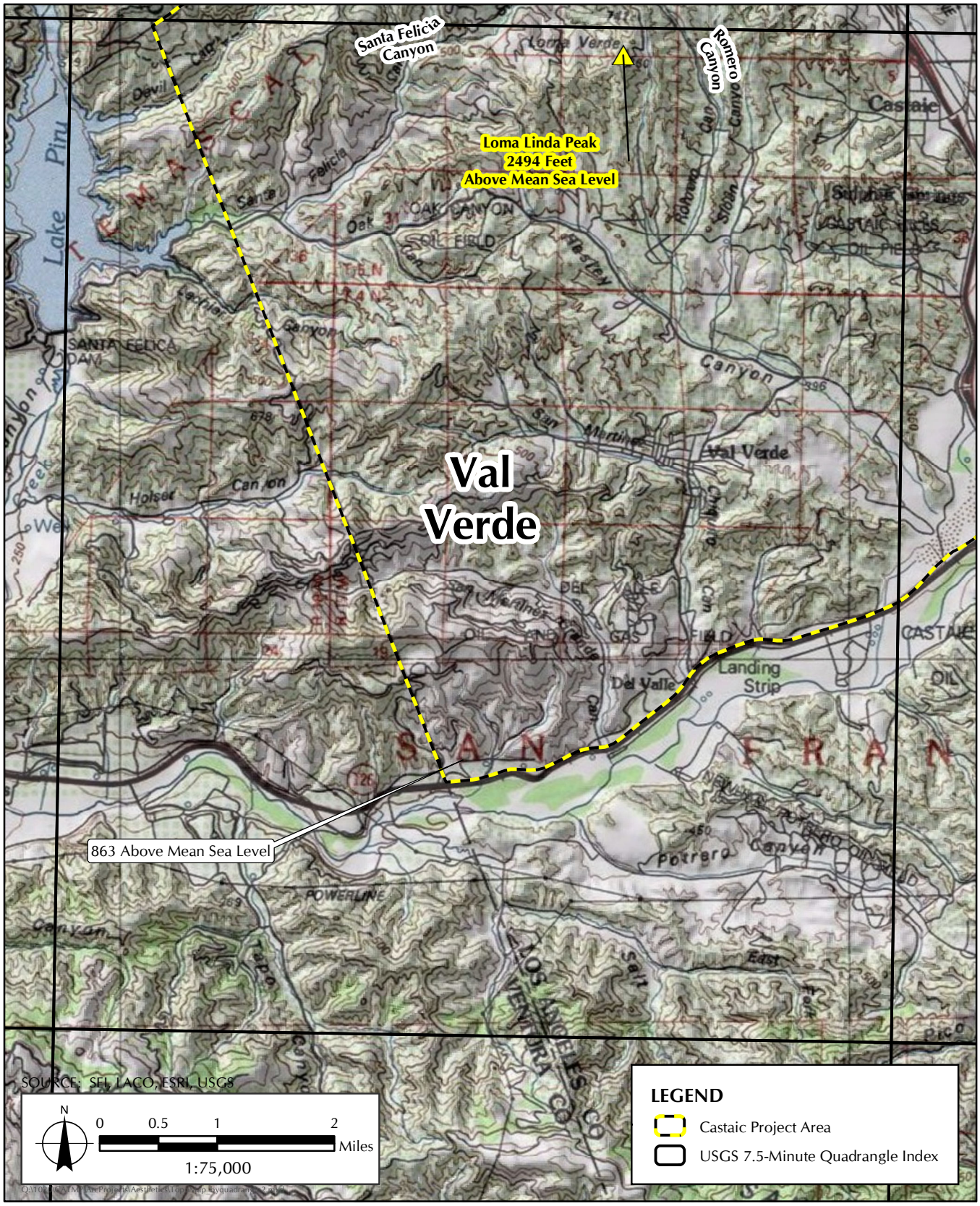

FIGURE 4C

Topographic Map with United States Geological Survey 7.5 Minute Quadrangle Index

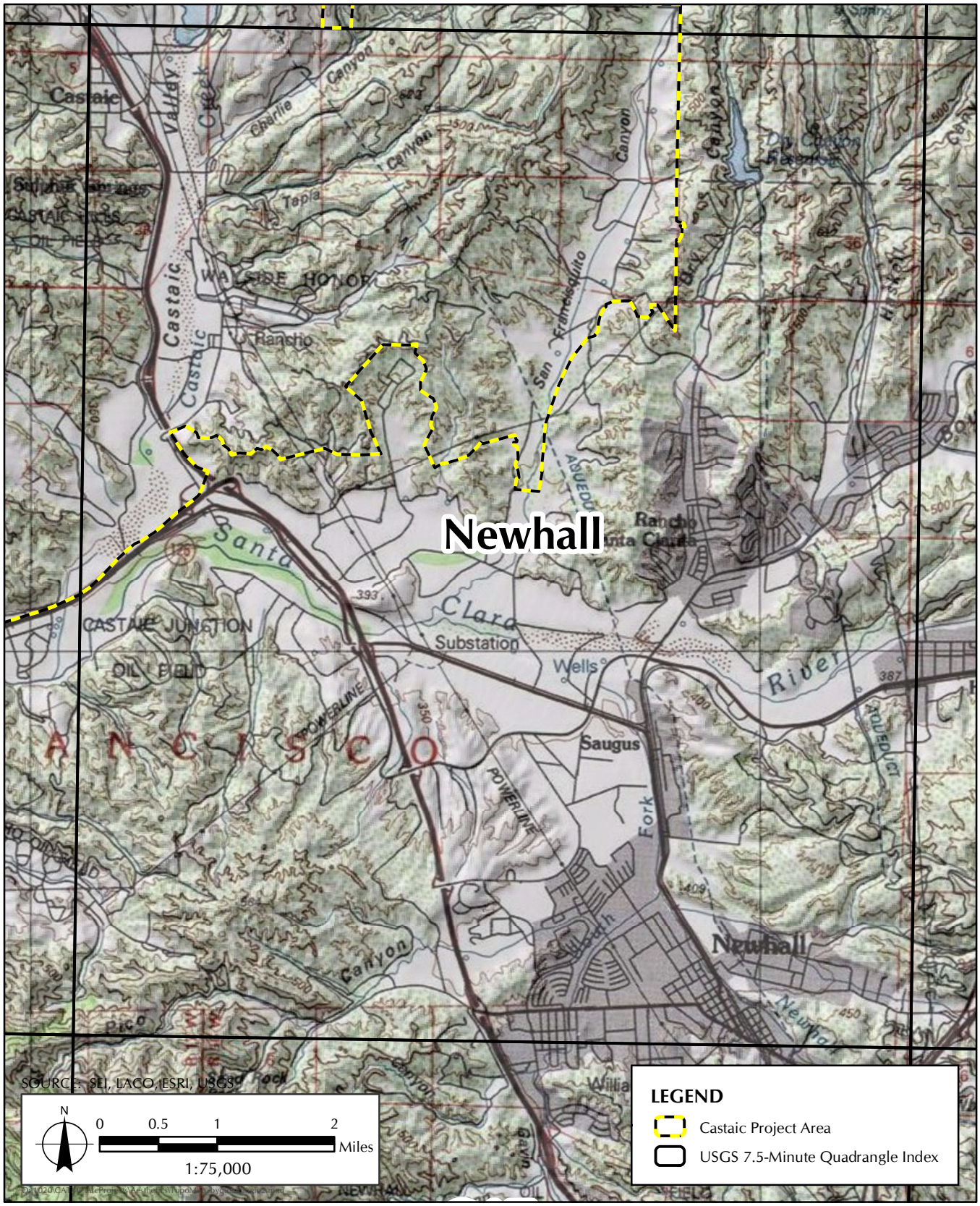

FIGURE 4D

Topographic Map with United States Geological Survey 7.5 Minute Quadrangle Index

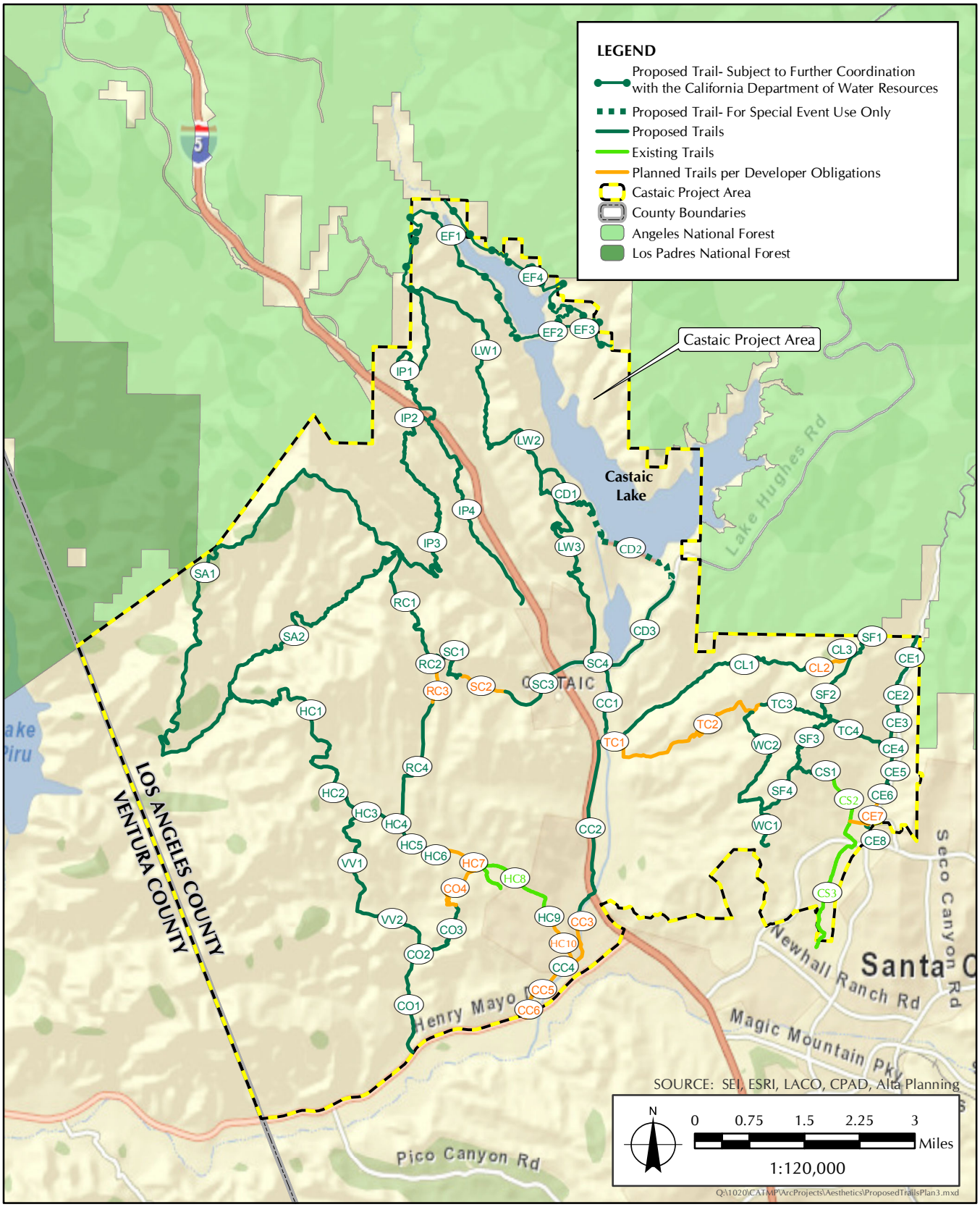

FIGURE 5

Proposed Trails Plan

TABLE 1
COUNTY TRAIL TYPES

Trail Type	Tread / Trail Width	Intensity of Use	Impact	Surface Type
Pedestrian	10–11 feet	High	High	Crusher fines / decomposed granite
Recreational Pathway	8–10 feet	High	High	Natural surface
Natural Trail 1	7–10 feet	High	Medium	Natural surface
Natural Trail 2	5–8 feet	Medium to high	Low	Natural surface
Natural Trail 3	2–3 feet	Low	Minimal	Natural surface

SOURCE: County of Los Angeles Department of Parks and Recreation. Adopted May 17, 2011. Revised June 2013. *County of Los Angeles Trails Manual*. Available at: https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

The proposed project includes 18 trail routes, consisting of four existing trail segments, 10 trail segments that have been planned per developer obligations, and 57 proposed trail segments (Table 2, *Existing, Planned per Developer Obligations, and Proposed Trail Segments*). The proposed trail segments would provide connections to the Santa Felicia SEA, the Angeles National Forest, Newhall Ranch trails and the Santa Clara River Trail, City of Santa Clarita trails, under Interstate-5, and to Castaic Lake.

Consistent with Section 4.3.6, *Way-finding Signs*, of the County Trails Manual, the proposed project would include regular trail signs at trailheads, trail amenity locations, street and trail intersections, and the boundaries of trail easements on private property and National Forest lands.[6] Also consistent with the recommendations of the County Trails Manual, reassurance marker signs would be posted at eye level (62 inches above the ground surface) at every quarter (0.25) mile of trail that visually mark the trail line and identify the name of the trail and quarter milepost number in order to orient trail users and search and rescue services in the case of an emergency. As each trail segment is constructed, the County Department of Parks and Recreation would be responsible for sending the Los Angeles County Fire Department and the Los Angeles County Sheriff's Department the location of each quarter milepost along the trail for emergency response purposes.

The proposed project would involve the development of five simple trailheads at access points, up to three bike skills park amenities, four equestrian amenities, and nine staging areas and trail amenities (Table 3, *Proposed Trail Related Facilities*). The bike skills parks would occupy up to 45 acres.

[6] County of Los Angeles Department of Parks and Recreation. Revised June 2013. County of Los Angeles Trails Manual. Available at: https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

TABLE 2
EXISTING, PLANNED PER DEVELOPER OBLIGATIONS, AND PROPOSED TRAIL SEGMENTS

Route Name	Trail Segment	Length (Miles)	Trail Type	Existing Conditions of Trail Segment and Trail Design Considerations
Castaic Creek (CC)	CC1 (Sports Complex)	1.24	Natural	No existing trail. Dirt road, de facto trail route along Castaic Creek. De facto trail that does not cross private property. Crossing of drainage at RV park will wash out periodically unless an alternative crossing (bridge) is developed.
	CC2 (Pitchess)	2.63	Natural	No existing trail. Existing dirt road from Tapia Canyon Road along Interstate 5 and creekbed, including under the freeway bridge. Potential for trailhead at southern end of segment.
	CC3 (Commerce Center East)	0.76	SUB	No existing trail. Portion of segment parallels existing dirt road. Planned trail per developer obligations generally follows 2007 County adopted trail routes; alignment reflects subdivision plans.
	CC4 (Commerce Center Undercrossing)	0.25	Natural	No existing trail. Within Castaic creekbed and along paved utility road. Slightly modified from 2007 County adopted trail routes to meet proposed subdivision trail.
	CC5 (Commerce Center Bike Trail)	0.46	SUB	No existing trail. Along paved utility road adjacent to creekbed. Planned trail per developer obligations follows the subdivision plan indicating proposed bike trail with 10' minimum equestrian trail.
	CC6 (Commerce Center – 126)	0.48	SUB	No existing trail. Parallels Franklin Parkway and Castaic Creek. Planned trail per developer obligations follows the subdivision plan indicating proposed sidewalk and equestrian trail.
Castaic Dam (CD)	CD1 (Castaic Upper Parking)	1.39	Natural	No existing trail. Parking lot median, follows existing switchbacks (dirt path) leading to and along existing Pine Ridge Fire Road. Connection from 2007 County adopted trail routes to upper parking lot at Castaic Lake.
	CD2 (Castaic Dam Crossing)*	1.76	Natural	No existing trail. Follows paved road from upper parking lot at Castaic Lake, across Castaic Dam, to Lake Hughes Road. Dam crossing, bridging east and west sides of Castaic Lake. Subject to further coordination with State Department of Water Resources..
	CD3 (Lake Hughes East)	1.60	ROW	No existing trail. Unpaved ROW along Lake Hughes Road. On-street connection from potential lagoon trailhead to parking lot on the east side of the dam.
Cliffie Stone Extension (CE)	CE1 (San Francisquito Wash - Upper)	0.63	Natural	No existing trail. Parallels existing dirt road/path along San Francisquito Canyon wash. Passes from subdivision land into multiple private parcels. Runs adjacent to the street, but may need to enter street ROW.
	CE2 (Tesoro Del Valle – SF Wash)	0.52	Natural	No existing trail. Parallels existing dirt road / de facto route within San Francisquito Canyon wash. Realigned 2007 County adopted trail. Passes through Tesoro Del Valle but is not including in subdivision plans.
	CE3 (San Francisquito Wash - Lower)	0.55	ROW	No existing trail. Parallels existing dirt road / de facto route within San Francisquito Canyon wash. Realigned 2007 County adopted trail
	CE4 (Lady Linda)	0.55	Natural	No existing trail. Follows existing dirt road (Lady Linda Lane). Follows Lady Linda Lane to connect to proposed trailhead.
	CE5 (Cliffie Stone – From Lady Linda-Low Ridge)	0.53	ROW	No existing trail. Follows portions of existing de facto dirt path/road to the west of San Francisquito Canyon Road. Primarily follows Cliffie Stone Extension identified in subdivision alignment.
	CE6 (Cliffie Stone – From Lowridge-Tesoro)	0.26	ROW	No existing trail. Dirt ROW exists along San Francisquito Canyon Road. Crosses road ROW but original ROW does not match existing street.
	CE7 (North Park – Cliffie Stone Extension)	0.62	Natural	No existing trail or de facto route. Follows 2007 County adopted alignment through subdivision until southern end, then branches west to meet Cliffie Stone Trail. Owned by MRCA but part of Tesoro subdivision.
	CE8 (North Park Trail Connector)	0.08	Natural	No existing trail or de facto route. Connection to North Park Trail. Leaves subdivision property and enters Newhall Land parcel.
Charlie Canyon (CL)	CL1 (Charlie Canyon Road)	3.61	Natural	No existing trail. Follows existing dirt roads (Tapia Canyon Road and Charlie Canyon Road), and what appears to be a de facto ridgeline path. Realigned from 2007 County adopted trail routes to follow road on County property.

TABLE 2
EXISTING, PLANNED PER DEVELOPER OBLIGATIONS, AND PROPOSED TRAIL SEGMENTS

Route Name	Trail Segment	Length (Miles)	Trail Type	Existing Conditions of Trail Segment and Trail Design Considerations
	CL2 (Charlie Canyon – Tesoro Del Valle)	0.37	Natural	No existing trail. Follows existing dirt road or de facto path. Trail enters subdivision parcels but is not on subdivision plans.
	CL3 (San Francisquito Connection)	0.16	Natural	No existing trail. Follows existing dirt road or de facto path. Connection to San Francisquito Trail.
Chiquito Canyon (CO)	CO1 (Chiquito Canyon and Creek)	3.52	Natural	No existing trail. Modified 2007 County adopted alignment to follow creek instead of Chiquito Canyon Road.
	CO2 (Jackson St)	0.21	ROW	No existing trail. Parallels two existing paved roads – Lincoln Avenue and Jackson Street. Follows existing street.
	CO3 (Chiquito Canyon and Creek – South)	1.04	Natural	No existing trail. Follows portions of Jackson Street and existing de facto dirt path or road. Requires access beyond locked gate. Realigned from 2007 County adopted alignment to minimize parcel crossings.
	CO4 (Chiquito Canyon and Creek – North)	1.05	SUB	No existing trail. Parallels portion of Del Valley Road. Planned trail per developer obligations - modified 2007 County adopted alignment to remain within subdivision parcels. Subdivision alignment not determined.
Cliffie Stone (CS)	CS1 (Cliffie Stone – San Francisquito Motorway)	0.68	Natural	No existing trail. Follows existing ridgeline Farmer John Lat dirt road and paved utility access road. Tesoro Del Valle Property. Requires access along utility road.
	CS2 (Cliffie Stone Trail [Tesoro])	1.16	Natural	Existing trail
	CS3 (Cliffie Stone Trail [San Francisquito)	1.73	Natural	Existing trail
Elderberry Forebay (EF)	EF1 (Forebay Connection)	4.76	Natural	No existing trail. Follows existing dirt road and topography. May have security issues with dam and pipes at northern edge. Only include if Elderberry Forebay Dam is useable.
	EF2 (Forebay – Limit 2)	0.81	Natural	No existing trail. Parallels portion of Elderberry Forebay road. Dam connection to northeastern corner route. Only include if Elderberry Forebay Dam is useable.
	EF3 (Forebay – Limit 1)	0.72	Natural	No existing trail. Parallels portion of Elderberry Forebay road. Dam connection to northeastern corner route. Only include if Elderberry Forebay Dam is useable.
	EF4 (Northern Limit)	4.76	Natural	No existing trail. Parallels portions of existing roads: Goodell Road and USFS Route 6N13. Northeast connection to USFS roads. Extends beyond Castaic project area.
Hasley Canyon (HC)	HC1 (Hasley – Santa Felicia)	3.48	Natural	No existing trail. Follows existing unpaved Ayala Road for a portion of proposed route. Connects Hasley Canyon to Santa Felicia SEA. Requires passage beyond locked gate at Hasley Canyon.
	HC2 (Hasley – Claremont)	0.70	Natural	No existing trail. Follows existing de facto path or dirt road. Trail falls within subdivision area but is not included in existing subdivision plans. Avoids using street ROW. Connects to 2007 County adopted trail alignment at northern end.
	HC3 (Hasley Canyon End)	0.16	Natural	No existing trail. Realigned 2007 County adopted trail alignment.
	HC4 (Hasley Road West)	0.33	ROW	No existing trail. Parallels existing paved Hasley Canyon Road. Follows 2007 County adopted trail alignment along public ROW. Ends at road.
	HC5 (Hasley Road East)	0.57	ROW	No existing trail. Parallels existing paved Hasley Canyon Road. Realigned 2007 County adopted trail to avoid private parcel conflict, avoid a creek crossing, and to more directly connect to other trail segments.
	HC6 (Hasley Creek)	0.26	Natural	Existing de facto trail along Hasley Canyon Road. Realigned 2007 County adopted trail to follow de facto trails.

TABLE 2
EXISTING, PLANNED PER DEVELOPER OBLIGATIONS, AND PROPOSED TRAIL SEGMENTS

Route Name	Trail Segment	Length (Miles)	Trail Type	Existing Conditions of Trail Segment and Trail Design Considerations
	HC7 (Hasley-Los Valles)	0.56	SUB	No existing trail. Existing de facto trail along Hasley Canyon Road. Planned trail per developer obligations - realigned 2007 County adopted trail to follow de facto trails. Within subdivision area a planned subdivision trail is not indicated.
	HC8 (Hasley Canyon Trail)	1.68	Natural	Existing trail
	HC9 (Commerce Center)	0.21	ROW	No existing trail. Existing paved maintenance road along channelized creek. Line to proposed subdivision trails. Crosses under Commerce Center Drive and uses maintenance road.
	HC10 (Commerce Center NW)	0.61	SUB	No existing trail. Parallels creek bed. Planned trail per developer obligations generally follows 2007 County adopted alignment, but realigned to avoid the creek bed where possible.
Interstate Paintball (IP)	IP1 (Interstate 5 to Ridge Route)	3.30	Natural	No existing trail. Existing utility access dirt roads. Follows utility access roads. Northern end will need switchbacks to drop to Ridge Route Rd.
	IP2 (Paintball Site)	0.65	Natural	No existing trail. Existing dirt roads and paved roads. Connects through former paintball site and proposed bike skills park. Alignment to be determined by park design.
	IP3 (Santa Felicia to 5 Connection)	3.67	Natural	No existing trail. Existing dirt roads along portions of alignment. Connection from former paintball site to Santa Felicia SEA. Undercrossing at Interstate-5 will need to be evaluated for safety.
	IP4 (Between Interstate 5)	3.14	Natural	No existing trail. Existing utility access dirt roads between I-5 North and I-5 south. Picks up from the end of Castaic Road and continues to paintball site.
Lake West (LW)	LW1 (Northlake North)	3.28	Natural	No existing trail. Existing dirt roads. Follows 2007 County adopted trail route.
	LW2 (Northlake Central)	1.10	Natural	No existing trail. Existing dirt roads. Follows 2007 County adopted trail route.
	LW3 (Lagoon-Lake)	4.05	Natural	Existing dirt roads, including a portion of Cutler Canyon Fire Road and Vista Ridge Fire Road, and paved Castaic Lake State Recreation Area road. Includes a portion of Pro's Uphill Open Trail and Castaic Brick Trail of Castaic Lake State Recreation Area.[1] Follows 2007 County adopted trail route.
North Park Trail	North Park Trail	0.33	Natural	Existing trail
Romero Canyon (RC)	RC1 (Romero-Santa Felicia)	1.88	Natural	No existing trail. Follows existing dirt road/path. Portions follow narrow ridgelines.
	RC2 (North of High School)	0.13	Natural	No existing trail. Currently a construction site. Connection to Castaic High School path.
	RC3 (Castaic High School)	0.56	SUB	No existing trail. Currently a construction site leading to Romero Canyon Road. Planned trail per developer obligations – alignment needs verification from development plan.
	RC4 (Romero Canyon Rd)	1.89	Natural	No existing trail. Parallels Romero Canyon Road. Follows private road.
Santa Felicia (SA)	SA1 (Santa Felicia Upper Loop)	7.59	Natural	No existing trail. Existing dirt road. Minimal constraints.
	SA2 (Santa Felicia Lower Loop)	5.80	Natural	No existing trail. Existing dirt road. Portions follow narrow ridgelines.
San Francisquito (SF)	SF1 (San Francisquito Motorway)	0.34	Natural	No existing trail. Existing dirt road: San Francisquito Motorway. Follows San Francisquito Motorway to the edge of the Castaic project area.

TABLE 2
EXISTING, PLANNED PER DEVELOPER OBLIGATIONS, AND PROPOSED TRAIL SEGMENTS

Route Name	Trail Segment	Length (Miles)	Trail Type	Existing Conditions of Trail Segment and Trail Design Considerations
	SF2 (San Francisquito Motorway Bypass)	1.09	Natural	No existing trail. De facto ridgeline dirt road/path. Two parallel alternative routes. Single alignment pending further study. Partially inside Tapia Ranch.
	SF3 (San Francisquito – Tapia)	1.15	Natural	No existing trail. Existing dirt road: San Francisquito Motorway. Passes through Tesoro Del Valle, not included in subdivision plans.
	SF4 (San Francisquito – West Creek)	0.85	Natural	No existing trail. Existing dirt road: San Francisquito Motorway. Follows utility road. Connects San Francisquito and Cliffie Stone Trails to West Creek.
Sloan Canyon (SC)	SC1 (Sloan Canyon West)	1.14	Natural	No existing trail. Existing dirt roads and construction sites. Portions follow narrow ridgelines.
	SC2 (Homestead at Sloan Canyon)	0.68	SUB	No existing trail. Existing construction site and unpaved Sloan Canyon Road. Planned trail per developer obligations follows existing dirt road.
	SC3 (Sloan Canyon Dr)	1.52	ROW	No existing trail. Parallels Sloan Canyon Road and Lake Hughes Road. On-street connection. Crosses under Interstate 5. Requires coordination with Los Angeles County Public Works.
	SC4 (Lake Hughes at Lagoon)	0.19	ROW	No existing trail. Parallels Lake Hughes Road south of Castaic Lagoon. Connects Castaic Creek to Castaic Lake.
Tapia Canyon (TC)	TC1 (Sports Complex – Tapia)	0.24	SUB	No existing trail. Parallels Tapia Canyon Road. Planned trail per developer obligations – Tapia Ranch development plans to build path to Castaic Road.
	TC2 (Tapia Bypass)	2.74	SUB	No existing trail. Parallels Tapia Canyon Road and Wayside Canyon Road in between undeveloped portions of Tapia Canyon. Planned trail per developer obligations – part of Tapia Ranch development plan. Portions follow 2007 County adopted alignment.
	TC3 (Tapia – San Francisquito)	1.11	Natural	No existing trail. Appears to be a de facto trail or dirt path between Tapia Canyon Road and San Francisquito Motorway. Partially within Tapia Ranch development.
	TC4 (Tapia – Cliffie Stone)	1.03	Natural	No existing trail. A portion of alignment route follows an existing dirt road/path. A portion parallels dirt roads/paths: Quail Haven Trail, Las Tunas Trail, and Lady Linda Lane. Trail would need to traverse a significant elevation change over the ridge at northern end.
Val Verde (VV)	VV1 (Kennsington Rd)	2.31	Natural	No existing trail. Follows a few de facto dirt roads/paths. Requires access along private roads at either end of the alignment.
	VV2 (Chiquito – Val Verde)	0.94	Natural	No existing trail. Follows edge of Val Verde Park and drainage. Follows drainage, marked as privately owned for portions but appears to all be LA County Flood Control property.
West Creek (WC)	WC1 (West Creek – Tapia)	1.49	Natural	No existing trail. Parallels two existing dirt roads: Company Road and Wayside Lateral Road. Requires connection through cul-de-dac in West Creek.
	WC2 (West Creek – Tapia – Tesoro)	1.30	Natural	No existing trail. Follows a portion of existing de facto dirt road/paths and a portion of Tapia Canyon Road. Within subdivision property, but alignment not included in subdivision. Connects West Creek development to Tapia Ranch area.
TOTAL				
Total of 18 Routes	**Total of 71 Trail Segments** • 4 Existing Segments • 10 Segments planned per developer obligations • 57 Proposed Trail Segments			**Total Of 102.94 Miles in Trail Planning Castaic project area** • 4.90 Miles Existing Trails • 8.14 Miles Planned trails per developer obligations (no existing trail) • 89.90 Miles Proposed and Under Consideration

NOTES: *Subject to negotiation with California State Department of Water Resources (DWR) - Future negotiations with DWR and pending state and county agreement renewal. SUB = Multi-Use Subdivision Trail. ROW = New Designation
SOURCE: [1] Friends of Castaic Lake. Accessed 12 April 2016. *Castaic Lake – Trail Map*. Available at: http://castaiclake.com/map_trails.html

TABLE 3
PROPOSED TRAIL RELATED FACILITIES

Trail Related Facility Type	Related Facility Name (Size)
Trail Access Only • Trailheads only	Upper Ridge Route Road
	Sloan Canyon
	Castaic Road
	West Creek
	Hasley Canyon Equestrian Center
Bike Skills Park Amenities • Restrooms • Drinking Fountains • Rest Areas/Seating • Shade Structures • Pump Tracks (no pedaling required) • Progressive Jumps (natural soil with compacted dirt jumps) • Balance Skills Features (e.g., wooden teeter-totter) • Rock/Technical Features (e.g., rock garden with narrow width trails) • Flow Trails (start at higher elevation for downhill ride) • Trails (over variety of terrain, for all ages) • Road Handling Skills Areas (hard-packed soil course) • Beginner, Intermediate, and Expert Skills Courses (for all ages) • Advanced Downhill Course (steep terrain, jumps, turns, obstacles) • Slalom Course (two adjacent trails for competition)	Castaic Sports Complex (up to 10 acres)
	Upper Lagoon (up to 5 acres)
	Ridge Route Road (up to 30 acres)
Equestrian Amenities • Trailheads • Parking • Restrooms • Drinking Fountains (for humans, equine, or pets) • Picnic Tables • Shade Structures • Horse Arenas • Gathering Areas • Horse Ties and Rails	Tapia Canyon Road
	Castaic Lake Upper Lot
	Tesoro Del Valle
	Castaic Sports Complex
Staging Areas and Trail Amenities • Trailheads • Parking • Restrooms • Drinking Fountains (for humans, equine, or pets) • Benches/Seating • Picnic Tables • Shade Structures • Wayfinding Signage • Interpretive Signage • Gathering Areas • Horse Ties and Rails • Bike Racks	Old Road
	Hasley Canyon
	Chiquito Canyon
	Santa Felicia
	Castaic Lagoon
	Lady Linda
	Ridge Route Road
	Castaic Sports Complex
	Castaic Lake State Recreation Area Upper Lot

Restrooms would be design and required to demonstrate compliance with the standards of the Santa Clarita Valley Sanitation District or the County of Los Angeles Department of Public Health for Onsite Wastewater Treatment Systems (OWTS), as applicable.

Trails and supporting facilities within a one-mile radius of officially designated and eligible State scenic highways would be designed, constructed, and maintained (where construction equipment is involved) to preserve scenic resources, including but not limited to trees, rock outcroppings, and historic buildings, within the scenic highway corridor. Where construction of trails or related supporting facilities requires cuts into the slope (which can be seen from a far distance), the visual character of the slope would be restored by planting locally native vegetation as a visual screen. Similarly, restrooms and other supporting structures would be constructed of materials that blend into the landscape, with locally native vegetative screening.

As stated in the County Trails Manual, the hours for operation for County trails are typically from dawn to dusk (County Code 17.04.330). In accordance with the guidelines in Section 4.3.18, *Lighting*, of the County Trails Manual, where lighting features are provided for safety and wayfinding reasons, lighting would installed in a manner to be non-intrusive to adjacent uses, avoid detracting from a natural outdoors experience for trail users, and directed downward to avoid light pollution or spillover in general.[7]

TECHNICAL TERMINOLOGY

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

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.

Key Observation Point (KOP): One or a series of points on a travel route or at a use area or potential use area where the view of a management activity (action) would be the most revealing.

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.

Shadow Sensitive Uses: Shadow sensitive uses are land uses that are considered sensitive to the effects of new light-blocking structures casting shadows because sunlight is important to the function, physical comfort, or commerce of the land use. Facilities and operations that are considered sensitive to the effects of shadows include: routinely useable outdoor spaces associated with residential, recreational, or institutional (e.g., schools, convalescent homes) land uses;

[7] County of Los Angeles Department of Parks and Recreation. Adopted by the Board of Supervisors on May 17, 2011. Revised June 2013. County of Los Angeles Trails Manual. Available at: https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

commercial uses such as pedestrian-oriented outdoor spaces or restaurants with outdoor eating areas; nurseries; and existing solar collectors.[8]

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

STUDY METHODS

The evaluation of the potential for the proposed project to result in impacts to aesthetics was undertaken in accordance with the County of Los Angeles Department of Parks and Recreation's Environmental Checklist Form and Appendix G of the State CEQA Guidelines, thus considering five key variables: scenic vistas; views from existing regional trails; scenic resources within a scenic highway corridor; visual character and quality of the site and its surroundings; and shadows, light, and glare.

Literature and Map Review

The Los Angeles County General Plan 2035 (County General Plan)[9] and County of Los Angeles zoning designations[10,11] were reviewed to characterize allowable land uses within the Castaic project area. The County General Plan was also reviewed for descriptions of Significant Ecological Areas (SEAs) and associated allowable land uses. The County General Plan, including the Santa Clarita Valley Area Plan, was reviewed to determine if there were any designated scenic vistas within the Castaic project area. The California Department of Transportation (Caltrans) website[12] was reviewed to determine the location of the nearest proposed and designated scenic highways. USGS 7.5-minute series topographic quadrangles and aerial photograph imagery available through Google Earth maps were reviewed to delineate existing potential sensitive visual receptor locations where the proposed trail alignments and other facilities might be visible within and adjacent to the Castaic project area. The County Manual was referenced for trail planning and construction standards and recommendations.[13]

Survey

A survey was conducted on January 20, 2016, to evaluate and document the visual character of publicly accessible portions of the Castaic project area, with a focus on views from designated and

[8] City of Los Angeles. 2006. *L.A. CEQA Thresholds Guide*. Chapter A, Aesthetics and Visual Resources. Available at: http://environmentla.com/programs/Thresholds/A-Aesthetics%20and%20Visual%20Resources.pdf

[9] County of Los Angeles Department of Regional Planning. Adopted 6 October 2015. *Los Angeles County General Plan 2035*. Available at: http://planning.lacounty.gov/generalplan/generalplan

[10] County of Los Angeles Department of Regional Planning. Accessed 16 February 2016. *GIS-NET3 Public*. Planning & Zoning Information for Unincorporated LA County. Available at: http://gis.planning.lacounty.gov/GIS-NET3_Public/Viewer.html

[11] County of Los Angeles. Accessed 16 February 2016. Los Angeles County, California Code of Ordinances. Title 22 – Planning and Zoning, Division 1 – Planning and Zoning, Chapter 22.12 Zones and Districts. Available at: http://library.municode.com/HTML/16274/level3/TIT22PLZO_DIV1PLZO_CH22.12ZODI.html

[12] California Department of Transportation. Accessed 16 February 2016. Officially Designated State Scenic Highways. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/scenic_hwy.htm

[13] County of Los Angeles Department of Parks and Recreation. [Adopted 17 May 2011] Revised June 2013. *County of Los Angeles Trails Manual*. Available at: https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

eligible scenic resources. Sixteen KOPs were established to document the visual character of the existing Castaic project area. The KOPs were selected to characterize a range of public vantage points: Eligible State Scenic Highways, County-designated Town & Country Scenic Drives, existing trail segment, designated scenic canyons, and views from Castaic Lake State Recreation Area. Data was recorded for each KOP: location, direction, visual character, and photographic documentation. Several roads provided limited public access to the Castaic project area; the publicly accessible portions of the Castaic project area were photographically documented and spatially analyzed for possible views of the trail using Google Earth Street View.

Spatial and Viewshed Analysis

A viewshed analysis was conducted using ArcGIS to evaluate the visibility level of the proposed trail alignments and other related facilities based on terrain analysis from Eligible and Officially Designated State Scenic Highways, County-designated Scenic Drives, City-Designated Scenic Highways, and the PCT within a 15-mile (visible) radius of the Castaic project area. Caltrans' visual impact assessment training module for visual character was used to define the viewshed analysis criteria.[14] 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 five-foot viewer elevation was established to identify the visibility level of trail alignments and related facilities 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. Station points were established at every 1,000 feet along the designated scenic routes located within a 15-mile radius of the Castaic project area. No Caltrans- or County-designated scenic vista points are located within a 15-mile radius of the Castaic project area. The viewshed was then established from each station point, based on a 10-foot digital elevation model (DEM). Particular emphasis of the spatial analysis was placed on the proximity of the project elements to designated significant ridgelines (analysis based on proposed elements within a 50-foot radius of significant ridgelines) and within the viewshed of scenic highway corridors, scenic resources identified in the 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.

[14] California Department of Transportation. Accessed 16 February 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

REGULATORY FRAMEWORK

Federal

Federal Land Policy and Management Act of 1976

The Castaic project area encompasses four properties within the Castaic project area administered by the U.S. Department of the Interior Bureau of Land Management (BLM).[15] Under the Federal Land Policy and Management Act of 1976, public lands administered by the BLM shall be managed in a manner that will protect the quality of resources including scenic values,[16] and the Secretary of the Interior shall prepare and maintain an inventory of all public lands and their resources and other values, including outdoor recreation and scenic values,[17] to reflect changes in conditions. The BLM utilizes the Visual Resource Management (VRM) system to classify the visual value (quality) of visual resources to determine the appropriate level of management for BLM-administered lands.[18] The contrast rating process (Manual Section 8431) provides BLM managers with a systematic means to evaluate proposed projects for conformance with VRM objectives and identify mitigating measures to minimize adverse visual impacts, and the visual resource inventory (VRI) process (Manual Section 8410) provides BLM managers with a means for determining visual values. The VRI process consists of a scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones for classification into four VRI classes based on management objectives: Class I and II (most valued; preserve or retain existing character of the landscape), Class III (moderate value; partially retain existing character), and Class IV (least value; modify the existing character).[19]

National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 requires measures to be taken to assure aesthetically pleasing surroundings and the integration of Environmental Design Arts in the planning and decision-making for federal agency projects.[20] The proposed project is a conceptual

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[15] County of Los Angeles. 2012. *Santa Clarita Valley Area Plan, 2012*. Figure CO-8: Recreation and Open Space. Available at: http://planning.lacounty.gov/assets/upl/data/pd_santa-clarita-area-plan-2012.pdf Appendix II, Page 281.

[16] U.S. Department of the Interior Bureau of Land Management and Office of the Solicitor. October 2001. The Federal Land Policy and Management Act of 1976 As Amended. Available at: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/legislation.Par.3647.File.dat/FLPMA.pdf, Section 102 (a)(8), Section 103(c).

[17] U.S. Department of the Interior Bureau of Land Management and Office of the Solicitor. October 2001. The Federal Land Policy and Management Act of 1976 As Amended. Available at: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/legislation.Par.3647.File.dat/FLPMA.pdf, Section 201(a).

[18] U.S. Department of the Interior Bureau of Land Management. 5 April 1984. *Manual 8400 – Visual Resource Management*. Available at: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.34032.File.dat/8400.pdf

[19] U.S. Department of the Interior Bureau of Land Management. 17 January 1986. *Manual H-8410-1 - Visual Resource Inventory*. Available at: http://www.blm.gov/pgdata/etc/medialib/blm/nm/field_offices/farmington/farmington_planning/ffo_vrm_docs.Par.89974.File.dat/H-8410.pdf

[20] U.S. Department of the Interior Bureau of Land Management. 5 April 1984. *Manual 8400 – Visual Resource Management*. Available at: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.34032.File.dat/8400.pdf

document that proposes trail alignments that may traverse BLM-administered lands. Final trail alignments within BLM-administered lands will involve the BLM and may be subject to the NEPA process in addition to the factors specified for further site analysis before the alignment and construction of trails under the guidance of the County Trails Manual.

State

California Department of Transportation (Caltrans) California Scenic Highways Program

The California Scenic Highways Program was created in 1963 under Senate Bill 1467, which added Sections 260 through 263 to the Streets and Highways Code, to preserve and protect scenic highway corridors from change that would reduce the aesthetic value of lands adjacent to highways.[21] According to Caltrans' Scenic Highway Guidelines, scenic highway corridors consist of land that is visible from, adjacent to, and outside the highway right-of-way, and is composed primarily of scenic and natural features. Topography, vegetation, viewing distance, and/or jurisdictional lines determine the corridor boundaries.[22] To be included in the state program, the highways proposed for designation must meet Caltrans' eligibility requirements and have visual merit. County highways and roads that meet the Caltrans Scenic Highways Program standards may also be officially designated. The state laws governing the Scenic Highway Program are provided in the California Streets and Highways Code, Sections 260 through 263. The State Scenic Highway System includes a list of highways that have been designated by Caltrans as scenic highways or are eligible for designation as scenic highways. These highways are designated in Section 263 of the Streets and Highways Code.

A scenic corridor is the land generally adjacent to and visible from the highway and is identified by using a motorist's line of vision. A reasonable boundary is selected when the view extends to the distant horizon. Caltrans outlines the following minimum requirements for scenic corridor protection (Section 261 of the Streets and Highways Code): (1) regulation of land use and intensity (density) of development, (2) detailed land and site planning, (3) control of outdoor advertising, (4) careful attention to and control of earthmoving and landscaping, and (5) the design and appearance of structures and equipment. Caltrans defines noncompliance for a Corridor Protection Program as a program that: (1) no longer complies with the five legislatively required elements under Section 261 of the Street and Highways Code, (2) no longer affords protection because required elements have been amended or changed, or (3) no longer is being enforced by the local governing body.

Local

County of Los Angeles General Plan

The entire Castaic project area is located within the County of Los Angeles and subject to the provisions of the Los Angeles County General Plan 2035.

[21] California Department of Transportation. Accessed 25 January 2016. Frequently Asked Questions. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/faq.htm

[22] California Department of Transportation. October 2008. *Scenic Highway Guidelines*. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/guidelines/scenic_hwy_guidelines_04-12-2012.pdf

Land Use Element

The Land Use Element of the Los Angeles County General Plan 2035 provides strategies and planning tools to facilitate and guide future development and revitalization efforts.[23] 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 land use policies that protect the visual quality of scenic resources, including Hillside Management Areas (HMAs), ridgelines, scenic viewsheds, and areas along scenic highways. The purpose of the Conservation (OS-C) land use category is to preserve open space and scenic resources in perpetuity.

Conservation and Natural Resources Element

The Conservation and Natural Resources Element of the Los Angeles County General Plan 2035 serves as the policy guide for conservation of scenic resources in Los Angeles County.[24] The Conservation and Natural Resources Element identifies the three official State Scenic Highways in the County, 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:

- "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; and,
- Environmental significance to natural ecosystems, parks, and trail systems."

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

- **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 13.6:** Prohibit outdoor advertising and billboards along scenic routes, corridors, waterways, and other scenic areas.

[23] County of Los Angeles Department of Regional Planning. Adopted 6 October 2015. *Los Angeles County General Plan 2035*. Chapter 6: Land Use Element. Available at: http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch6.pdf

[24] County of Los Angeles Department of Regional Planning. Adopted 6 October 2015. *Los Angeles County General Plan 2035*. Chapter 9: Conservation and Natural Resources Element. Available at: http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch9.pdf

- **Policy C/NR 13.7:** Encourage the incorporation of roadside rest stops, vista points, and interpretive displaces into projects in scenic areas.
- **Policy C/NR 13.8:** Manage development in 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].

Significant Ecological Areas

The Conservation and Natural Resources Element 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 Conditional Use permit for project review by biologists on the SEA Technical Advisory Committee (SEATAC).[25] According to the SEA Program, SEA designations provide an informational basis for review of private projects subject to CEQA requirements, which means that public trails do not fall under SEATAC review.[26]

Two adopted SEAs are located within the Castaic project area: the Santa Clara River SEA (#20), which is located along Castaic Creek, the San Francisco Canyon wash, and the Santa Clara River; and the Santa Felicia SEA (#21), which is located in the northwestern portion of the Castaic project area (Figure 6, *Significant Ecological Areas (SEAs) in Castaic Project Area*).

[25] County of Los Department of Regional Planning. 11 February 2016. SEA Program. Available at: http://planning.lacounty.gov/sea

[26] Male, Laura, Sapphos Environmental, Inc., Pasadena, CA. 9 July 2013. Telephone conversation with Emma Howard, Los Angeles County, CA. Subject: SEA Program Exemptions.

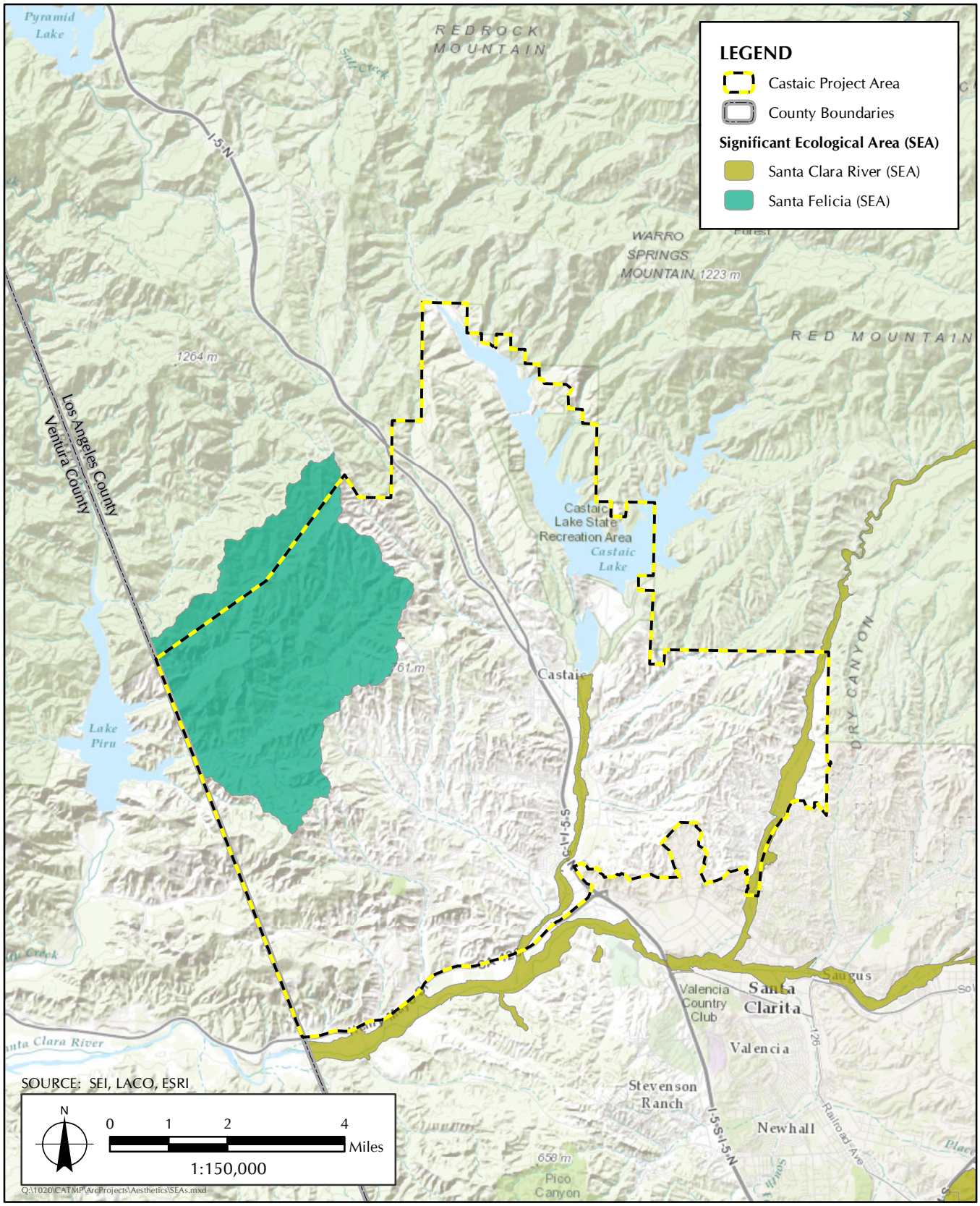

FIGURE 6

Significant Ecological Areas (SEAs) in Castaic Project Area

Santa Clarita Valley Area Plan (One Valley One Vision)

The entire Castaic project area 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.[27] The Area Plan has designated Significant Ridgelines as valuable scenic resources to be protected during development and trail planning and construction.[28] 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.

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 project:

- **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-1.2.1:** In Newhall, provide opportunities for new business and housing by implementing the Downtown Newhall Specific Plan, provide incentives to promote infill development and re-use of underutilized sites, and continue to plan for the future development of North Newhall.
    - **Policy LU-1.2.8:** In Castaic, promote expansion of neighborhood commercial uses to serve local residents; address traffic congestion; ensure compatibility between highway-oriented commercial uses

[27] County of Los Angeles. 2012. *Santa Clarita Valley Area Plan: One Valley One Vision*. Available at: http://planning.lacounty.gov/view/santa_clarita_valley_area_plan/

[28] County of Los Angeles. 2012. *Santa Clarita Valley Area Plan: One Valley One Vision*. Available 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."

and nearby residential uses; and maintain community character in accordance with the County's Castaic Area Community Standards District.

- **Policy LU-1.2.9:** In Val Verde, protect the existing rural lifestyle and small town community character while providing residents with additional access to needed services; ensure compatibility between existing residential areas and the nearby landfill; and maintain community character in accordance with the County's Castaic Area 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.

- **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.
    - **Policy LU-6.1.3:** Ensure that new development in hillside areas is designed to protect the scenic backdrop of foothills and canyons enjoyed by Santa Clarita Valley communities, through requiring compatible hillside management techniques that may include but are not limited to density-controlled development (clustering) subject to the limitations in Policy LU-1.3.5; contouring and landform grading; revegetation with native plants; limited site disturbance; avoidance of tall retaining and build-up walls; use of stepped pads; and other techniques as deemed appropriate.
  - **Objective LU-6.2:** Provide attractive public and open spaces in places visited by residents and visitors, where feasible and appropriate.
    - **Policy LU-6.2.2:** Provide and enhance trail heads where appropriate with landscaping, seating, trash receptacles, and information kiosks.

- **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 project:

- **Goal CO-2:** Geologic Resources - Conserve the Santa Clarita Valley's hillsides, canyons, ridgelines, soils, and minerals, which provide the physical setting for the natural and built environments.
    - **Objective CO-2.2:** Preserve the Santa Clarita Valley's prominent ridgelines and limit hillside development to protect the valuable aesthetic and visual qualities intrinsic to the Santa Clarita Valley landscape. (Guiding Principle #7)
        - **Policy CO-2.2.2:** Ensure that graded slopes in hillside areas are revegetated with native drought tolerant plants or other approved vegetation to blend manufactured slopes with adjacent natural hillsides, in consideration of fi re safety and slope stability requirements.
        - **Policy CO-2.2.3:** Preserve designated natural ridgelines from development by ensuring a minimum distance for grading and development from these ridgelines of 50 feet, or more if determined appropriate by the reviewing authority based on site conditions, to maintain the Santa Clarita Valley's distinctive community character and preserve the scenic setting.
        - **Policy CO-2.2.6:** Encourage building and grading designs that conform to the natural grade, avoiding the use of large retaining walls and build-up walls that are visible from off site, to the extent feasible and practicable.
- **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.
        - **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).
- **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 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-6.2:** Protect the scenic character of view corridors.
    - **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 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.
        - **Policy 6.4.1:** Preserve scenic habitat areas within designated open space or parkland, wherever possible.
    - **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-10.1.1:** Provide and protect a natural greenbelt buffer area surrounding the entire Santa Clarita Valley, which includes the Angeles National Forest, Santa Susana, San Gabriel, and Sierra Pelona Mountains, as a regional recreational, ecological, and aesthetic resource. (Guiding Principle #5)
        - **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)
            - Uses and improvements within the corridor shall be limited to those that benefit the community's use of the river in its natural state.
        - **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."

Rural Outdoor Lighting District Ordinance

Approximately 62 percent of the Castaic project area is located within the County's Rural Outdoor Lighting District and subject to restrictions in terms of light and glare at night (Figure 7, *Special Districts*).[29]

[29] County of Los Angeles Department of Regional Planning. Accessed 16 February 2016. *GIS-NET3 Public*. Planning & Zoning Information for Unincorporated LA County. Available at: http://gis.planning.lacounty.gov/GIS-NET3_Public/Viewer.html

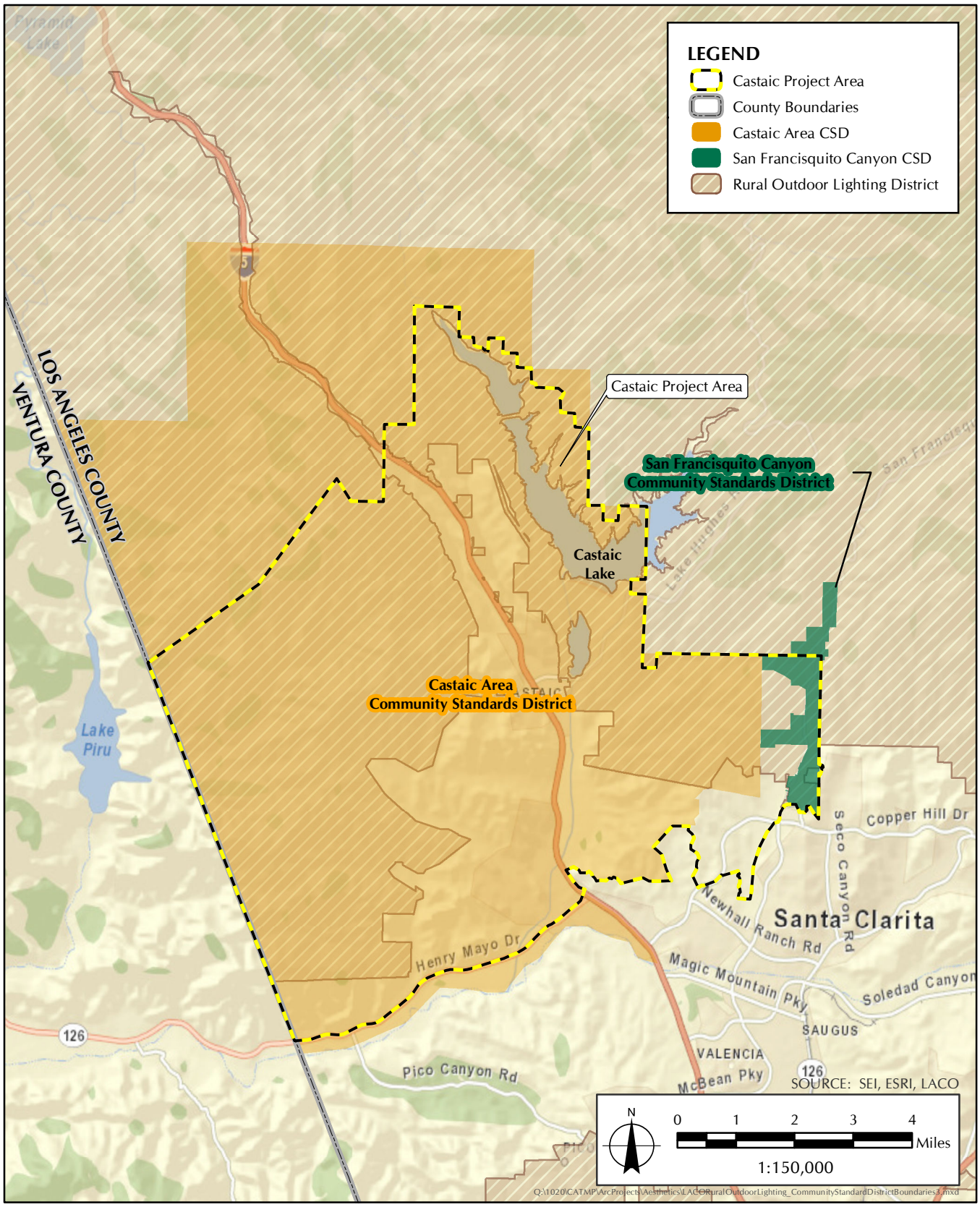

FIGURE 7

Special Districts

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.[30] The ordinance also modified the community standards districts located within the district to be consistent with the dark skies 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.

Castaic and San Francisquito Canyon Community Standards District (CSD) Ordinances

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.).[31] CSD regulations supplement the Countywide zoning and subdivision regulations.[32] The Castaic project area is located within two CSDs: San Francisquito Canyon CSD and Castaic Area CSD (see Figure 7).

LACMC 22.44.144 – San Francisquito Canyon Community Standards District, 200918

The purpose of the San Francisquito Canyon CSD is to 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 San Francisquito Canyon CSD requires that outdoor lighting shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District; establishes street light standards (street lights must be compatible in style and material with the poles on which they are mounted); and establishes the following significant ridgeline protection standards:[33]

> 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.

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

[31] County of Los Angeles Department of Regional Planning. Accessed 12 January 2016. Community Standards Districts. Available at: http://planning.lacounty.gov/view/community_standards_districts

[32] 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 at: https://library.municode.com/HTML/16274/level4/TIT22PLZO_DIV1PLZO_CH22.44SUDI_PT2COSTDI.html#TIT22PLZO_DIV1PLZO_CH22.44SUDI_PT2COSTDI_22.44.126ACCOSTDI

[33] Municode. Accessed 12 February 2016. 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 at: https://library.municode.com/HTML/16274/level4/TIT22PLZO_DIV1PLZO_CH22.44SUDI_PT2COSTDI.html#TIT22PLZO_DIV1PLZO_CH22.44SUDI_PT2COSTDI_22.44.127ALCOSTDI

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.

LACMC 22.44.137 – Castaic Area Community Standards District, 200419

The purpose of the Castaic Area CSD is to protect rural character, unique appearance, and natural resources of the Castaic Area communities. The Castaic Area CSD requires that outdoor lighting shall be provided in accordance with the applicable provisions of the Rural Outdoor Lighting District and establishes the following significant ridgeline protection standards:[34]

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.

[34] Municode. Accessed 12 February 2016. 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 at: https://library.municode.com/HTML/16274/level4/TIT22PLZO_DIV1PLZO_CH22.44SUDI_PT2COSTDI.html#TIT22PLZO_DIV1PLZO_CH22.44SUDI_PT2COSTDI_22.44.127ALCOSTDI

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."

Within the San Francisquito Canyon CSD, the Creek Area (San Francisquito Canyon Creek) has been established as a protected area.

EXISTING CONDITIONS

The information is organized consistent with the aesthetics sections of the County of Los Angeles Department of Parks and Recreation's Environmental Checklist Form and Appendix G to the State CEQA Guidelines.

Scenic Vistas

State Designated Scenic Vistas

Caltrans has designated one scenic vista 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 (Figure 8, *Caltrans Designated Scenic Vista Points*).[35,36] This vista point is located approximately 23.8 miles east of the Castaic project area, on the opposite side of the San Gabriel Mountains. The Castaic project area is not visible from this vista point due to distance, an intended directional vista towards the north, and intervening topography.

County Designated Scenic Vistas

There are no officially designated County scenic vistas in the northern one-third of the County in the Los Angeles County General Plan 2035.[37] The General Plan programs include Program No. C/NR-6 for the preparation of a Scenic Resources Ordinance that creates a scenic corridor, scenic viewshed, and significant ridgeline program and/or ordinance to protect remaining scenic resources, that may include scenic resources from the County's 1965 Regional Recreation Areas Plan.[38] However, there is no time commitment or timeframe for an actual project at this time.

Regional Riding and Hiking Trails

Pacific Crest National Scenic Trail

The 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. The PCT is located approximately 8.5 miles north of the Castaic project area (Figure 9, *Existing Regional Trails*).

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

[36] 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

[37] The County has designated scenic vistas in the Santa Monica Mountains land use plans, which are located more than 15 miles south of the Castaic project area. As the 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

[38] County of Los Angeles Department of Regional Planning. Adopted 6 October 2015. *County of Los Angeles General Plan – Chapter 16: General Plan Implementation Programs*. Program, C/NR-6. Available at: http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch16.pdf

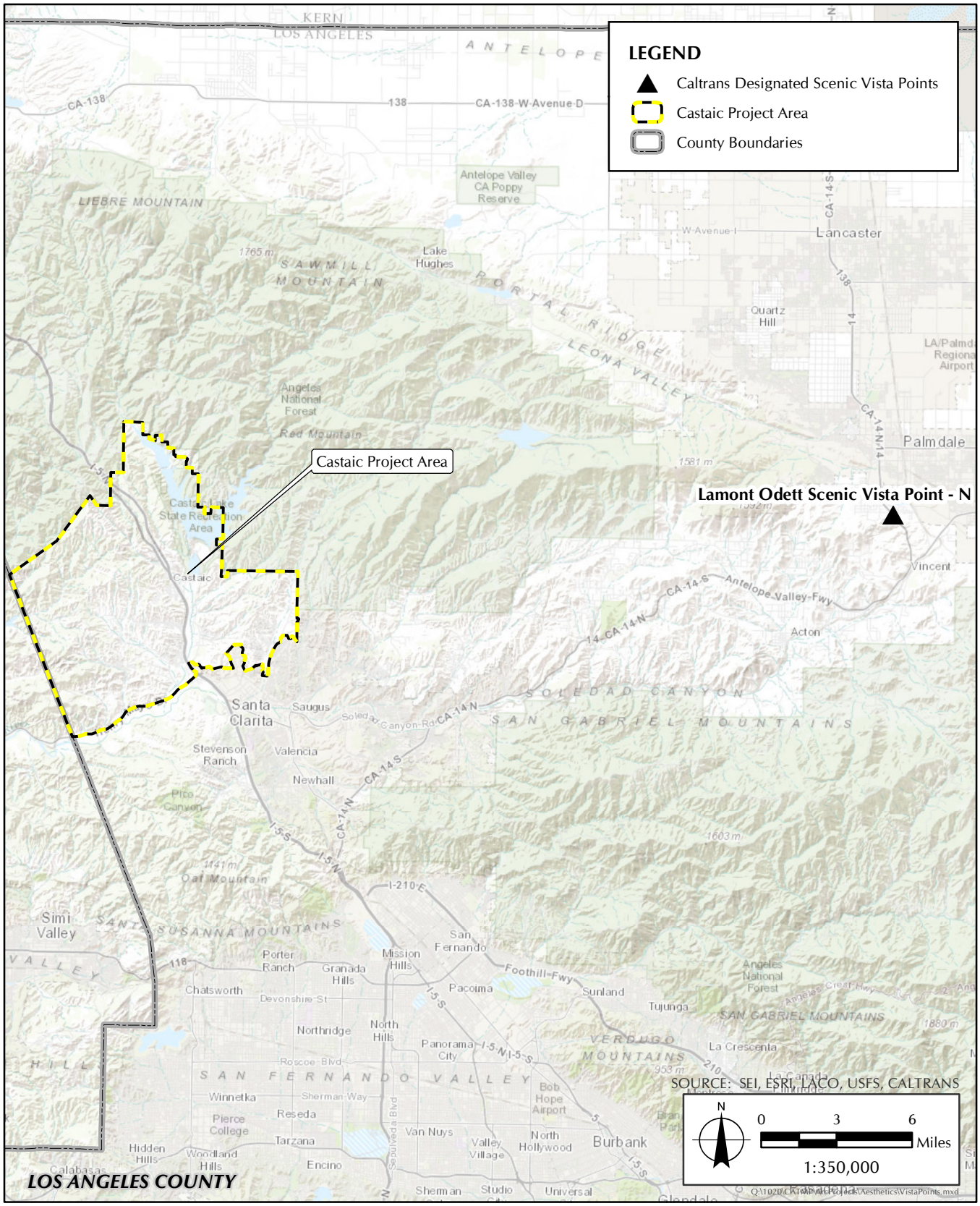

FIGURE 8

Caltrans Designated Scenic Vista Points

FIGURE 9

Existing Regional Trails

A viewshed analysis was conducted using ArcGIS to evaluate the potential visibility level of the Castaic project area from the PCT.[39] It was determined that only approximately 17 percent of the northeastern slopes and the southern portion of Castaic Valley of Castaic project area would be visible from the PCT, due to the intervening topography of the San Gabriel Mountains between the PCT and the study area. It should be noted that a viewshed analysis evaluates visibility based solely on topographic data, and the presence of large trees, large shrubs, buildings, and infrastructure between the PCT and the study area would be expected to reduce the potential visibility level further than this estimate.

County Regional Trail System

The study area contains approximately 74.7 miles of adopted proposed trails in the County General Plan's Regional Trail System and approximately 4.9 miles of existing trail segments (see Figure 9):

- Cliffie Stone Trail (approximately 2.9 miles, in two segments)
- Hasley Canyon Trail (approximately 1.7 miles, in three segments)
- North Park Trail (approximately 0.3 miles)

Scenic Resources within State Scenic Highway Corridors

Officially Designated State Scenic Highways

The two nearest officially designated state scenic highways to the Castaic project area are State Route 2 in Los Angeles County and State Route 33 in Ventura County (Figure 10, *Designated and Eligible California Scenic Highways*):[40]

- **State Route 2,** from 2.7 miles north of SR 210 at the National Forest Boundary in Los Angeles County east to the San Bernardino County Line (located approximately 24.2 miles southeast of the Castaic project area)
- **State Route 33,** from 6.4 miles north of State Route 150 north to the Santa Barbara County Line (located approximately 28.5 miles west of Castaic project area)

Due to distance (over 15 miles) and intervening topography, the Castaic project area is not visible from these two officially designated State scenic highways.

[39] Sapphos Environmental, Inc. 17 February 2016. Viewshed analysis calculated using 10-foot DEM data in ArcGIS.

[40] California Department of Transportation. Accessed 16 February 2016. *List of Eligible and Officially Designated State Scenic Highways*. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/scenic_hwy.htm

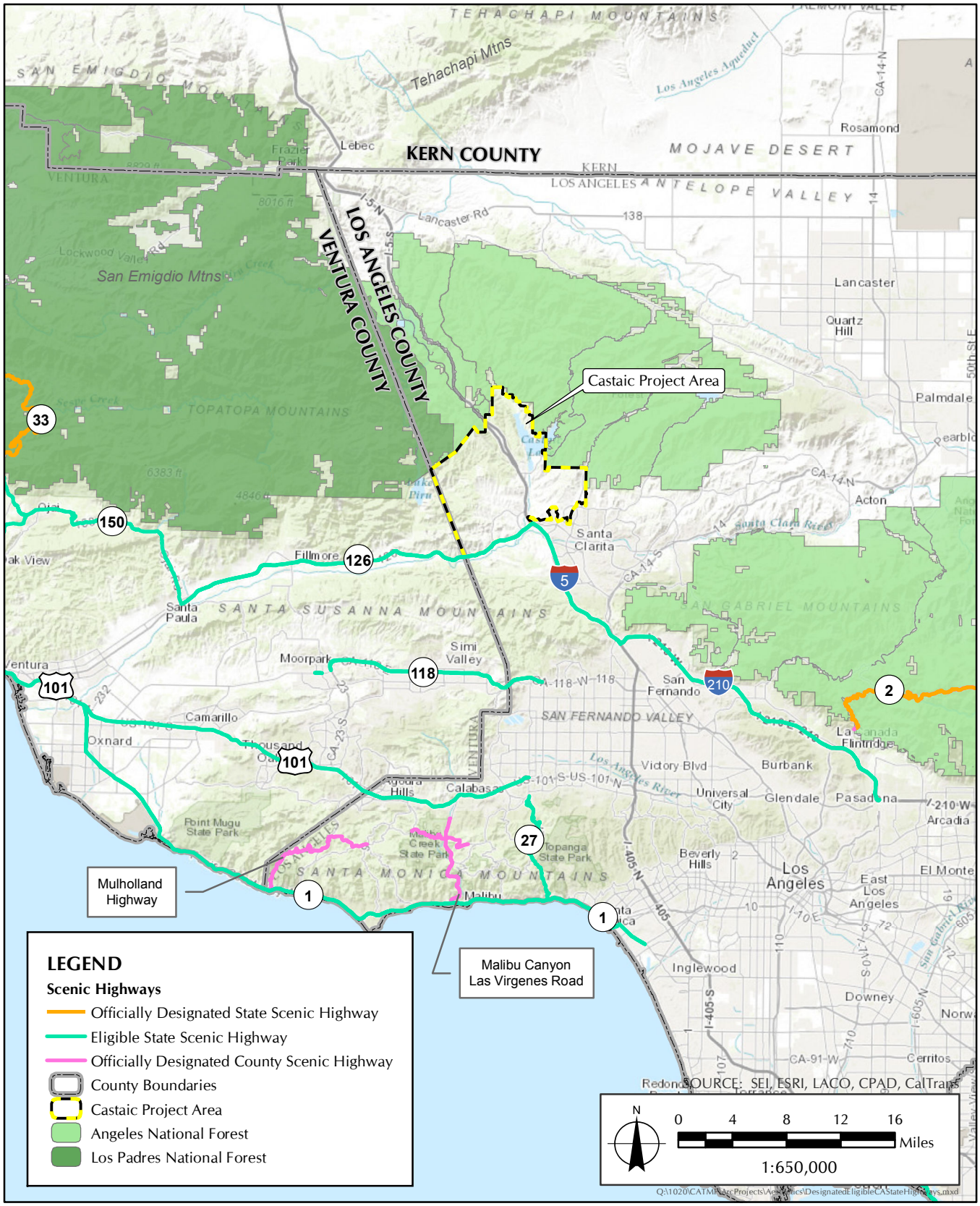

FIGURE 10

Designated and Eligible California Scenic Highways

Eligible State Scenic Highways

There are four eligible state scenic highways within a 15-mile visible radius of the Castaic project area (see Figure 10):[41]

- **Interstate 5** from the Interstate 210 North Tunnel Station in Pasadena east to State Route 126 near Castaic (located within the Castaic project area)
- **State Route 126** (located adjacent to the southern edge of the Castaic project area)
- **State Highway 118** (located approximately 8.6 miles south of the Castaic project area)
- **Interstate 210** (located approximately 9.4 miles southeast of southeastern edge of the Castaic project area)

A viewshed analysis was conducted using ArcGIS to evaluate the potential visibility level of the Castaic project area from these four eligible state scenic highways.[42] It was determined that only approximately 17.9 percent of the southern slopes and the southern portion of Castaic Valley of Castaic project area (including Hasley Canyon, the Santa Clara River corridor, and San Francisquito Canyon) would be visible from eligible state scenic highways, due to the intervening topography of the ridges and canyons within the study area. It should be noted that a viewshed analysis evaluates visibility based solely on topographic data, and the presence of large trees, large shrubs, buildings, and infrastructure between these highways and the study area would be expected to reduce the potential visibility level further than this estimate. These highway corridors contain trees, rock outcroppings, and have a potential to have historic structures.

Officially Designated County Scenic Highways

There are two officially designated County scenic highways within Southern California:[43]

- **Malibu Canyon-Las Virgenes Road,** from State Route 1 to Lost Hills Road (19.3 miles south of the Castaic project area)
- **Mulholland Highway,** from SR 1 to S. Kanan Dume Road and from Malibu Lake to 0.5 mile west of Cold Canyon Road (20.8 miles south of the Castaic project area)

Due to distance (over 15 miles) and intervening topography, the Castaic project area is not visible from these two officially designated County scenic highways.

Visual Character and Quality

The Castaic project area is characterized by rugged topography, steep ridges, deep canyons with wide creek beds that are tributaries to the Santa Clara River, and several ridgeline and canyon trails and fire roads. The study area is generally considered rural and includes the existing communities of Castaic, Castaic Junction, Val Verde, Hasley Canyon, Hillcrest, and Paradise Ranch. The study area contains several ridges and canyons and approximately 4.9 miles of existing County trails.

[41] California Department of Transportation. Accessed 16 February 2016. *Officially Designated State Scenic Highways*. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/schwy.htm

[42] Sapphos Environmental, Inc. 17 February 2016. Viewshed analysis calculated using 10-foot DEM data in ArcGIS.

[43] California Department of Transportation. 2015. Accessed 16 February 2016. *Officially Designated County Scenic Highways*. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/lists/OD_County_Scenic_Hwys_2015.pdf

Land Use Designation

According to its Generalized Land Use Plan, the Castaic project area has been designated as predominantly Rural Land use (approximately 54 percent), with portions of the study area also designated for Residential (approximately 11 percent), Parks and Recreation (approximately 9 percent), Public and Semi-Public (approximately 7 percent), Specific Plan (approximately 6 percent), Water (approximately 5 percent), Industrial (approximately 5 percent), and Conservation uses (approximately 2 percent).[44] Approximately 1 percent of the land is designated for Open Space use on land owned by the BLM. Although the Santa Clarita Valley Area Plan only directly mentions trails within the Parks and Recreation land use designation, the land use policy defers to the specific allowable uses and development standards determined by underlying zoning designations and adopted Specific Plans. The northwestern portion of the Castaic project area is located within the Santa Felicia SEA, and the Santa Clara River SEA crosses through the study area.

Zoning

The County zoning designations for the project study area are predominantly heavy agricultural (approximately 63 percent) and open space (approximately 17 percent), with two specific plan areas (approximately 6 percent—Northlake Specific Plan and Newhall Specific Plan) and land designated with single-family residence (approximately 5 percent), residential planned development (approximately 4 percent), and restricted heavy manufacturing zones (approximately 3 percent) also comprising portions of the approximately 78-square-mile study area.[45] The Heavy Agricultural Zone, Specific Plan Zone, manufacturing zones, Unlimited Commercial Zone, Neighborhood Business Zone, and Watershed Zone permit riding and hiking trails; the Open Space, Light Agricultural Zone, Manufacturing Industrial Planned Development Zone, Commercial Planned Development Zone, and residential zones in the study area allow for riding and hiking trails if they have been approved by the Planning Director of the County of Los Angeles Department of Regional Planning (Director); and riding and hiking trails may be allowed in the Institutional Zone upon approval of a Conditional Use Permit (CUP). The proposed project study area is enclosed on the north by County-designated Watershed Zone; on the southeast by the City of Santa Clarita; on the south by Specific Plan Zone, Manufacturing Industrial Planned Development Zone, and Neighborhood Business Zone; and on the southwest by the County of Ventura.

Key Observation Points

The existing visual character of the Castaic project area was documented in the vicinity of scenic resources and existing trail segments for each of the 16 established Key Observation Points (Figure 11, *Key Observation Points Map*; see Appendix A: *Key Observation Points*).

[44] County of Los Angeles. 2012. *Santa Clarita Valley Area Plan, 2012*. Available at: http://planning.lacounty.gov/assets/upl/data/pd_santa-clarita-area-plan-2012.pdf Appendix II, Page 268. "Figure L-2: Santa Clarita Valley Area Plan: Generalized Land Use and Limited H5 Districts."

[45] Municode. Accessed 12 February 2016. Municode Library: County of Los Angeles, CA. Title 22 – Planning and Zoning. Available at: https://www.municode.com/library/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT22PLZO

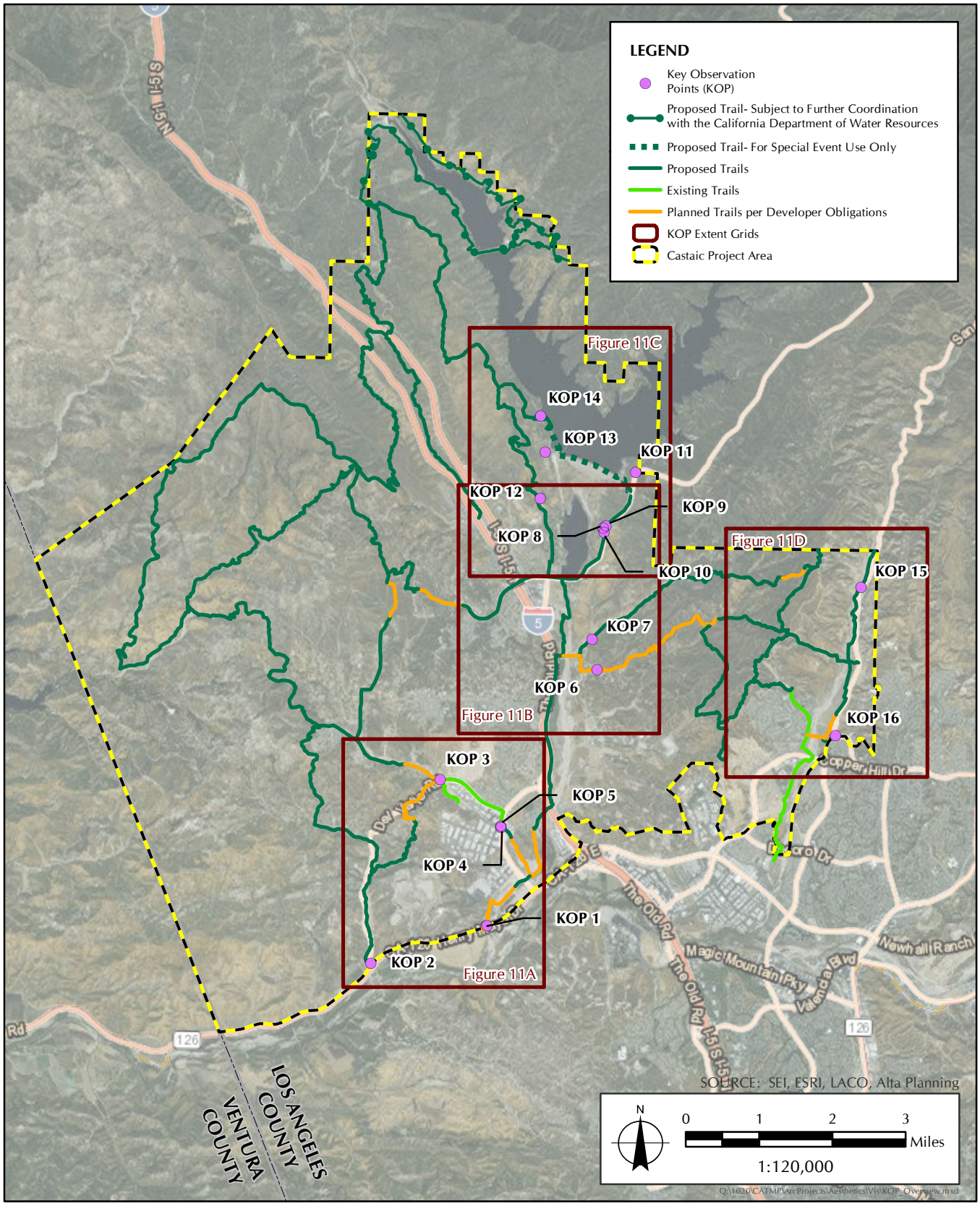

FIGURE 11

Key Observation Points Overview Map

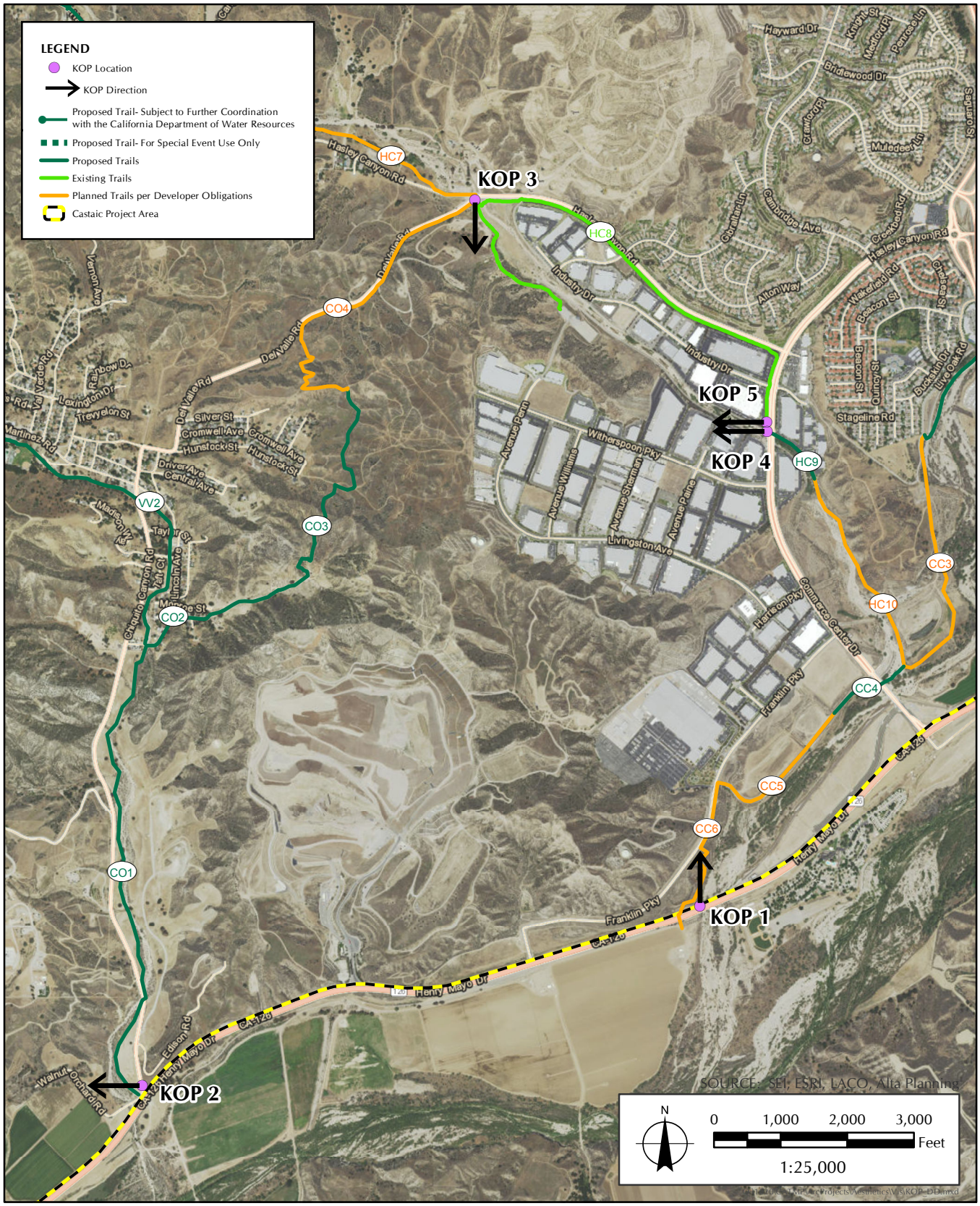

FIGURE 11A

Key Observation Points Map

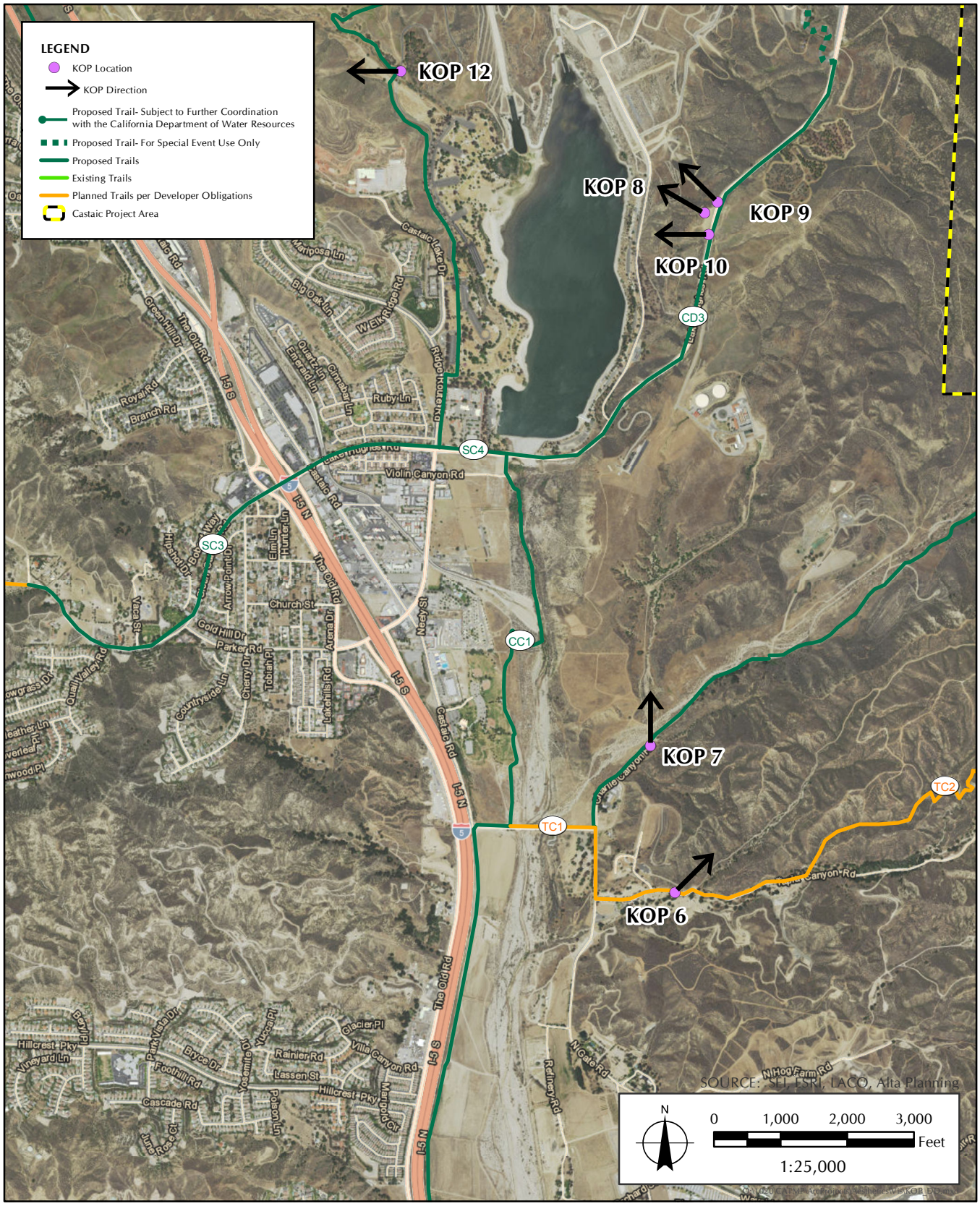

FIGURE 11B

Key Observation Points Map

FIGURE 11C

Key Observation Points Map

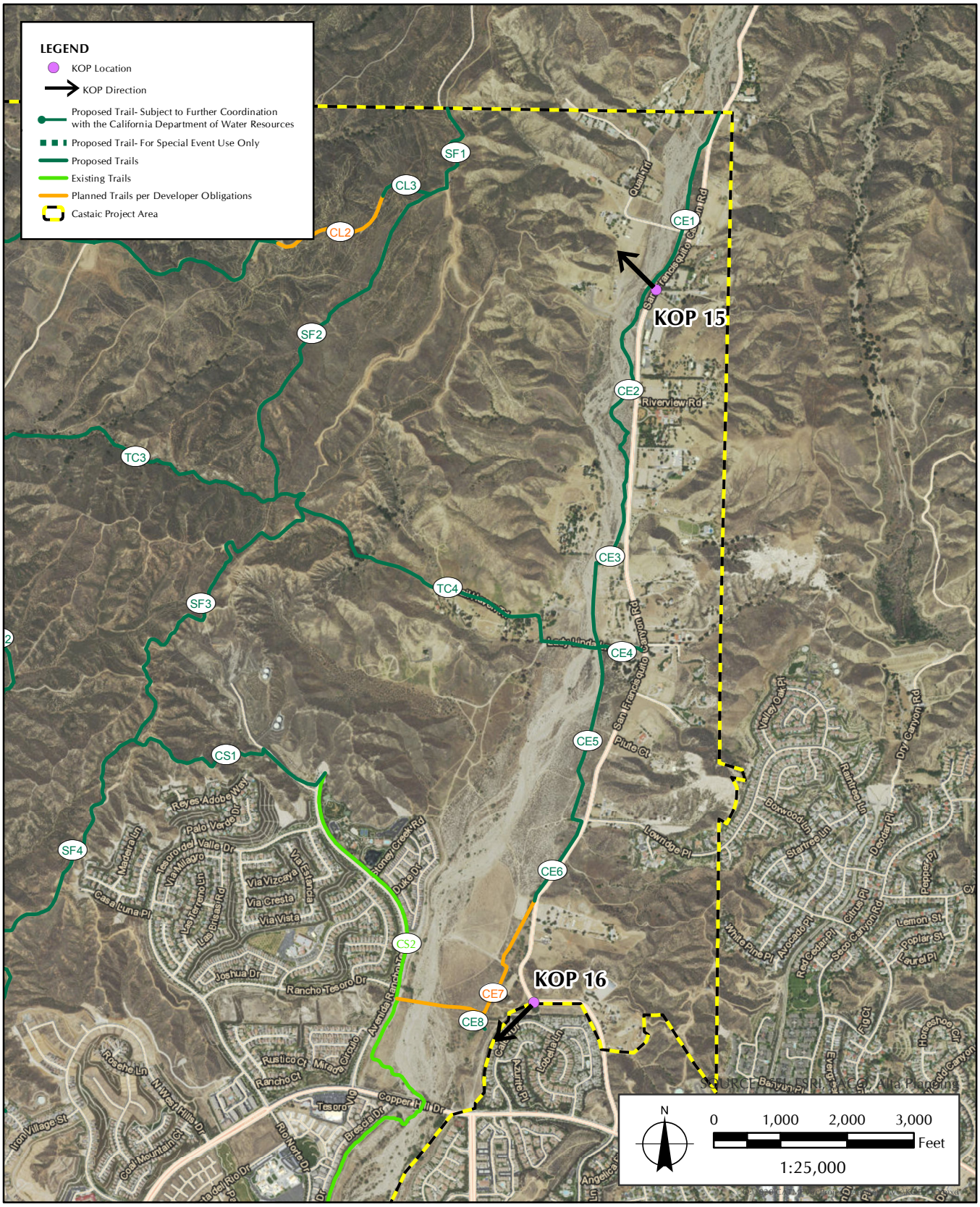

FIGURE 11D

Key Observation Points Map

KOP 1: State Route 126 at Castaic Creek, Facing North – View of Castaic Creek bed from eligible State scenic highway, characterized by native and non-native riparian and scrub vegetation, contrasting off-white sand in the wash and red-orange soils on the hillside, and electrical transmission lines. An approved subdivision agreement trail segment (CC6) is proposed along this hillside, which would follow Franklin Parkway then cross SR-126 to the west (left) of the tree (see Appendix A).

KOP 2: Chiquito Canyon Road at Val Verde Sign, Facing West – View from edge of Chiquito Canyon Road facing SR-126 and rural area with agricultural use and electrical transmission lines; blue "Welcome to Val Verde" sign towards the north. A proposed trail segment (CO1) under the proposed project would parallel the western side of Chiquito Canyon Road.

KOP 3: Existing Hasley Canyon Trail Segment at Del Valle Road, Facing South – View of heavily graded areas between two portions of a well-defined trail segment (with white picket fence borders), surrounded by active oil drilling, industrial development near existing trail. At this point, two proposed trail segments (CO1 and HC3) would intersect with two existing trail segments (HC4 and HC5) to provide connections towards the western side of the study area, along Del Valley Road and Hasley Canyon Road.

KOP 4: End of Existing Hasley Canyon Trail Along Commerce Center Drive, Facing West – View of channelized wash with existing riparian vegetation that marks the end of this existing decomposed granite trail (to the right of the paved utility corridor). Near this point, proposed trail segment HC7 would connect to the existing trail segment HC6.

KOP 5: Existing Hasley Canyon Trail Along Commerce Center Drive Near Castaic Creek, Facing West – View of existing decomposed granite trail segment with white picket fence and rosemary groundcover provides a more rural experience amidst industrial and commercial buildings and streets.

KOP 6: Tapia Canyon Road at End of County Maintained Road, Facing Northeast – A substantial part of the canyon is privately owned, and the publicly accessible portion of the canyon contains several warning signs "Do Not Enter Jail Facility" and electrical transmission lines. An approved subdivision agreement trail segment (TC2) is proposed along Tapia Canyon Road, which would initially follow the road then extend into the canyon.

KOP 7: Charlie Canyon Road at Entrance to California Paintball Park, Facing North – View of a canyon characterized by native and non-native vegetation with graded areas to facilitate access to utilities that cross through the canyon; gated entrance at California Paintball Park and periodic warning signs "Do Not Enter Jail Facility"; "No Trespassing" signs on northern side of road. A proposed trail segment (CL1) would parallel Charlie Canyon Road.

KOP 8: View From Lake Hughes Road Scenic Overlook, Facing West-Northwest – View of Castaic Lagoon and Castaic Lake Dam from scenic overlook on Lake Hughes Road, a County-designated Town & Country Scenic Drive, characterized by native vegetation and infrastructure/grading to support the dam in the foreground, and development concentrated in the foothills of the middleground and background, with steeper slopes and ridgelines in the background not affected by development. In the middleground, construction involving extensive grading is visible (and audible) within the Northlake Specific Plan Area. Trees along Castaic Lagoon, major roads, and residential roads soften the contrasting effects of the development on the valley. To the east of Castaic Lagoon, the topography is characterized by plateaus; to the south,

west, and north, the topography is characterized by steep slopes with prominent ridgelines. A proposed trail segment (CD3) would parallel Lake Hughes Road and provide an opportunity for trail users to pause at this scenic overlook.

KOP 9: Northern Edge of Lake Hughes Road Scenic Overlook, Facing West – View of Castaic Lagoon, Castaic Lake dam, and the natural surface Lake Hughes Road (a County-designated Town & Country Scenic Drive) right-of-way. The view is characterized by Castaic Lagoon, native and non-native vegetation, two sets of electrical transmission lines, and infrastructure/grading to support the dam in the foreground; residential development and construction in the middleground; and ridgelines in the background. Trees along Castaic Lagoon, major roads, and residential roads soften the contrasting effects of the development on the valley. A proposed trail segment (CD3) would parallel Lake Hughes Road.

KOP 10: Southern Edge of Lake Hughes Road Scenic Overlook, Facing Northwest – View of Castaic Lagoon and the natural surface Lake Hughes Road (a County-designated Town & Country Scenic Drive) right-of-way. The view is characterized by Castaic Lagoon, native and non-native vegetation, and a peripheral view of electrical transmission lines in the foreground; residential development and construction in the middleground; and ridgelines in the background. Trees along Castaic Lagoon, major roads, and residential roads soften the contrasting effects of the development on the valley. A proposed trail segment (CD3) would parallel Lake Hughes Road.

KOP 11: Lake Hughes Road Overlooking Castaic Lake Dam, Facing Northwest – View of Castaic Lake, Castaic Lake Dam, utilities along Lake Hughes Road (a County-designated Town & Country Scenic Drive), and the natural surface Lake Hughes Road right-of-way. The view is characterized by native and non-native vegetation, graded areas with utilities, Castaic Lake, and Castaic Lake Dam in the foreground; and development concentrated in the foothills of the middleground and background to the southwest (left), with steeper slopes and ridgelines in the background not affected by development.

KOP 12: West Ramp Road at West Ridge Trail, Castaic Lake State Recreation Area, Facing West – View of existing West Ridge Trail sign and grading along West Ramp Road that has been named as defacto Castaic Brick Trail and defacto Grasshopper Canyon Trail. The area is characterized by native and non-native vegetation, ornamental pine trees, and an unclear existing trail route at West Ridge Trail, due to winter maintenance activities. There is a County trail sign for the "Castaic Lake Trail" that parallels the West Ridge Trail. A proposed trail segment (LW3) would parallel portions of West Ramp Road and follow existing trail and fire road routes (including defacto Castaic Brick Trail, defacto Grasshopper Canyon Trail, and Cutler Canyon Fire Road) within Castaic Lake State Recreation Area.

KOP 13: Point 21 West Ridge Trail and Pine Ridge Fire Road Connection, Castaic Lake State Recreation Area, Facing Southwest – View of existing West Ridge Trail and Pine Ridge Fire Road that have been mapped by Friends of Castaic.[46] Characterized by trees on the ridgelines, with existing Cutler Canyon Fire Road slightly below the ridgeline to the west (right) clearly visible.

KOP 14: Switchbacks Overlooking Castaic Lake, Castaic Lake State Recreation Area, Facing North – View of existing defacto Switchbacks trail and Fisherman Trail that has been mapped by Friends of Castaic.[47] This portion of the area appears to have been recently affected by fire, and is

[46] Friends of Castaic Lake. N.d. *Castaic Lake – Trail Map*. Available at: http://www.castaiclake.com/map_trails.html

[47] Friends of Castaic Lake. N.d. *Castaic Lake – Trail Map*. Available at: http://www.castaiclake.com/map_trails.html

characterized by ruderal native and non-native vegetation, scattered trees along the ridgelines and within the canyons, and a view of Castaic Lake. There is a County trail sign at the start of the Fisherman Trail labeled "Castaic Lake Trail." A proposed trail segment (CD1) would follow existing trail routes (including a defacto Switchbacks trail segment and the open Fisherman Trail) and parallel Pine Ridge Fire Road within Castaic Lake State Recreation Area.

KOP 15: San Francisquito Canyon Road, Facing Northwest – View of the designated scenic San Francisquito Canyon and designated scenic ridgelines, characterized by rural/scattered equestrian residential uses with native vegetation in the wash and non-native ornamental vegetation near the residences. Electrical transmission lines and other utilities are located within the canyon, but residences are isolated to areas immediately adjacent to San Francisquito Canyon Road and Quail Trail (right side), and trailers/motorhomes are parked below the electrical transmission lines. A proposed trail segment (CE1) would parallel San Francisquito Canyon Road within the wash of San Francisquito Canyon.

KOP 16: San Francisquito Canyon Road at Existing North Park Trail, Facing Southwest – View of the existing North Park Trail segment, which is characterized by a curved natural surface trail with a white picket fence limiting the access points and defining the trail, with native riparian vegetation on the opposite side of the fence and non-native vegetation in disturbed areas. There are several sandbags set up temporarily for an El Niño California winter, and the trail provides a recreation opportunity to support occupants of the single-family residences located a short distance beyond the trail from San Francisquito Canyon Road. The trail appears to be located within an electrical utility corridor due to the presence of electrical transmission lines over and parallel to the trail.

County Designated Significant Ridgelines

The 2012 Santa Clarita Valley Area Plan has designated 16 (23 segments) ridgelines in the Castaic project area as Significant Ridgelines to be preserved, all of which are concentrated in San Francisquito Canyon (Figure 12, *Scenic Resources*).[48] These ridgelines should be carefully considered during the planning, designation, and construction of trails in the Multi-Use Trails Plan.

[48] These have been incorporated into the County General Plan 2035 inventory of significant ridgelines.

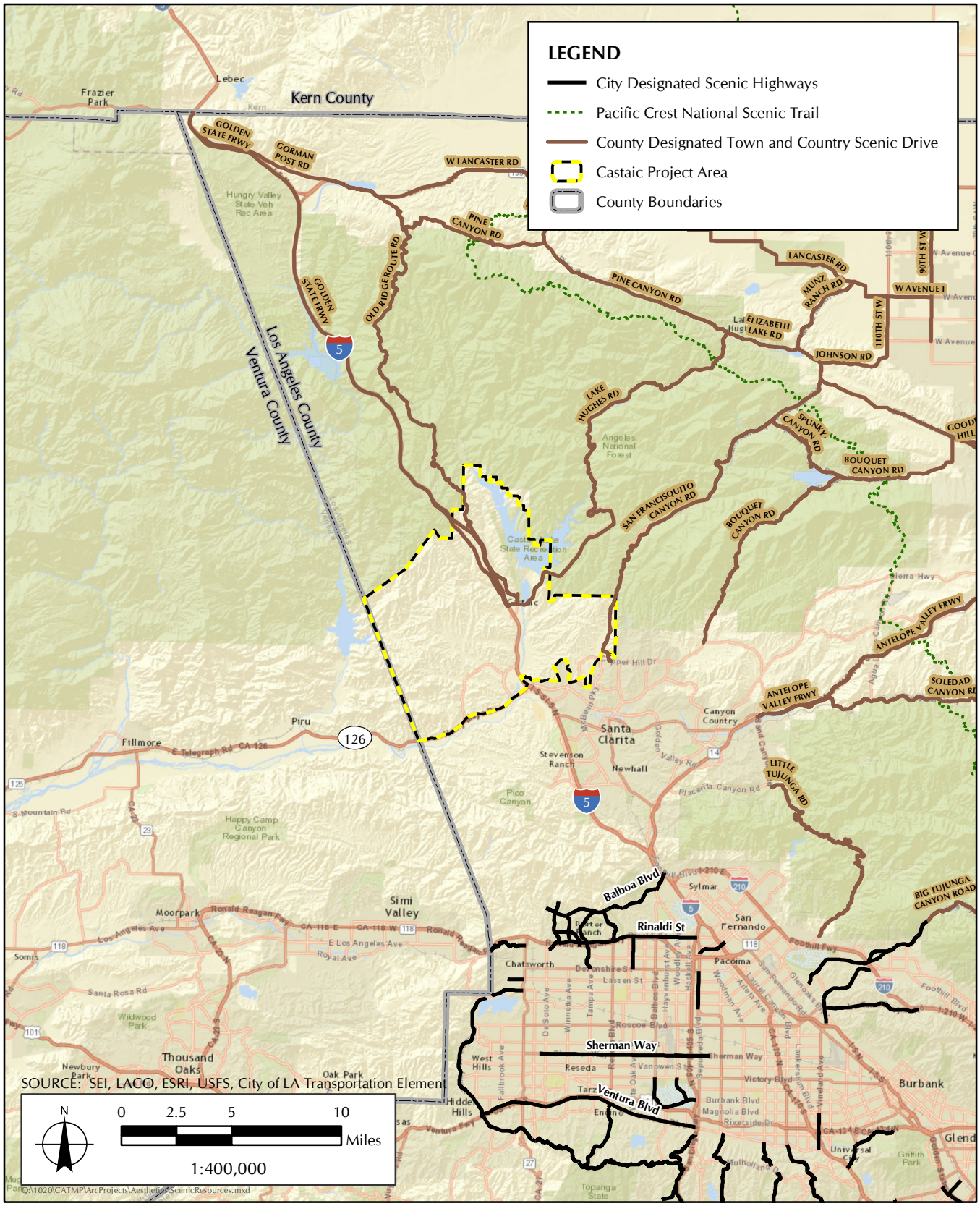

FIGURE 12A

Scenic Resources - Local Designated Scenic Drives and Highways

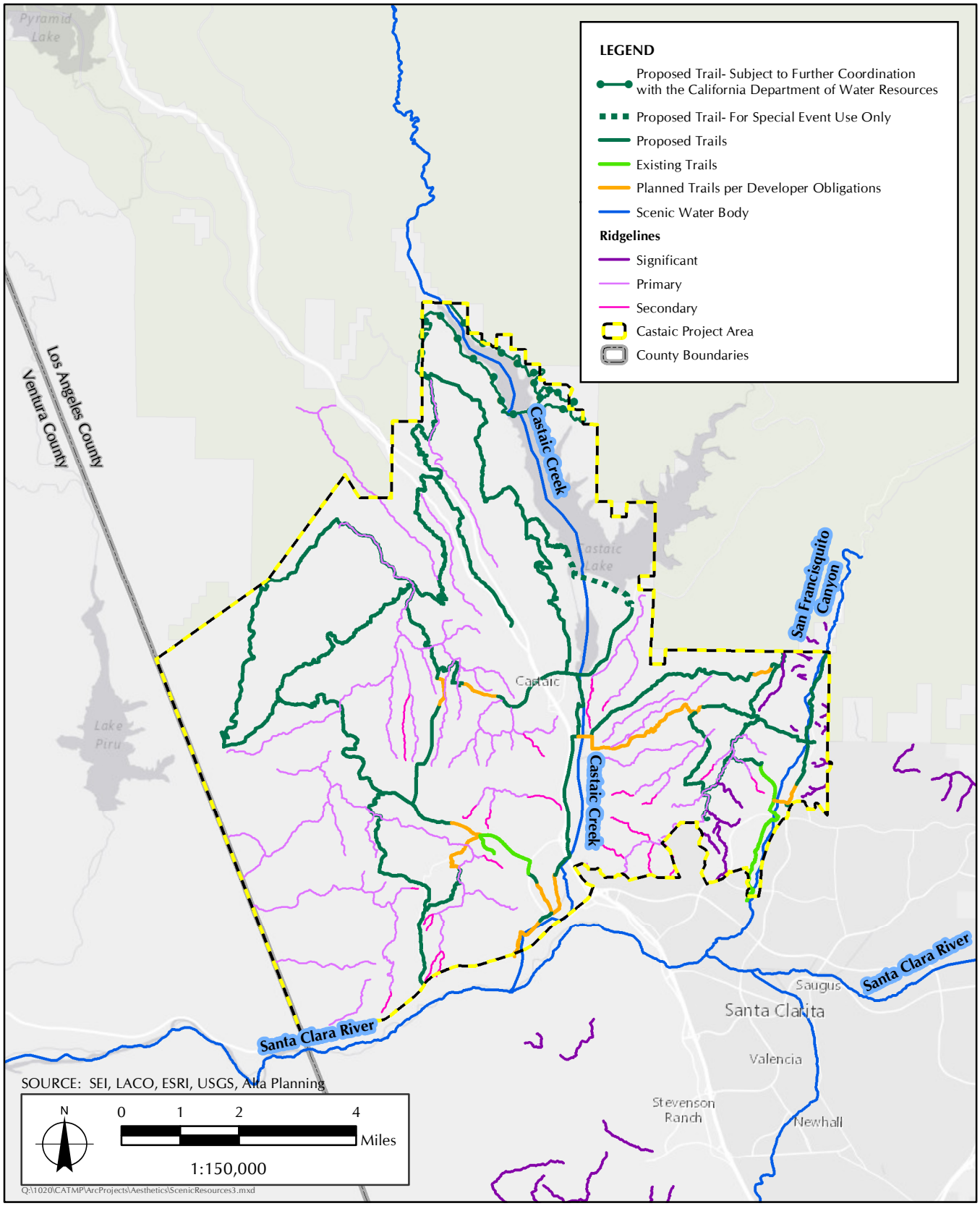

FIGURE 12B

Scenic Resources - Santa Clarita Valley Area Plan Designated Scenic Resources

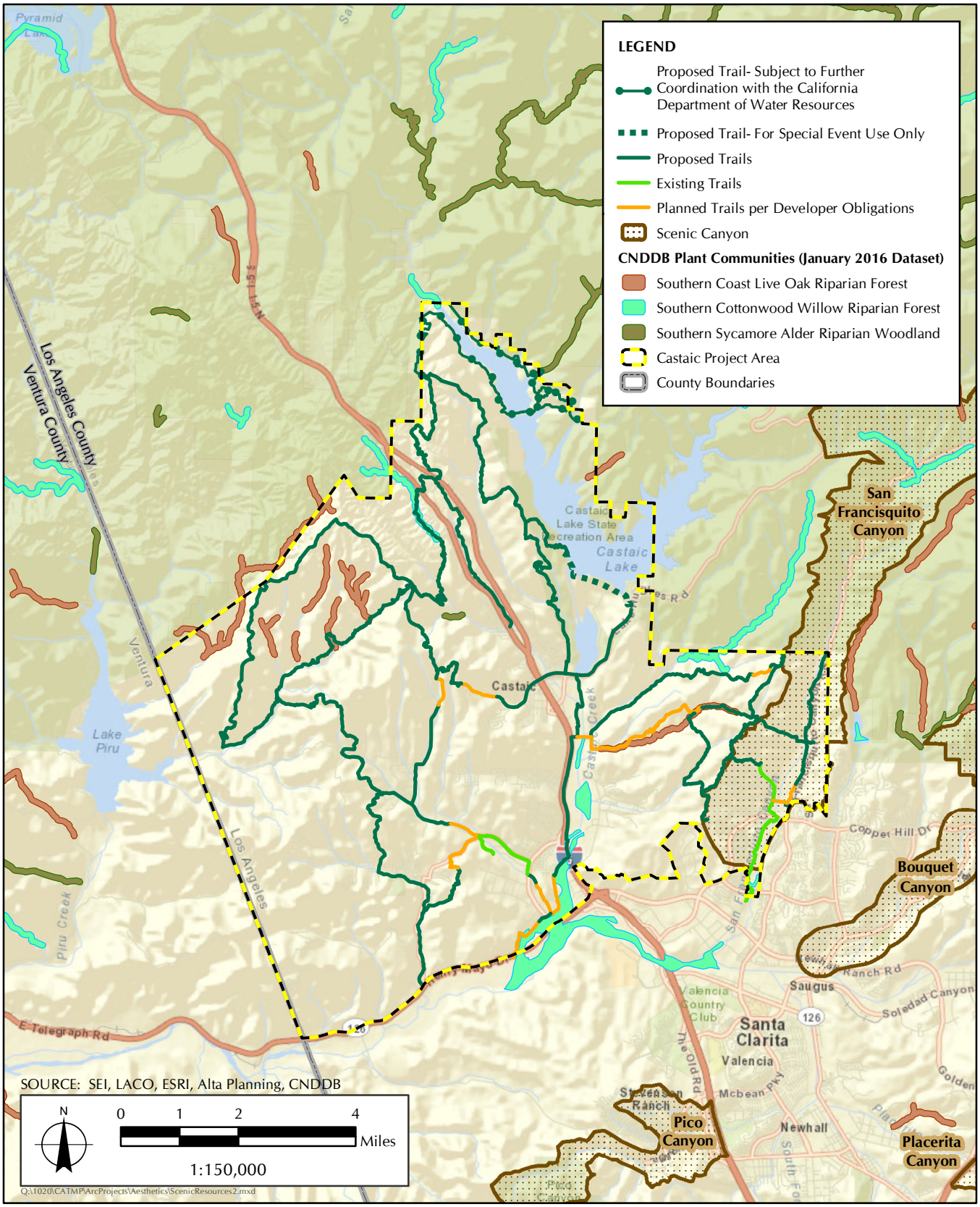

FIGURE 12C

Scenic Resources - Santa Clarita Valley Area Plan Designated Scenic Resources

County Designated Town and Country Scenic Drives

There are 16 County-designated Town and Country Scenic Drives located within a 15-mile radius of the Castaic project area, including a portion of the I-5 freeway, Old Ridge Route Road, and Lake Hughes Road within the Castaic project area (see Figure 12):

1) Northern segment of Golden State Freeway/I-5 (within study area)
2) Old Ridge Route Road (within study area)
3) Lake Hughes Road (within study area)
4) Pine Canyon Road (north of study area)
5) Three Points Road (north of study area)
6) San Francisquito Canyon Road
7) Bouquet Canyon Road (east of study area)
8) Spunky Canyon Road (northeast of study area)
9) Antelope Valley Freeway (east of study area)
10) Soledad Canyon Road (east of study area)
11) Little Tujunga Road (southeast of study area)
12) West Lancaster Road/Lancaster Road (north of study area)
13) Gorman Post Road (north of study area)
14) Munz Ranch Road (north of study area)
15) Johnson Road (north of study area)
16) Elizabeth Lake Road (north of study area)

A viewshed analysis was conducted using ArcGIS to evaluate the potential visibility level of the Castaic project area from these 16 designated Town and Country Scenic Drives.[49] It was determined that approximately 44.2 percent of the Castaic project area (including Castaic Lake, Grasshopper Canyon, Marple Canyon, the community of Castaic, Castaic Valley, Hasley Canyon, portions of the Santa Felicia SEA, Villa Canyon, ridgelines between Tapia Canyon and Wayside Canyon, ridgelines between Tapia Canyon and Charlie Canyon, and San Francisquito Canyon) would be visible from designated Town and Country Scenic Drives, due to the intervening topography of the ridges and canyons within the study area. It should be noted that a viewshed analysis evaluates visibility based solely on topographic data, and the presence of large trees, large shrubs, buildings, and infrastructure between these designated Town and Country Scenic Drives and the study area would be expected to reduce the potential visibility level further than this estimate.

Santa Clarita Valley Area Plan Scenic Resources

The Conservation Element of the Santa Clarita Valley Area Plan has identified the following relevant 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 12):[50]

[49] Sapphos Environmental, Inc. 17 February 2016. Viewshed analysis calculated using 10-foot DEM data in ArcGIS.

[50] County of Los Angeles. 2012. *Santa Clarita Valley Area Plan, 2012*. Available at: http://planning.lacounty.gov/view/santa_clarita_valley_area_plan/

- **Scenic Canyons,** which have remained undeveloped and support a variety of natural habitats: One of the seven scenic canyons identified by the Santa Clarita Valley Area Plan is located within the study area:
  - San Francisquito 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. These woodlands include:
  - **Southern Coast Live Oak Riparian Forest**
    - Santa Felicia Significant Ecological Area
    - North of Castaic Lake
    - Tapia Canyon
  - **Southern Cottonwood Willow Riparian Forest**
    - Violin Canyon northeast of Palomas Canyon
    - Charlie Canyon east of Castaic Lagoon
    - Castaic Valley from Charlie Canyon south to Santa Clara River
  - **Southern Sycamore Alder Riparian Woodland**
    - Elderberry Canyon near Castaic Lake
    - Violin Canyon south of Palomas Canyon

- **Scenic Water Bodies,** which provide scenic visual relief from urbanization as well as habitat for wildlife. Three of the 11 scenic water bodies identified by the Santa Clarita Valley Area Plan are located within the study area:
  - Santa Clara River and its major tributaries:
    - Castaic Creek
    - San Francisquito Canyon
    - South Fork of the Santa Clara River

- **Significant Ridgelines,** which create a sense of place for each neighborhood:
  - 84 Primary Ridgelines
  - 22 Secondary Ridgelines
  - 23 Significant Ridgelines (all near/within scenic San Francisquito Canyon)

City of Los Angeles Designated Scenic Highways

There are 17 City of Los Angeles–designated scenic highways within a 15-mile radius of the Castaic project area (see Figure 12):

1) Balboa Blvd.
2) Brand Blvd.
3) Corbin Ave.
4) Lassen St.
5) Lurline Ave.
6) Mason Ave.
7) Mason St.
8) Plummer St.
9) Porter Ranch Dr.
10) Reseda Blvd.
11) Rinaldi St.

12) Santa Susana Pass Rd.
13) Sepulveda Blvd.
14) Sesnon Blvd.
15) Tampa Ave.
16) Valley Circle Blvd.
17) White Oak Ave.

A viewshed analysis was conducted using ArcGIS to evaluate the potential visibility level of the Castaic project area from these City-designated scenic highways.[51] It was determined that the entire Castaic project area would not be visible from any of the City-designated scenic highways due to the intervening topography of the Santa Susana Mountains between these highways and the study area.

Shadows, Light, and Glare

The Castaic project area is generally rural, with suburban areas typically containing single-story to two-story residences. Commercial and industrial buildings within the study area, which are generally surrounded by parking lots and landscaping that provide a buffer between the buildings and potential shadow sensitive land uses.

Within Los Angeles County, the major sources of nighttime sky glow are cities, transportation corridors, and established communities. 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, within the vicinity of the Castaic project area, as with the nearby City of Santa Clarita, the communities of Castaic (near Castaic Lake) and Valencia (near the City of Santa Clarita), San Francisquito Canyon, and the industrial Castaic Junction area in the southeastern portion of the Castaic project area experience a high level of existing nighttime sky glow (Figure 13, *Existing Light Levels at Night*).[52] Between 2012 and 2016, residential development in the community of Valencia has expanded the existing light levels at night, which is not located within a CSD or the Los Angeles County Rural Outdoor Lighting District (see Figure 7).

Additionally, existing facilities such as Chiquita Canyon Landfill near State Route 126, Pitchess Detention Center, and the two freeways within the study area have street lights that contribute to isolated sources of nighttime light and glare. The community of Val Verde experiences a moderate level of existing nighttime sky glow, and the community of Hasley Canyon experiences a low to moderate level of nighttime light. Towards the Los Padres National Forest, the Angeles National Forest, and the Ventura County line (to the north and west), nighttime light levels are low to very low due to the rural character of the area and lighting restrictions within the Los Angeles County Rural Outdoor Lighting District. Within Los Angeles County, the major sources of daytime glare are paved roads, reflective building and infrastructure surfaces (e.g., glass curtain walls), the reflections from motor vehicles, and reflective water bodies. The Castaic project area ranges from a low daytime glare level toward the Santa Felicia SEA where there are fewer paved roads with low traffic levels and few structures, to a moderate to high daytime glare level towards the City of Santa Clarita, Castaic Lake, and the Interstate 5 freeway, due to the presence of paved roads; commercial, industrial, and residential development and infrastructure; low to moderate vehicle traffic levels on major roads and freeways; and the presence of reflective water bodies.

[51] Sapphos Environmental, Inc. 17 February 2016. Viewshed analysis calculated using 10-foot DEM data in ArcGIS.

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

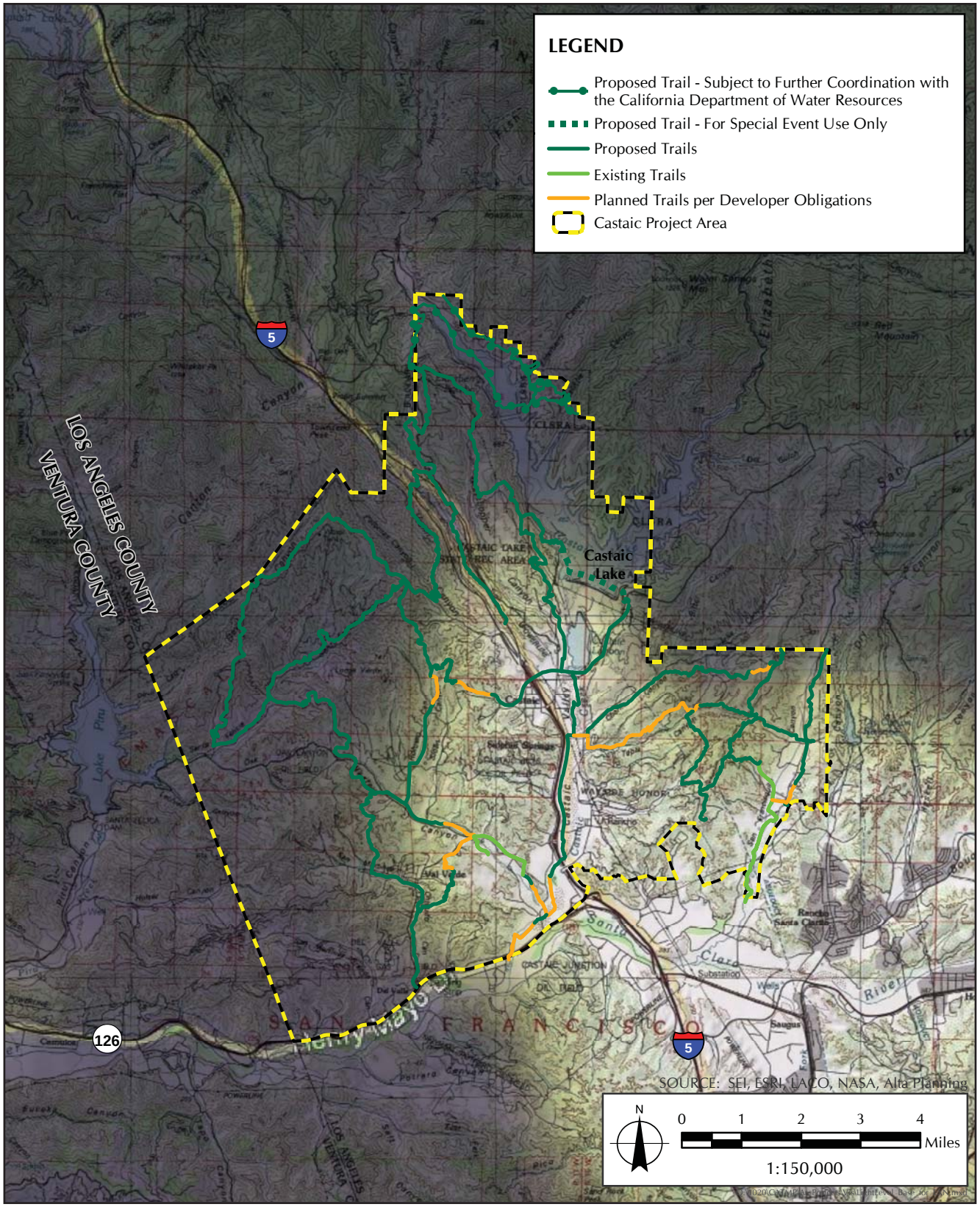

FIGURE 13
Existing Light Levels at Night

SIGNIFICANCE THRESHOLDS

The potential for trails constructed within the Castaic project area, including related facilities, to result in impacts related to aesthetics was analyzed in relation to the questions in the County of Los Angeles Department of Parks and Recreation's Environmental Checklist Form and Appendix G of the State CEQA Guidelines.[53] Trails and related facilities constructed within the Castaic project area would be considered to have a significant impact to aesthetics when the potential for any one of the following five thresholds occurs:

Would the project:

a) Have a substantial adverse effect on a scenic vista?
b) Be visible from or obstruct views from a regional riding or hiking trail?
c) Substantially damages scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?
d) Substantially degrades the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features?
e) Create a new source of substantial shadows, light or glare that would adversely affect day or nighttime views in the area?

CONCLUSIONS, RECOMMENDATIONS, AND CONSIDERATIONS FOR TRAIL PLANNING

Scenic Vistas

The proposed project would result in no impacts to aesthetics in regard to a substantial adverse effect on a scenic vista. There are no designated scenic vista points within the Castaic project area; nor is the Castaic project area visible from scenic vista points designated within the Los Angeles County General Plan 2035 or by Caltrans.[54,55] Therefore, there would be no impacts to scenic vistas as a result of the proposed project, and no mitigation would be required.

Views from a Regional Riding or Hiking Trail

The proposed project would result in less than significant impacts to aesthetics in regard to visibility or obstructing views from a regional riding or hiking trail. The proposed project has the potential to be barely visible from the PCT, which is approximately 8.5 miles north of the Castaic project area. A viewshed analysis was conducted which determined that approximately 17.0 percent of the Castaic project area (including proposed trails on northeastern aspects near the Elderberry Forebay, the western edge of Castaic Lake, within Santa Felicia SEA, Castaic Valley, and Hasley Canyon) would potentially be visible from the PCT (Figure 14, *Viewshed Map – Pacific Crest National Scenic Trail*).

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

[54] The County has designated scenic vistas in the Santa Monica Mountains land use plans, which are located more than 15 miles south of the Castaic project area. As the 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

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

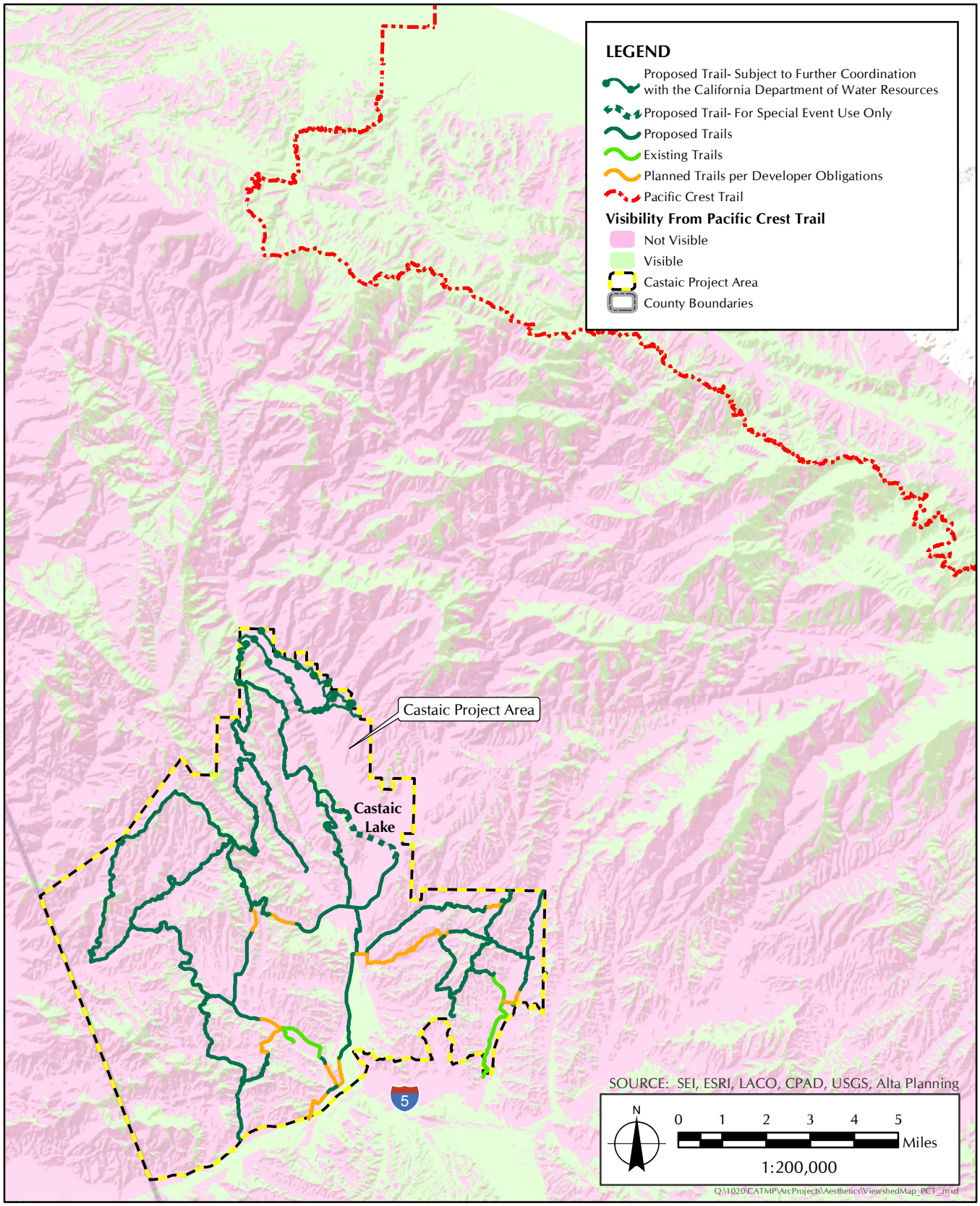

FIGURE 14

Viewshed Map - Pacific Crest National Scenic Trail

According to the viewshed analysis based on topography, none of the existing trail segments are visible from the PCT due to distance and intervening topography; approximately 16.2 percent (approximately 1.1 miles) of the approved subdivision trail segments have the potential to be visible from the PCT with clear atmospheric conditions and no intervening trees or shrubs; and approximately 17.8 percent (16.0 miles) of the proposed trails in the proposed project have the potential to be visible from the PCT with clear atmospheric conditions and no intervening trees or shrubs. It should be noted that a viewshed analysis evaluates visibility based solely on topographic data, and the presence of large trees, large shrubs, buildings, and infrastructure between the PCT and the study area would be expected to reduce the potential visibility level further than this estimate. Furthermore, trails and supporting facility structures would not be expected to dramatically alter the form of ridgelines within the study area and would therefore not be likely to be visible from, or obstruct views from, the PCT.

There are three existing trail segments within the Castaic project area that are part of the County's Regional Trail System, which have a maximum length of approximately 140 feet of consecutive County trail. Although the proposed project would be visible from these existing regional trail segments because new trail segments would be located adjacent to the existing segments, it would enhance the existing recreational experience and trail system by providing connections between the existing trail segments that would be visible from these trails. The proposed project, which would involve new trails, staging areas, bike skills parks, restrooms, parking lots, and other related trail facilities, would be designed to enhance views from recreational trails and would not be expected to obstruct views from existing County trails or the PCT. Therefore, there would be less than significant impacts to regional riding or hiking trails as a result of the proposed project, and no mitigation would be required.

Scenic Resources within a State Scenic Highway

The proposed project would result in significant impacts to aesthetics in regard to substantial damage to scenic resources within a state scenic highway corridor. The proposed project would not be visible from the nearest officially designated state scenic highways—Angeles Crest Highway (State Route 2) and Maricopa Highway (State Route 33)—due to distance and intervening topography. Angeles Crest Highway is located over 24 miles east of the Castaic project area, and Maricopa Highway is located over 28 miles west of the study area.

The proposed project would be located within the scenic highway corridor of the nearest eligible state scenic highways—Henry Mayo Drive (State Route 126) and the Golden State Highway (Interstate 5)—because the proposed trails would cross over Henry Mayo Drive to connect to the Santa Clara River Trail and cross under the Golden State Highway to connect recreational trails from the Castaic Lake area to the western portion of the study area. A viewshed analysis was conducted that determined that only approximately 17.9 percent of the Castaic project area (including proposed trails on southern and southwestern aspects near San Martinez Canyon, Hasley Canyon, Castaic Valley, and San Francisquito Canyon) would be visible from these four eligible state scenic highways (Figure 15, *Viewshed Map – Eligible State Scenic Highways*).

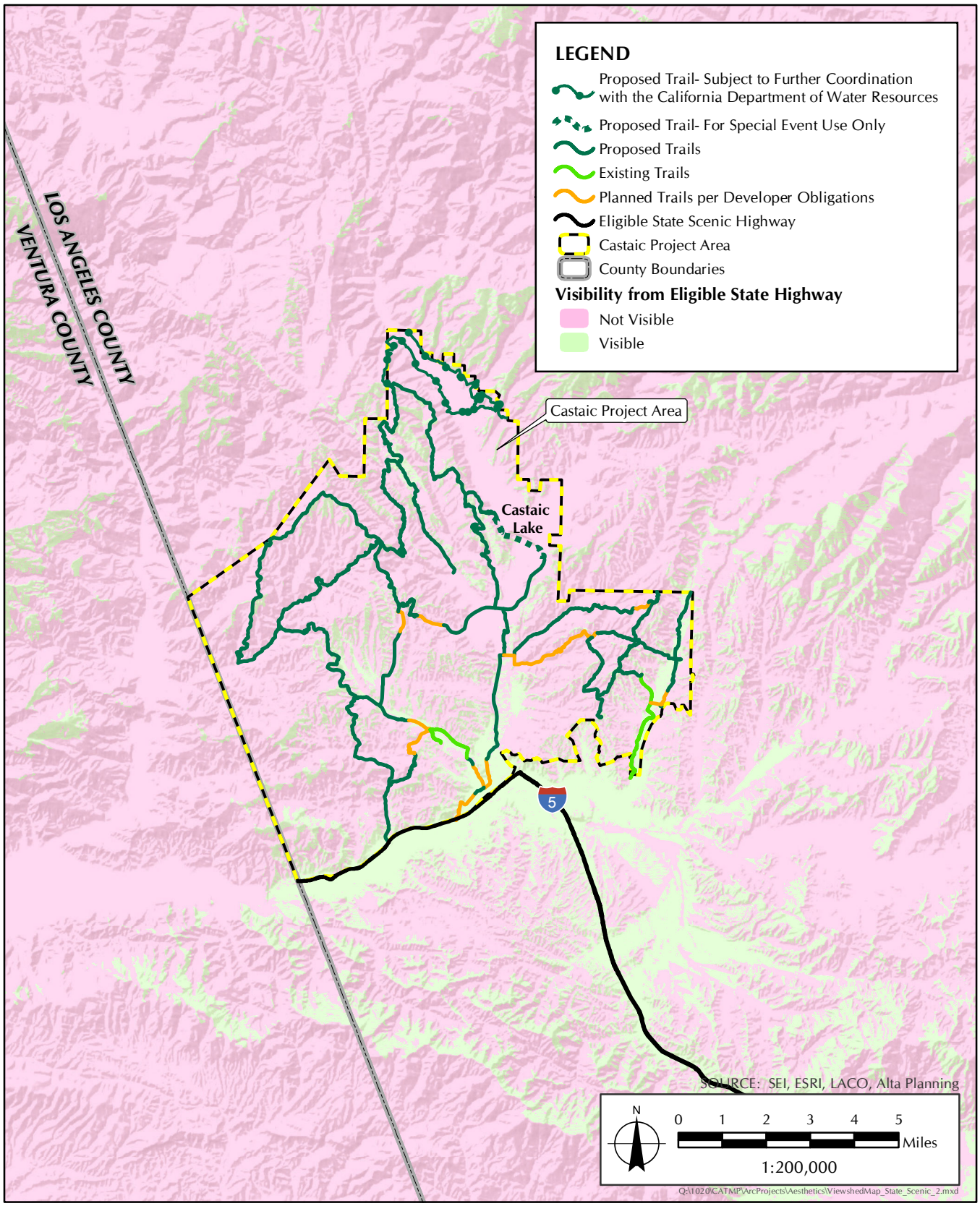

FIGURE 15

Viewshed Map - Eligible State Scenic Highways

According to the viewshed analysis based on topography, approximately 57.4 percent (approximately 2.6 miles) of the existing trail segments are visible from eligible state scenic highways; approximately 34.5 percent (approximately 2.2 miles) of the approved subdivision trail segments have the potential to be visible from eligible state scenic highways; and approximately 17.5 percent (15.7 miles) of the proposed trails in the proposed project have the potential to be visible from eligible state scenic highways. As shown at KOP 1 and KOP 2, the landscape along the Henry Mayo Drive visual corridor contains trees and rock outcroppings that could be affected by the proposed project (see Appendix A). There is a potential for the proposed project to affect the health of existing coast live oak trees and other protected trees that are located along the proposed trail alignments and supporting facilities that are important to the character of the scenic highway corridors. The proposed project involves trail segments within scenic San Francisquito Canyon (within the wash), along scenic water bodies including Castaic Creek and San Francisquito Canyon), and through protected forests/woodlands: two Southern Cottonwood Willow Riparian Forest areas (segments IP2, IP3, CC2, CC3, CC4, CC5, and CC6), one Southern Sycamore Alder Riparian Woodland area (EF4), and three Southern Coast Live Oak Riparian Forest areas (SA2, TC2, and TC3). Although the construction of trails within these scenic resource areas and sensitive woodland areas would not result in significant impacts to visual character because trail construction can be conducted in a low-impact manner in accordance with the County Trails Manual, there is a potential for significant impacts to occur if scenic trees are removed. Therefore, there would be a potential for significant impacts to scenic resources within a state scenic highway as a result of the proposed project, and mitigation would be required.

Mitigation Measures

Mitigation Measure AES-1: Trails and supporting facilities within a one-mile radius of officially designated and eligible state scenic highways shall be designed, constructed, and maintained (where construction equipment is involved) to avoid damaging or removal of scenic resources, including but not limited to trees, rock outcroppings, and historic buildings, within the scenic highway corridor.

Mitigation Measure AES-2: Trails and supporting facilities shall be designed, constructed, and maintained to avoid the drip line of any coast live oak trees and other protected trees that are located along the proposed trail alignments, in order to maintain the visual character of the area. Best Management Practices shall be used during construction and trails maintenance activities to protect the root structures of protected trees:

- A Worker Education and Awareness Program shall inform all construction workers of County Ordinances protecting oak trees and the sensitivity of roots to damage from compaction or excessive water.
- Drip line of oak trees shall be designated as off-limits during construction on all construction drawings and diagrams.
- Fencing and/or flagging shall be used to delineate the drip line of the trees as off-limits during trail construction.
- On-site monitors shall be utilized for periods when trail construction will be undertaken within 100 feet of the drip line of the oak trees.
- If a protected tree must be removed, the same species shall be replaced at a minimum of a 1:1 ratio.

Level of Significance after Mitigation

Impacts to aesthetics in regard to scenic resources within a state scenic highway corridor would be less than significant after implementation of mitigation measures.

Visual Character and Quality

The proposed project would result in less than significant impacts to aesthetics in regard to substantial degradation of the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features. The Castaic project area is characterized by rugged topography, steep ridges, deep canyons with wide creek beds that are tributaries to the Santa Clara River, and several ridgeline and canyon trails and fire roads. The Castaic project area is generally rural and includes the existing communities of Castaic, Castaic Junction, Val Verde, Hasley Canyon, Hillcrest, and Paradise Ranch. The Castaic project area contains several ridges and canyons and approximately 4.9 miles of existing County trails. Trails and related supporting facilities would generally not be expected to substantially degrade the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, or character because they would be low to the ground, spaced and designed in a pattern that follows the natural topography and existing paved and dirt roads, and be consistent with the scale and character of the rural Castaic project area that already contains several dirt access roads and fire roads throughout the mountainous and hilly terrain.

Trails and related supporting facilities are generally consistent with the existing visual character of the Castaic project area and surrounding areas. Although the Santa Clarita Valley Area Plan only directly mentions trails within the Parks and Recreation land use designation, the land use policy defers to the specific allowable uses and development standards determined by underlying zoning designations and adopted Specific Plans. The County zoning designations for the Castaic project area are predominantly heavy agricultural and open space, with two specific plan areas (Northlake Specific Plan and Newhall Specific Plan) and land designated with single-family residence, residential planned development, and restricted heavy manufacturing zones also comprising portions of the approximately 78-square-mile Castaic project area.[56] The Heavy Agricultural Zone, Specific Plan Zone, manufacturing zones, Unlimited Commercial Zone, Neighborhood Business Zone, and Watershed Zone permit riding and hiking trails; the Open Space, Light Agricultural Zone, Manufacturing Industrial Planned Development Zone, Commercial Planned Development Zone, and residential zones in the Castaic project area allow for riding and hiking trails if they have been approved by the Planning Director of the County of Los Angeles Department of Regional Planning (Director) and riding and hiking trails may be allowed in the Institutional Zone upon approval of a conditional use permit (CUP).

Consistent with planning guidelines provided by the County Trails Manual, conceptual trail alignments have been planned to maintain the characteristic rugged aesthetic of the trail. The proposed project has the potential to enhance the trail's visual quality through clarified trail designation, maintenance, and revegetation along constructed portions of the trail with native plants that may not have survived construction of subdivisions. The experience of recreation users would be enhanced through the incorporation of informational signs at trail intersections to provide orientation. The County Trail Manual specifies desired minimum trail widths for multi-use

[56] Municode. Accessed 12 February 2016. Municode Library: County of Los Angeles, CA. Title 22 – Planning and Zoning. Available at: https://www.municode.com/library/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT22PLZO

trails (accommodating bicyclists, hikers, and equestrians) at 5 feet, wherever possible, with 6- to 10-foot-wide turn outs in high-traffic areas.[31] Where trails of up to 10 feet wide are developed or existing trials are expanded up to 10 feet wide, impacts to the visual character of the viewshed from surrounding residences can be avoided through the incorporation of native vegetation as a screening material. Restoration of native vegetation along conceptual trail alignments would have the potential to enhance the visual character within the Castaic project area. Preserving existing native vegetation adjacent to the trail would protect the aesthetic quality of the Castaic project area.[57]

Trails proposed as a result of the proposed project would be consistent with the visual character of the Castaic project area and surrounding areas. The visual nature of the Castaic project area is dominated by native and non-native vegetation, transmission corridors, roads, isolated structures, suburban and industrial/commercial developed areas, and trails (see Attachment A in Appendix A). The proposed trail improvements are compatible with the existing visual character of the Castaic area. Several official trails and many unofficial trail segments currently traverse the Castaic project area. Hiking and riding are passive recreation activities that are compatible with the land use allowed within the two adopted Significant Ecological Areas (SEAs) that encompass small portions of the Castaic project area. The proposed trail alignments would not substantially degrade or alter the existing visual character of the Castaic area. As the majority of trail designations in the proposed project already exist as access roads, fire roads, right-of-ways, and desire line trails (unofficial trails created where a significant number of people want to travel), trail construction would be relatively minor, predominantly consisting of realignments, improvements, and signage. Therefore, future trails anticipated in the proposed project would not be expected to result in significant impacts to aesthetics related to substantial degradation of the existing visual character of the site and its surroundings.

A viewshed analysis was conducted using ArcGIS to evaluate the potential visibility level of the Castaic project area from County-designated Town and Country Scenic Drives and City-designated scenic highways.[58] It was determined that the entire Castaic project area would not be visible from any of the City-designated scenic highways due to the intervening topography of the Santa Susana Mountains between these highways and the study area. The viewshed analysis for County-designated Town and Country Scenic Drives determined that approximately 44.2 percent of the Castaic project area (including proposed trails in San Francisquito Canyon, Castaic Valley, Hasley Canyon, the community of Castaic, the Santa Felicia SEA, near Castaic Lake, and within the vicinity of Elderberry Forebay) would be visible from the 16 County-designated Town and Country Scenic Drives located within a 15-mile radius of the Castaic project area (Figure 16, *Viewshed Map – County Designated Town and Country Scenic Drives*).

[57] County of Los Angeles Department of Parks and Recreation. Adopted by the Board of Supervisors on May 17, 2011. Revised June 2013. County of Los Angeles Trails Manual. Available at: https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

[58] Sapphos Environmental, Inc. 17 February 2016. Viewshed analysis calculated using 10-foot DEM data in ArcGIS.

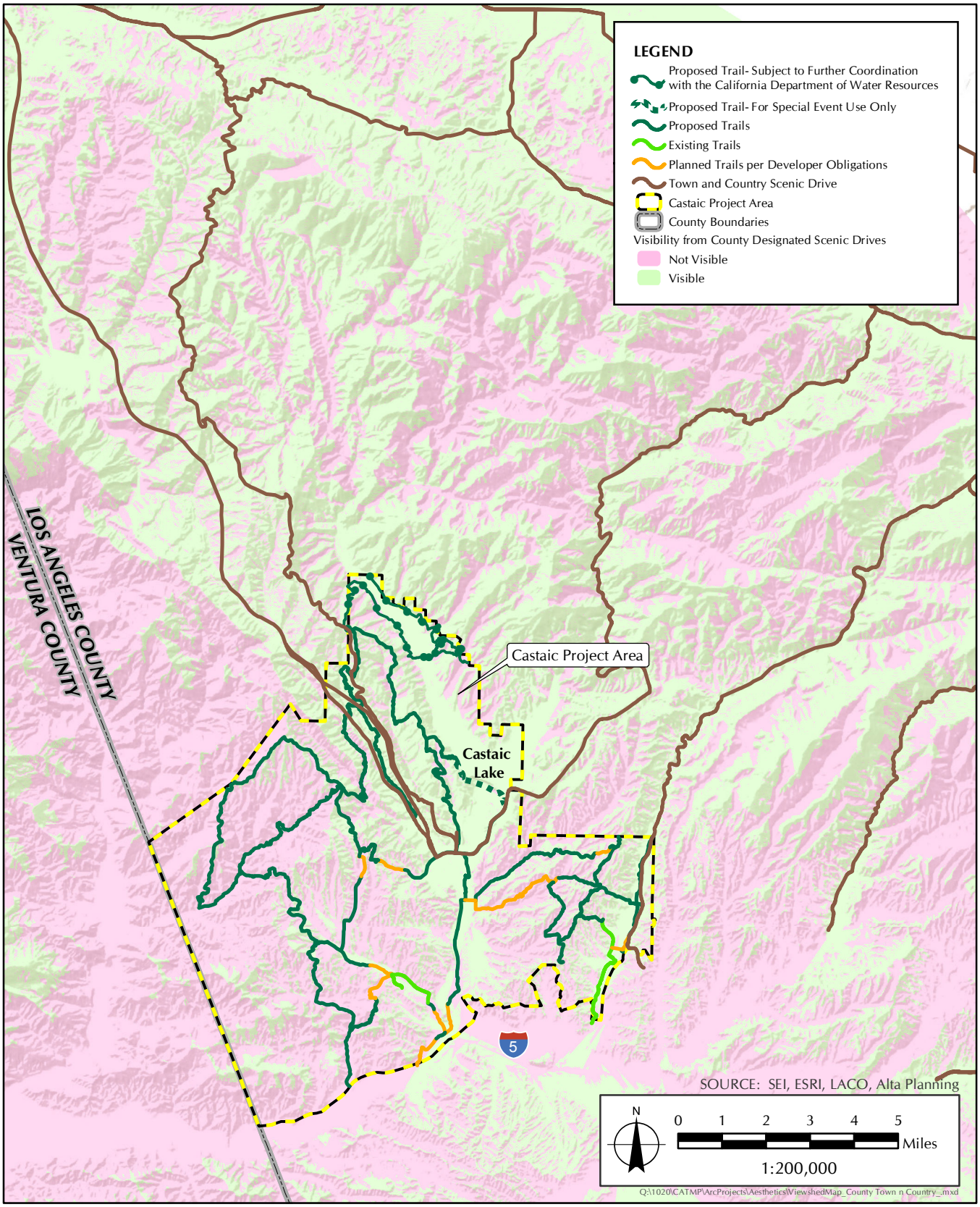

FIGURE 16

Viewshed Map - County Designated Town and Country Scenic Drives

According to the viewshed analysis based on topography, approximately 63.2 percent (approximately 2.9 miles) of the existing trail segments are visible from Town and Country Scenic Drives, approximately 27.3 percent (approximately 1.8 miles) of the approved subdivision trail segments have the potential to be visible from Town and Country Scenic Drives, and approximately 55.7 percent (50.1 miles) of the proposed trails in the proposed project have the potential to be visible from Town and Country Scenic Drives. It should be noted that a viewshed analysis evaluates visibility based solely on topographic data, and the presence of large trees, large shrubs, buildings, and infrastructure between the Town and Country Scenic Drives and the study area would be expected to reduce the potential visibility level further than this estimate. Furthermore, trails and supporting facility structures would not be expected to dramatically alter the form of ridgelines within the study area, and would therefore not be likely to be substantially visible from Town and Country Scenic Drives over five miles (foreground view) from the study area.

Trails are normally considered a compatible use within an SEA. Trail development within a Significant Ecological Area would likely require preparation of a Biota Report to demonstrate that the trail could be constructed, operated, and maintained in a manner that avoids significant impacts to the properties for which the SEA was designated, inclusive of the visual character of the area.

Therefore, the proposed project would result in less than significant impacts in regard to degradation of the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features as a result of the proposed project, and no mitigation would be required.

Shadows, Light, and Glare

The proposed project would result in less than significant impacts to aesthetics in relation to the creation of a new source of substantial shadows, light or glare. As the Castaic project area is generally rural, with suburban areas typically containing single-story to two-story residences and commercial and industrial buildings generally surrounded by parking lots and landscaping that provide a buffer between the buildings and potential shadow sensitive land uses, the structures considered within the proposed project would not be expected to create a new source of substantial shadows. Facilities such as restrooms, shade structures, and parking lots in support of the proposed trails would not be expected to be taller than a two-story building. Where buildings included in the plan are part of subdivision agreements, they would be designed to avoid creating substantial shadows on the new residences.

Approximately 62 percent of the Castaic project area is located within the County's Rural Outdoor Lighting District and subject to restrictions in terms of light and glare at night to maintain dark skies at night for the residents and wildlife in the district (see Figure 7).[59] Under the ordinance, outdoor lighting shall be fully shielded on properties located in residential, agricultural, open space, or watershed zones.[60] Exterior lighting on restrooms and other trail related supporting facilities would be required to conform to the ordinance. As shown in Figure 13, the remaining 38 percent of the

[59] County of Los Angeles Department of Regional Planning. Accessed 16 February 2016. *GIS-NET3 Public*. Planning & Zoning Information for Unincorporated LA County. Available at: http://gis.planning.lacounty.gov/GIS-NET3_Public/Viewer.html

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

Castaic project area that is not located within the County's Rural Outdoor Lighting District is predominantly characterized by a high level of existing nighttime sky glow, including the nearby City of Santa Clarita, the communities of Castaic (near Castaic Lake) and Valencia (near the City of Santa Clarita), and the industrial Castaic Junction area in the southeastern portion of the Castaic project area. Due to the high level of existing nighttime sky glow, impacts from exterior lighting on restrooms and other trail related supporting facilities, would be less than significant.

The hours of operation for Los Angeles County trails are typically from dawn to dusk (County Code 17.04.330). Therefore, the Multi-Use Trails Plan does not include installation of nighttime lighting along the proposed trails; nor would the trails include nighttime safety lights that may affect nighttime views or add an additional source of light to the surrounding area. For safety purposes and to avoid disturbing the neighborhood from which the site is accessed, construction would not be conducted at night. In accordance with the guidelines in Section 4.3.18, *Lighting*, of the County Trails Manual, where lighting features are provided for safety and wayfinding reasons, lighting would be installed in a manner to be non-intrusive to adjacent uses, avoid detracting from a natural outdoors experience for trail users, and directed downward to avoid light pollution or spillover in general.[61] As this guideline is independent of whether the trail segment or related supporting facility is located within the County's Rural Outdoor Lighting District, the proposed project, which would comply with the County Trails Manual, would not be expected to result in a significant new source of nighttime light.

The trail alignments under the Multi-Use Trails Plan would be predominantly natural surface trails that would not create a new source of substantial glare. The proposed project also would include interpretive signage, small structures, new parking lots, and other related supporting facilities which would have the potential to create a source of daytime glare where glass, metal, asphalt, and additional vehicles are involved. However, these facilities would be small and are anticipated to be constructed in the areas with an existing moderate to high daytime glare level, towards the City of Santa Clarita, Castaic Lake, and the Interstate 5 freeway, which contain paved roads; commercial, industrial, and residential development and infrastructure; moderate to high vehicle traffic levels on major roads and freeways; and the presence of reflective water bodies. Therefore, the supporting facilities would not be expected to create a new source of substantial glare. Therefore, the proposed project would not in less than significant impacts to shadows, light and glare, and no mitigation would be required.

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Appendix B

Air Quality Analysis

Sapphos environmental inc.

May 13, 2016
Job Number: 1020-085
Castaic Area Multi-Use Trails Plan

MEMORANDUM FOR THE RECORD
2.6 1020-085.M11

TO: County of Los Angeles
Department of Parks and Recreation
(Ms. Olga Ruano, Mr. Zachary Likins, Mr. Frank Moreno)

FROM: Sapphos Environmental, Inc.
(Ms. Laura Male and Ms. Vicky Hsu)

SUBJECT: Air Quality Analysis for Castaic Area Multi-Use Trails Plan

FIGURES:

1. Regional Vicinity Map
2. Local Vicinity Map
3. Proposed Trails Plan
4. Topographic Maps
5. Proposed Trail Related Facility Locations
6. Sensitive Receptors

APPENDIX: A. CalEEMod Output for Castaic Area Multi-Use Trails Plan

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EXECUTIVE SUMMARY

This Memorandum for the Record (MFR) documents the results of the air quality analysis that was undertaken in support of the proposed Castaic Area Multi-Use Trails Plan (proposed project). The results of the air quality analysis will be used to support the County of Los Angeles in its role as the Lead Agency under the California Environmental Quality Act (CEQA) with primary discretionary land use authority related to consideration of the proposed project for approval. The potential for impacts to air quality have been analyzed in accordance with Appendix G of the State of State CEQA) Guidelines[1] and the County of Los Angeles (County) General Plan, Air Quality Element, and County of Los Angeles Department of Parks and Recreation.[2]

A reasonable worst-case scenario, including construction, operation, and maintenance of the entire proposed project, was analyzed using California Emissions Estimator Model, version 2013.2.2.

South Coast Air Quality Management District Air Quality Plan and Air Quality Element of the County of Los Angeles 2035 General Plan Update

The construction, operation, and maintenance of the proposed project would not be expected to violate any air quality standard or contribute substantially to an existing or projected air quality violation in the South Coast Air Basin; therefore, there would be no impact to air quality in relation to conflicts with the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP). The proposed project is also consistent with the Air Quality Element of the County of Los Angeles 2035 General Plan. The proposed project will reduce harmful air pollutants by reducing vehicle miles traveled (VMT) as the distance people have to travel to recreational trails is decreased. Therefore, there would be no impact and no contribution to cumulative impacts for air quality in relation to conflicting with the County of Los Angeles 2035 General Plan.

Criteria Air Pollutants

The Castaic project area is a non-attainment area for ozone (O_3), fine particulate matter ($PM_{2.5}$), and particulate matter (PM_{10}). The SCAQMD AQMP accounts for construction within the air basin. The operation and maintenance of the proposed project would not exceed thresholds of significance for criteria pollutants established by the SCAQMD. The direct, indirect, and contribution to cumulative impact related to criteria air pollutants would be less than significant.

Sensitive Receptors

There are 12,011 sensitive receptors located in the study area for air quality and an additional 5,318 sensitive receptors located within a 0.5-mile radius of the proposed project. Based on the CalEEMod results, construction, operation, and maintenance of the proposed project would not expose sensitive receptors to criteria pollutants in excess of Federal and State standards; therefore, there would be no impact.

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

[2] County of Los Angeles Department of Regional Planning. Adopted 6 October 2015. *Los Angeles County General Plan 2035*. Available at: http://planning.lacounty.gov/generalplan

Objectionable Odors

There would be no anticipated objectionable odors associated with the construction, operation, or maintenance of the proposed project; therefore, there are no direct, indirect, or cumulative impacts to air quality related to objectionable odors.

Direct or Indirect Generation of Greenhouse Gas Emissions

The proposed project is consistent with the goals, policies, and strategies related to active transportation and recreation, and conservation of open space lands specified in the Southern California Association of Governments 2016 Regional Transportation Plan/Sustainable Communities Strategy.[3] By providing improved recreation opportunities close to the 29,000 residents that live in the study area, the proposed project supports regional goals related to per capita reduction of vehicle miles travelled and associated greenhouse gas emissions; therefore, there would be no impact.

Plans, Policies, and Regulation Related to Reduction of Regional Greenhouse Gas Emissions

The proposed project is consistent with the goals, policies, and strategies related to active transportation and recreation, and conservation of open space lands specified in the Southern California Association of Governments 2016 Regional Transportation Plan/Sustainable Communities Strategy and Air Quality Element of the County of Los Angeles 2035 General Plan Update. The 2016 RTP/SCS PEIR states that the County of Los Angeles General Plan established a standard for parklands of four acres of local parkland and six acres of regional parkland per 1,000 county residents in unincorporated areas. As the Trails Plan study area is located in unincorporated Los Angeles County, this proposed project helps reach the RTP/SCS goal by providing more recreational opportunities near residents. Therefore, there would be no impact to plans, policies, or regulations related to the reduction of regional greenhouse gas emissions, and no contribution to cumulative regional conflicts with adopted plans, policies, and regulations.

[3] Southern California Association of Governments. 4 December 2015. *2016 Draft RTP/SCS*. Available at: http://scagrtpscs.net/Pages/details.aspx?list=Announcements&lid=14&source=/pages/news.aspx

INTRODUCTION

This MFR provides the County with the substantial evidence to make a determination that there would be no anticipated significant impacts resulting from the construction, operation, or maintenance of the proposed trail elements on air quality and greenhouse gas emissions. The proposed designation, improvement, operation, and maintenance of the trail segment constitute a project pursuant to CEQA. This MFR provides the requisite information related to air quality to support the County's decision-making process in relation to the proposed project.

PURPOSE

The purpose of this MFR is to support the County in the development of a multi-use trail plan that would minimize the impacts related to air quality and greenhouse gas emissions. It is understood that the County expects to move forward with the proposed project and seeks funding for construction, operation, and maintenance of the proposed project. This MFR provides the requisite information related to impacts on air quality to support the County's decision-making process in relation to the proposed project. The evaluation of the potential for the proposed project to result in significant impacts to air quality was undertaken in accordance with Appendix G of the State CEQA Guidelines and guidance from the Los Angeles Department of Parks and Recreation. This MFR presents the results of these efforts and provides impact analyses for the construction, use, and maintenance of the proposed project.

LOCATION

The Castaic project area encompasses approximately 75 square miles (approximately 48,107 acres) in the Castaic area of the Santa Clarita Valley in the northwestern portion of the unincorporated area of the County of Los Angeles (Figure 1, *Regional Vicinity Map*). The Santa Clarita Valley is centrally located between the San Gabriel Mountains to the east, the Sierra Pelona Mountains to the northeast, the Topatopa Mountains to the west, the San Emigdio Mountains and Tehachapi Mountains to the north, and the Santa Susana Mountains and Santa Monica Mountains to the south within the Transverse Ranges, a group of east-west trending mountains paralleling the Pacific Ocean between Santa Barbara and San Diego Counties. The proposed Castaic project area is composed of generally mountainous and valley terrain that abuts the Angeles National Forest to the north, the City of Santa Clarita to the southeast, California State Route 126 (Henry Mayo Drive) to the south, and Ventura County to the west (Figure 2, *Local Vicinity Map*). The Castaic project area, which is located in the Fifth Supervisorial District, includes a portion of the County-managed Castaic Lake State Recreation Area. The Trail Planning Study Area includes three existing County trails (approximately 4.90 miles), approximately 8.14 miles of planned trails per developer obligations, and approximately 89.90 miles of proposed trails (Figure 3, *Proposed Trails Plan*).

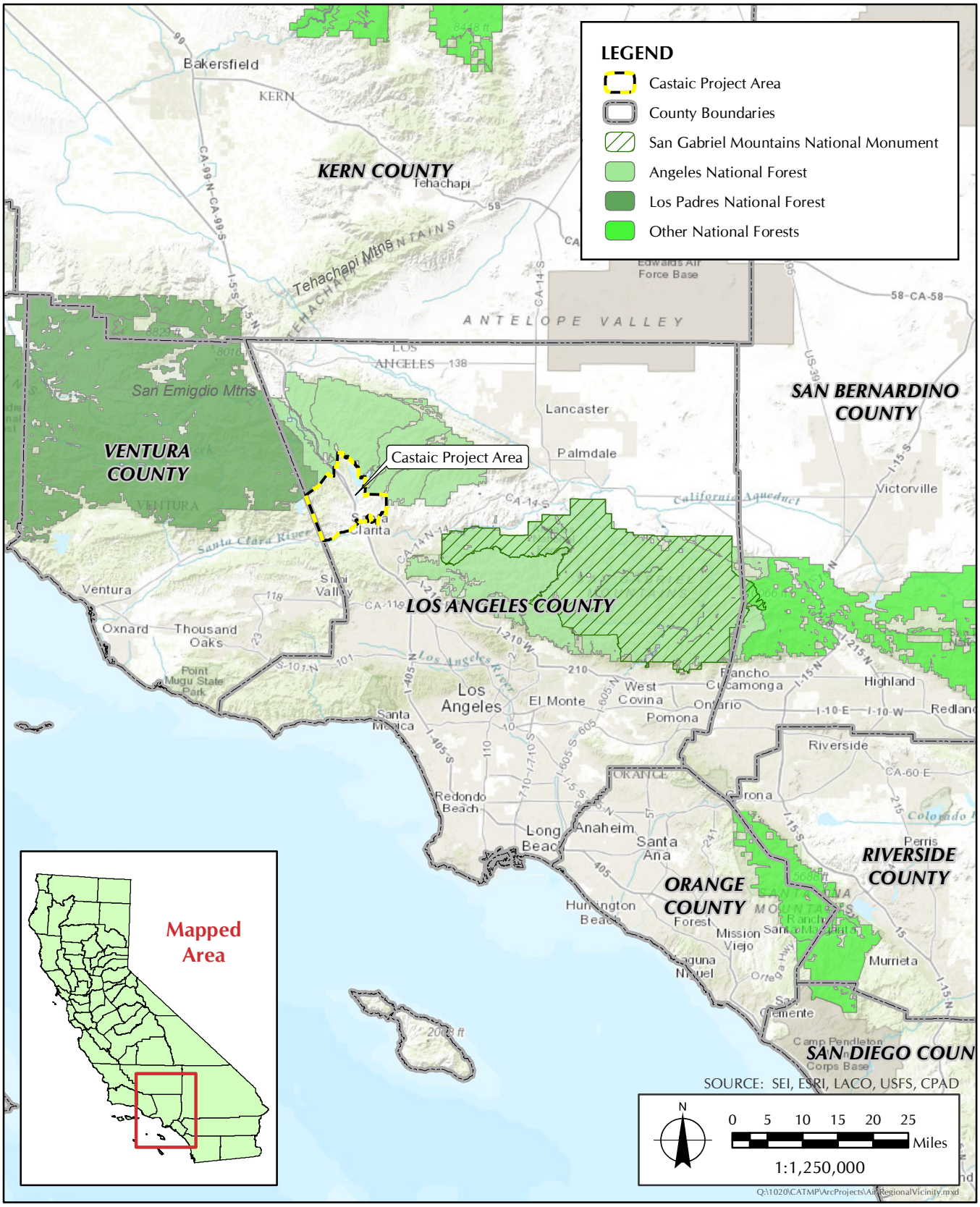

FIGURE 1

Regional Vicinity Map

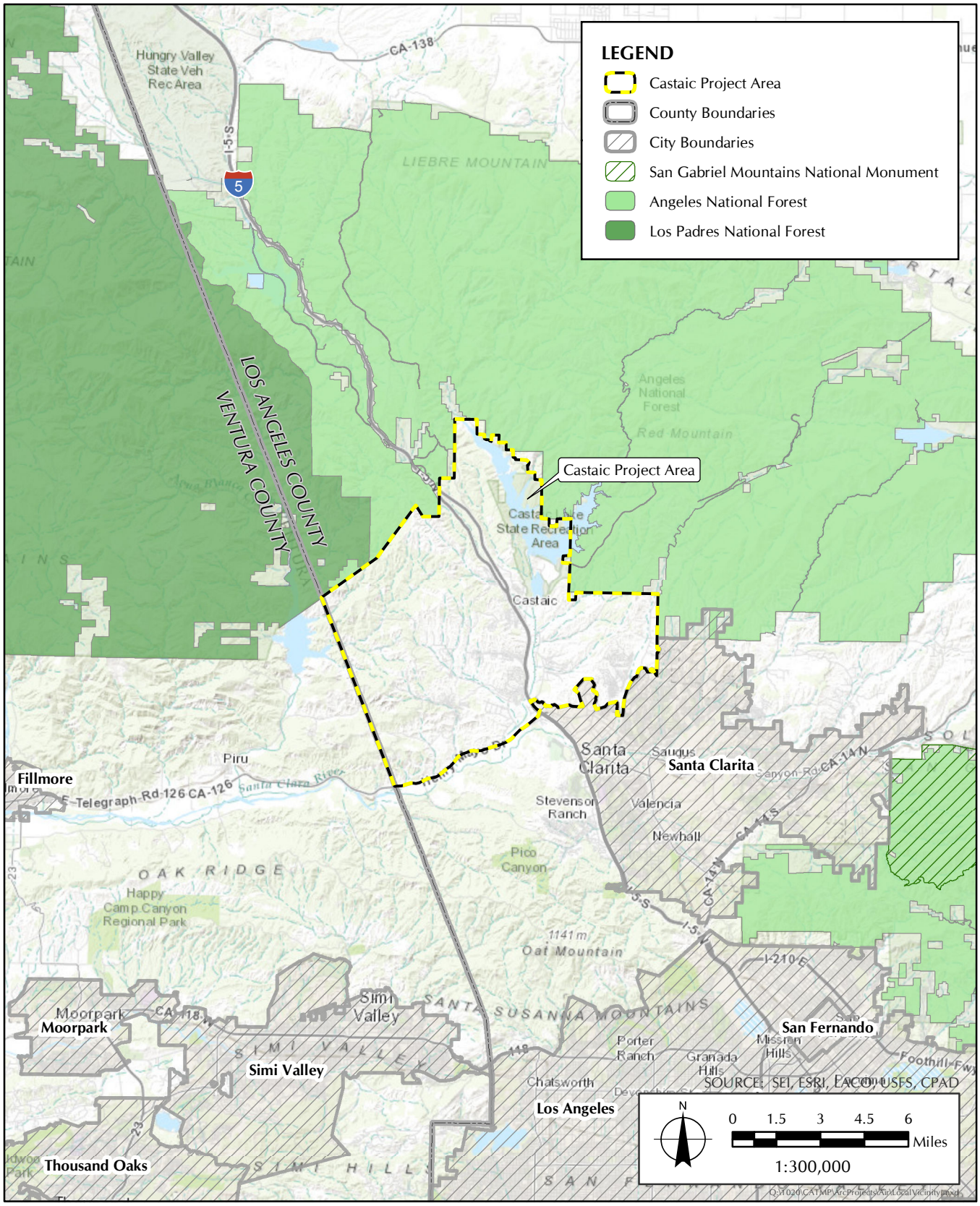

FIGURE 2

Local Vicinity Map

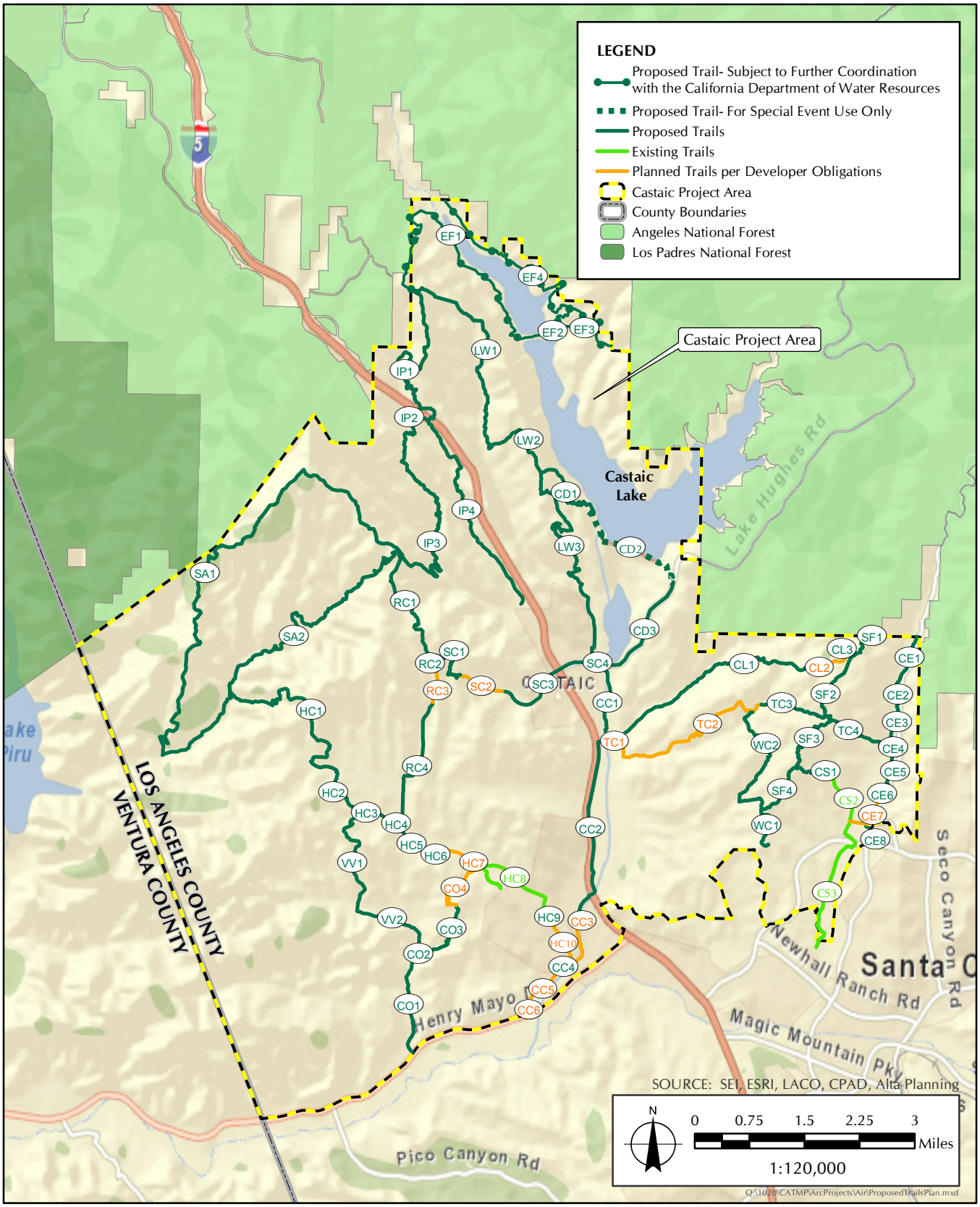

FIGURE 3

Proposed Trails Plan

The Castaic project area appears on the U.S. Geological Survey (USGS) 7.5-minute series Whitaker Peak, Warm Springs Mountain, Newhall, and Val Verde topographic quadrangles (Figure 4, *Topographic Map with USGS 7.5-Minute Quadrangle Index*).[4,5,6,7] The elevation of the proposed Castaic project area ranges from 2,756 feet above mean sea level (MSL) near the northern edge of the Castaic project area between Violin Canyon and Palomas Canyon, to 863 feet above MSL near the Santa Clara River at the southwestern corner of the Castaic project area. Loma Linda Peak, at an elevation of approximately 2,494 feet above MSL, is located between Santa Felicia Canyon and Romero Canyon, approximately 0.2 mile south of the northern edge of the Val Verde topographic quadrangle.

PROJECT DESCRIPTION

The proposed project would work to encourage and promote new multi-use trails and recommend improvements to existing trails, providing an alignment to incorporate a transition throughout the Castaic project area to additional areas, jurisdictions, and prime destinations within and adjacent to the Castaic project area. The plan would recommend conditions for improvement of unmet local recreation demands in the 5th Supervisorial District. The proposed project would develop a complete multi-use trail system connecting user groups and local populations to desired recreation destinations and experiences, with unified transition to the trails of adjacent jurisdictions, compatibility with adjacent land uses and environmental resources, and incorporate a sustainable design that is consistent with the County Trails Manual.

The proposed project includes approximately 100 miles of proposed multi-use trails and related staging areas, bike skills parks, parking areas, and other supporting trail facilities in the Castaic Area of the Santa Clarita Valley Planning Area. The proposed trails would provide connections to the Angeles National Forest, trails in the City of Santa Clarita, and trails in the Newhall Ranch Specific Plan. The trails would be multi-use and range from 3 to 12 feet wide based on site conditions, with adequate space for combined pedestrian, equestrian, and mountain biking use, in accordance with the County of Los Angeles Trails Manual guidelines (Table 1, *County Trail Types*).

4 U.S. Geological Survey. 4 January 2016. 7.5-Minute Series, Whitaker Peak, California, Topographic Quadrangle. Reston, VA.

[5] U.S. Geological Survey. 4 January 2016. 7.5-Minute Series, Warm Springs Mountain, California, Topographic Quadrangle. Reston, VA.

[6] U.S. Geological Survey. 4 January 2016. 7.5-Minute Series, Newhall, California, Topographic Quadrangle. Reston, VA.

[7] U.S. Geological Survey. 4 January 2016. 7.5-Minute Series, Val Verde, California, Topographic Quadrangle. Reston, VA.

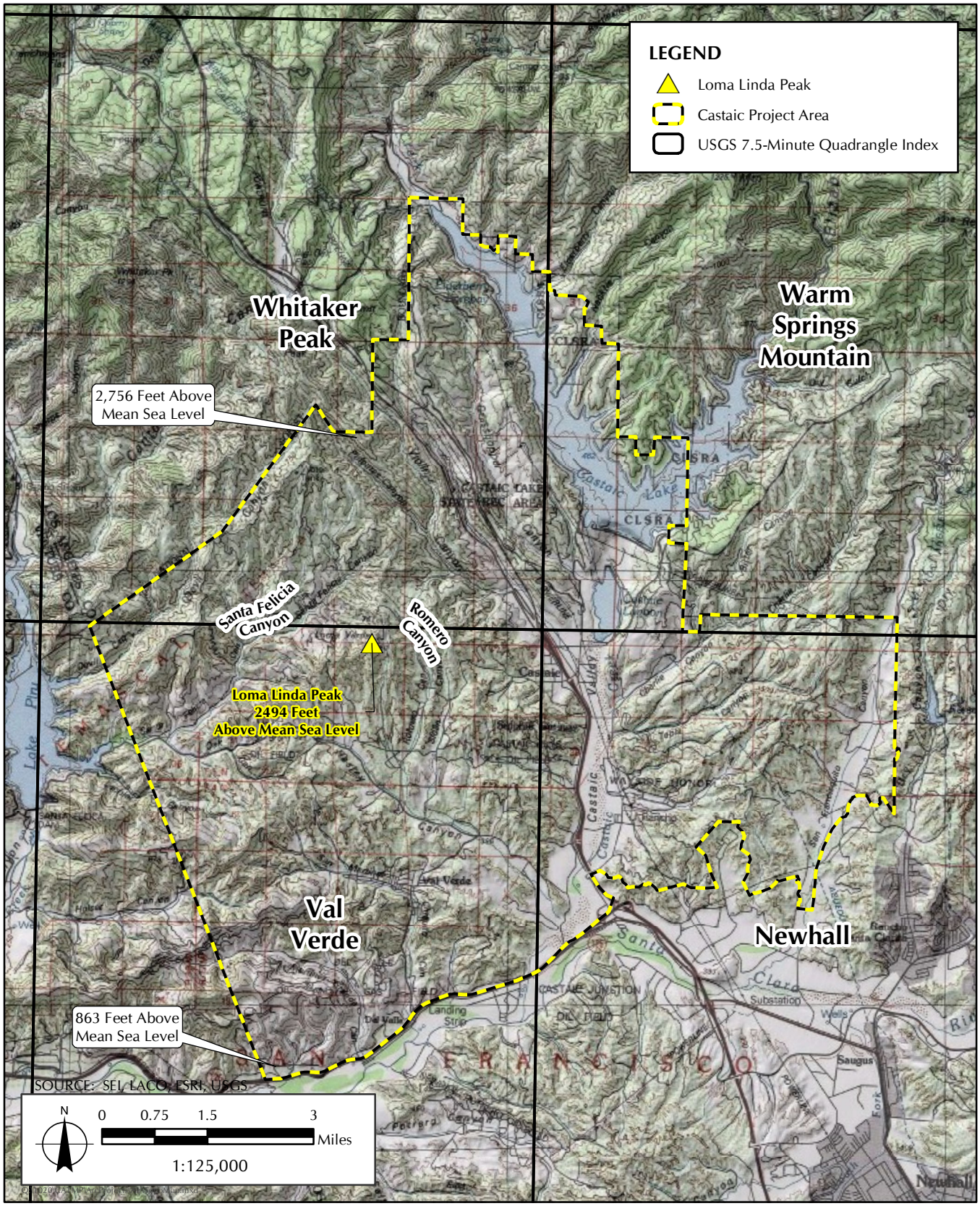

FIGURE 4

Topographic Map with United States Geological Survey 7.5 Minute Quadrangle Index

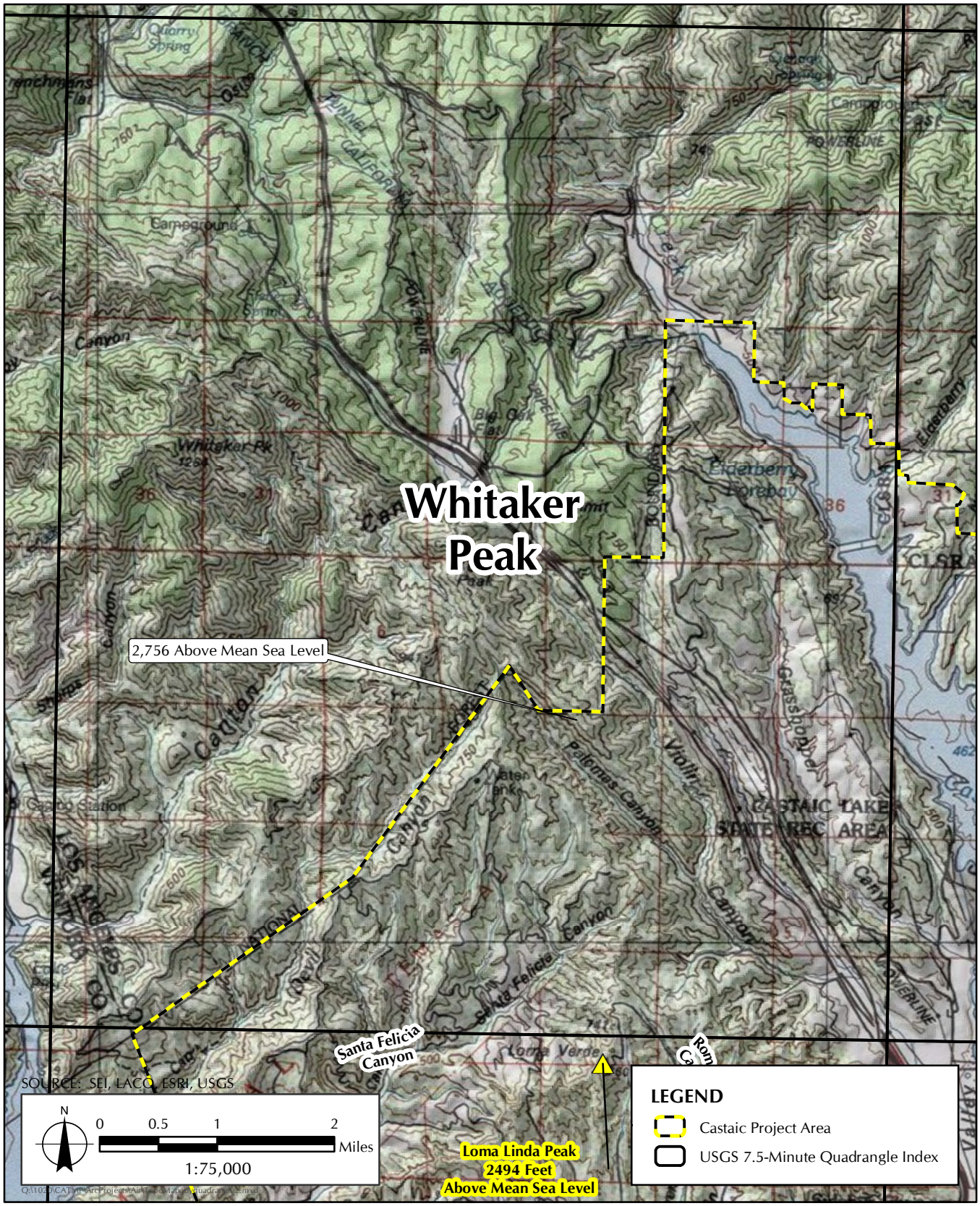

FIGURE 4A

Topographic Map with United States Geological Survey 7.5 Minute Quadrangle Index

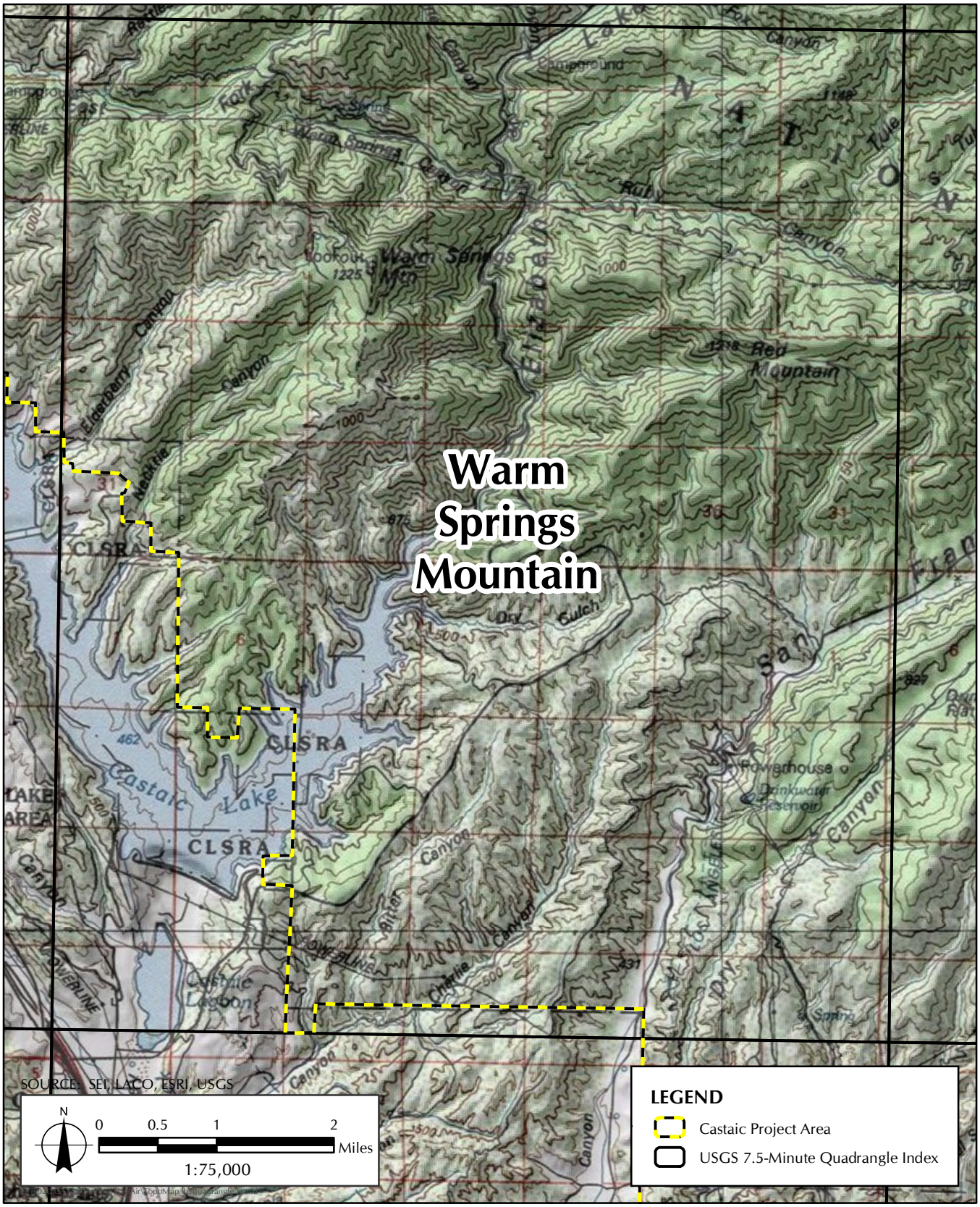

FIGURE 4B

Topographic Map with United States Geological Survey 7.5 Minute Quadrangle Index

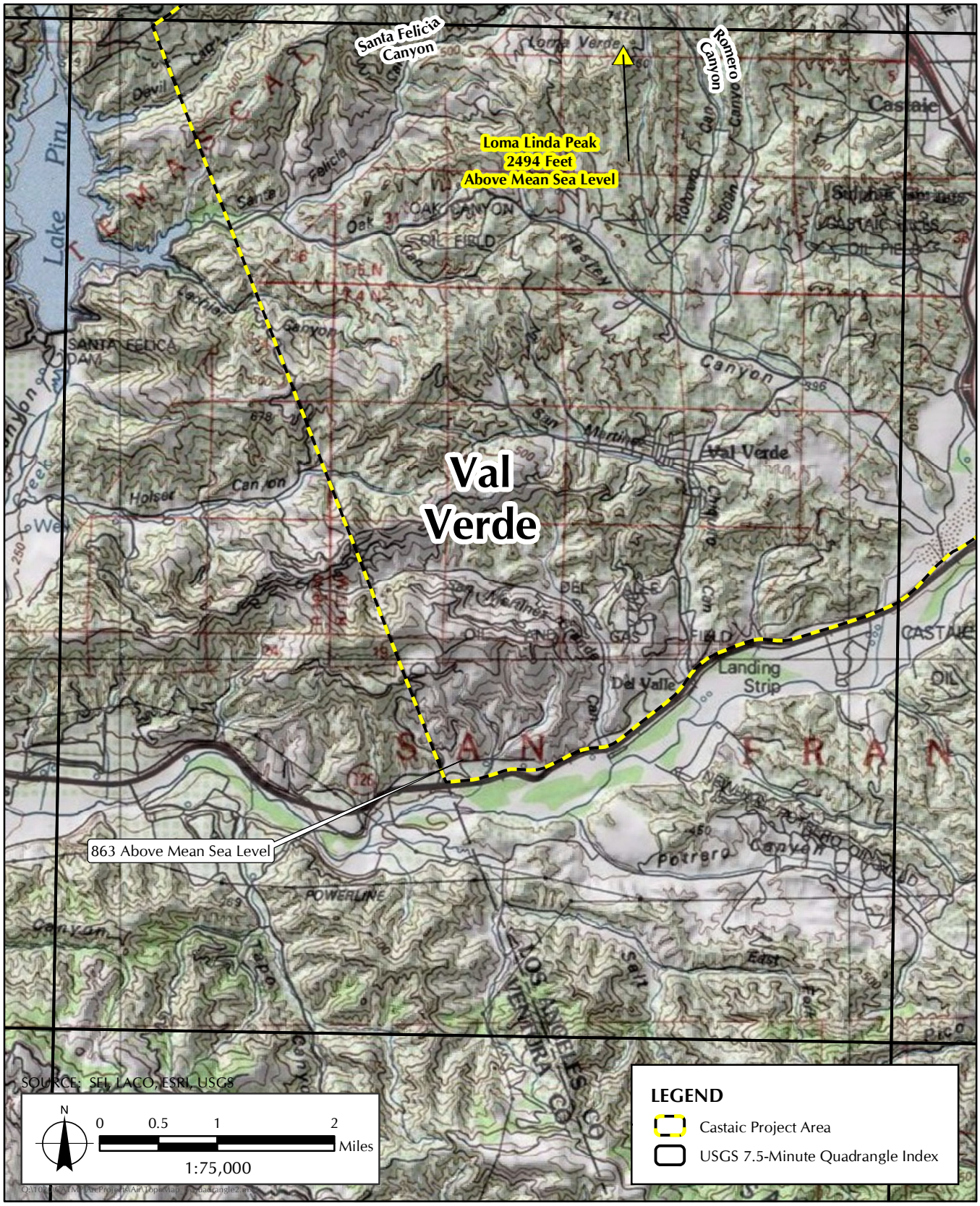

FIGURE 4C

Topographic Map with United States Geological Survey 7.5 Minute Quadrangle Index

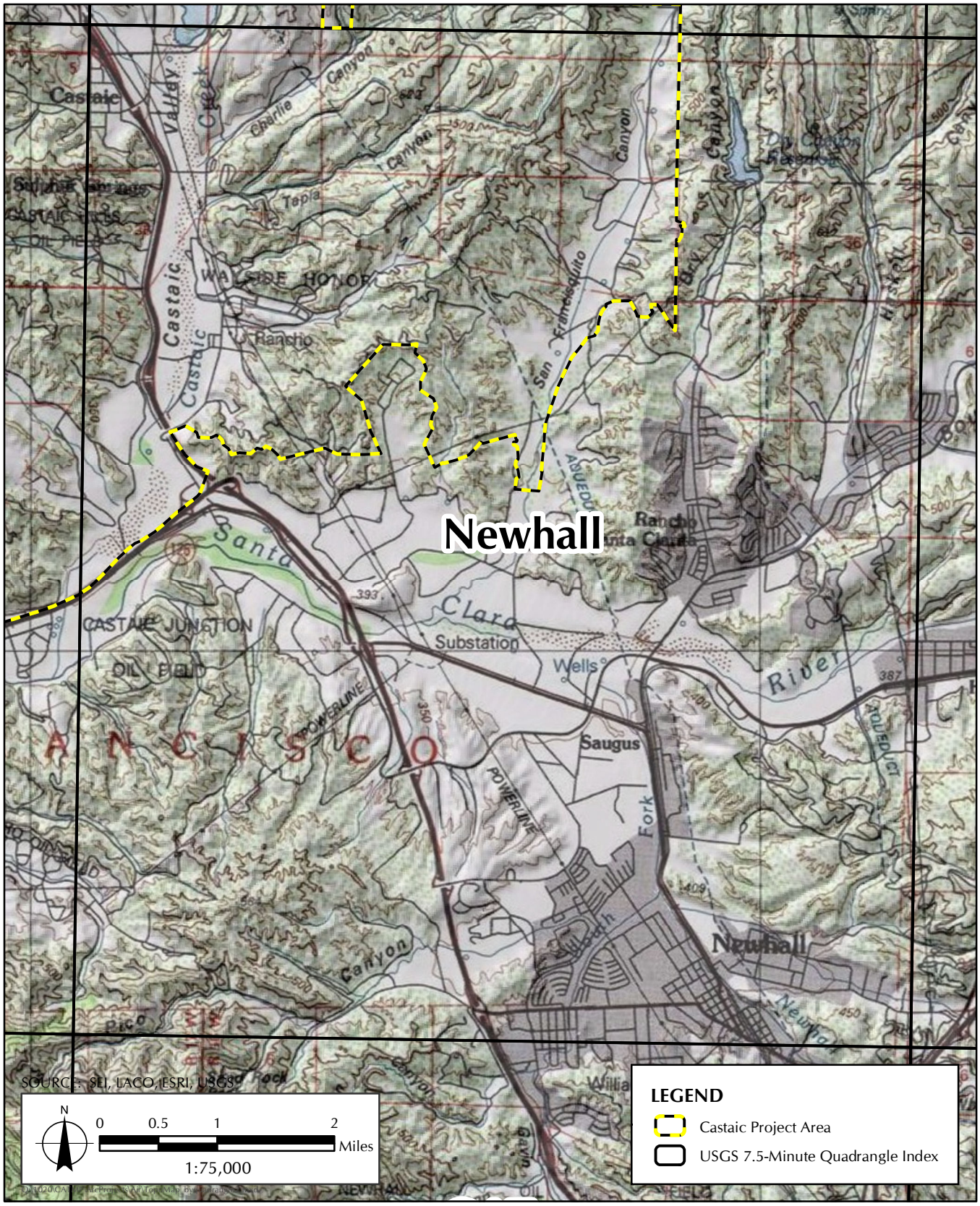

FIGURE 4D

Topographic Map with United States Geological Survey 7.5 Minute Quadrangle Index

TABLE 1
COUNTY TRAIL TYPES

Trail Type	Tread / Trail Width	Intensity of Use	Impact	Surface Type
Pedestrian	10–11 feet	High	High	Crusher fines / decomposed granite
Recreational Pathway	8–10 feet	High	High	Natural surface
Natural Trail 1	7–10 feet	High	Medium	Natural surface
Natural Trail 2	5–8 feet	Medium to high	Low	Natural surface
Natural Trail 3	2–3 feet	Low	Minimal	Natural surface

SOURCE: County of Los Angeles Department of Parks and Recreation. Adopted May 17, 2011. Revised June 2013. *County of Los Angeles Trails Manual*. Available at: https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

The proposed project includes 18 trail routes, consisting of four existing trail segments, 10 trail segments that have been planned per developer obligations, and 57 proposed trail segments (Table 2, *Existing, Planned per Developer Obligations, and Proposed Trail Segments*). The proposed trail segments would provide connections to the Santa Felicia SEA, the Angeles National Forest, Newhall Ranch trails and the Santa Clara River Trail, City of Santa Clarita trails, under Interstate-5, and to Castaic Lake.

TABLE 2
EXISTING, PLANNED PER DEVELOPER OBLIGATIONS, AND PROPOSED TRAIL SEGMENTS

Route Name	Trail Segment	Length (Miles)	Trail Type	Existing Conditions of Trail Segment and Trail Design Considerations
Castaic Creek (CC)	CC1 (Sports Complex)	1.24	Natural	No existing trail. Dirt road, de facto trail route along Castaic Creek. De facto trail that does not cross private property. Crossing of drainage at RV park will wash out periodically unless an alternative crossing (bridge) is developed.
	CC2 (Pitchess)	2.63	Natural	No existing trail. Existing dirt road from Tapia Canyon Road along Interstate 5 and creekbed, including under the freeway bridge. Potential for trailhead at southern end of segment.
	CC3 (Commerce Center East)	0.76	SUB	No existing trail. Portion of segment parallels existing dirt road. Planned trail per developer obligations generally follows 2007 County adopted trail routes; alignment reflects subdivision plans.
	CC4 (Commerce Center Undercrossing)	0.25	Natural	No existing trail. Within Castaic creekbed and along paved utility road. Slightly modified from 2007 County adopted trail routes to meet proposed subdivision trail.
	CC5 (Commerce Center Bike Trail)	0.46	SUB	No existing trail. Along paved utility road adjacent to creekbed. Planned trail per developer obligations follows the subdivision plan indicating proposed bike trail with 10' minimum equestrian trail.
	CC6 (Commerce Center – 126)	0.48	SUB	No existing trail. Parallels Franklin Parkway and Castaic Creek. Planned trail per developer obligations follows the subdivision plan indicating proposed sidewalk and equestrian trail.
Castaic Dam (CD)	CD1 (Castaic Upper Parking)	1.39	Natural	No existing trail. Parking lot median, follows existing switchbacks (dirt path) leading to and along existing Pine Ridge Fire Road. Connection from 2007 County adopted trail routes to upper parking lot at Castaic Lake.
	CD2 (Castaic Dam Crossing)*	1.76	Natural	No existing trail. Follows paved road from upper parking lot at Castaic Lake, across Castaic Dam, to Lake Hughes Road. Dam crossing, bridging east and west sides of Castaic Lake. Subject to further coordination with State Department of Water Resources..
	CD3 (Lake Hughes East)	1.60	ROW	No existing trail. Unpaved ROW along Lake Hughes Road. On-street connection from potential lagoon trailhead to parking lot on the east side of the dam.
Cliffie Stone Extension (CE)	CE1 (San Francisquito Wash - Upper)	0.63	Natural	No existing trail. Parallels existing dirt road/path along San Francisquito Canyon wash. Passes from subdivision land into multiple private parcels. Runs adjacent to the street, but may need to enter street ROW.
	CE2 (Tesoro Del Valle – SF Wash)	0.52	Natural	No existing trail. Parallels existing dirt road / de facto route within San Francisquito Canyon wash. Realigned 2007 County adopted trail. Passes through Tesoro Del Valle but is not including in subdivision plans.
	CE3 (San Francisquito Wash - Lower)	0.55	ROW	No existing trail. Parallels existing dirt road / de facto route within San Francisquito Canyon wash. Realigned 2007 County adopted trail
	CE4 (Lady Linda)	0.55	Natural	No existing trail. Follows existing dirt road (Lady Linda Lane). Follows Lady Linda Lane to connect to proposed trailhead.
	CE5 (Cliffie Stone – From Lady Linda-Low Ridge)	0.53	ROW	No existing trail. Follows portions of existing de facto dirt path/road to the west of San Francisquito Canyon Road. Primarily follows Cliffie Stone Extension identified in subdivision alignment.
	CE6 (Cliffie Stone – From Lowridge-Tesoro)	0.26	ROW	No existing trail. Dirt ROW exists along San Francisquito Canyon Road. Crosses road ROW but original ROW does not match existing street.
	CE7 (North Park – Cliffie Stone Extension)	0.62	Natural	No existing trail or de facto route. Follows 2007 County adopted alignment through subdivision until southern end, then branches west to meet Cliffie Stone Trail. Owned by MRCA but part of Tesoro subdivision.
	CE8 (North Park Trail Connector)	0.08	Natural	No existing trail or de facto route. Connection to North Park Trail. Leaves subdivision property and enters Newhall Land parcel.
Charlie Canyon (CL)	CL1 (Charlie Canyon Road)	3.61	Natural	No existing trail. Follows existing dirt roads (Tapia Canyon Road and Charlie Canyon Road), and what appears to be a de facto ridgeline path. Realigned from 2007 County adopted trail routes to follow road on County property.

TABLE 2
EXISTING, PLANNED PER DEVELOPER OBLIGATIONS, AND PROPOSED TRAIL SEGMENTS

Route Name	Trail Segment	Length (Miles)	Trail Type	Existing Conditions of Trail Segment and Trail Design Considerations
	CL2 (Charlie Canyon – Tesoro Del Valle)	0.37	Natural	No existing trail. Follows existing dirt road or de facto path. Trail enters subdivision parcels but is not on subdivision plans.
	CL3 (San Francisquito Connection)	0.16	Natural	No existing trail. Follows existing dirt road or de facto path. Connection to San Francisquito Trail.
Chiquito Canyon (CO)	CO1 (Chiquito Canyon and Creek)	3.52	Natural	No existing trail. Modified 2007 County adopted alignment to follow creek instead of Chiquito Canyon Road.
	CO2 (Jackson St)	0.21	ROW	No existing trail. Parallels two existing paved roads – Lincoln Avenue and Jackson Street. Follows existing street.
	CO3 (Chiquito Canyon and Creek – South)	1.04	Natural	No existing trail. Follows portions of Jackson Street and existing de facto dirt path or road. Requires access beyond locked gate. Realigned from 2007 County adopted alignment to minimize parcel crossings.
	CO4 (Chiquito Canyon and Creek – North)	1.05	SUB	No existing trail. Parallels portion of Del Valley Road. Planned trail per developer obligations - modified 2007 County adopted alignment to remain within subdivision parcels. Subdivision alignment not determined.
Cliffie Stone (CS)	CS1 (Cliffie Stone – San Francisquito Motorway)	0.68	Natural	No existing trail. Follows existing ridgeline Farmer John Lat dirt road and paved utility access road. Tesoro Del Valle Property. Requires access along utility road.
	CS2 (Cliffie Stone Trail [Tesoro])	1.16	Natural	Existing trail
	CS3 (Cliffie Stone Trail [San Francisquito)	1.73	Natural	Existing trail
Elderberry Forebay (EF)	EF1 (Forebay Connection)	4.76	Natural	No existing trail. Follows existing dirt road and topography. May have security issues with dam and pipes at northern edge. Only include if Elderberry Forebay Dam is useable.
	EF2 (Forebay – Limit 2)	0.81	Natural	No existing trail. Parallels portion of Elderberry Forebay road. Dam connection to northeastern corner route. Only include if Elderberry Forebay Dam is useable.
	EF3 (Forebay – Limit 1)	0.72	Natural	No existing trail. Parallels portion of Elderberry Forebay road. Dam connection to northeastern corner route. Only include if Elderberry Forebay Dam is useable.
	EF4 (Northern Limit)	4.76	Natural	No existing trail. Parallels portions of existing roads: Goodell Road and USFS Route 6N13. Northeast connection to USFS roads. Extends beyond Castaic project area.
Hasley Canyon (HC)	HC1 (Hasley – Santa Felicia)	3.48	Natural	No existing trail. Follows existing unpaved Ayala Road for a portion of proposed route. Connects Hasley Canyon to Santa Felicia SEA. Requires passage beyond locked gate at Hasley Canyon.
	HC2 (Hasley – Claremont)	0.70	Natural	No existing trail. Follows existing de facto path or dirt road. Trail falls within subdivision area but is not included in existing subdivision plans. Avoids using street ROW. Connects to 2007 County adopted trail alignment at northern end.
	HC3 (Hasley Canyon End)	0.16	Natural	No existing trail. Realigned 2007 County adopted trail alignment.
	HC4 (Hasley Road West)	0.33	ROW	No existing trail. Parallels existing paved Hasley Canyon Road. Follows 2007 County adopted trail alignment along public ROW. Ends at road.
	HC5 (Hasley Road East)	0.57	ROW	No existing trail. Parallels existing paved Hasley Canyon Road. Realigned 2007 County adopted trail to avoid private parcel conflict, avoid a creek crossing, and to more directly connect to other trail segments.
	HC6 (Hasley Creek)	0.26	Natural	Existing de facto trail along Hasley Canyon Road. Realigned 2007 County adopted trail to follow de facto trails.

TABLE 2
EXISTING, PLANNED PER DEVELOPER OBLIGATIONS, AND PROPOSED TRAIL SEGMENTS

Route Name	Trail Segment	Length (Miles)	Trail Type	Existing Conditions of Trail Segment and Trail Design Considerations
	HC7 (Hasley-Los Valles)	0.56	SUB	No existing trail. Existing de facto trail along Hasley Canyon Road. Planned trail per developer obligations - realigned 2007 County adopted trail to follow de facto trails. Within subdivision area a planned subdivision trail is not indicated.
	HC8 (Hasley Canyon Trail)	1.68	Natural	Existing trail
	HC9 (Commerce Center)	0.21	ROW	No existing trail. Existing paved maintenance road along channelized creek. Line to proposed subdivision trails. Crosses under Commerce Center Drive and uses maintenance road.
	HC10 (Commerce Center NW)	0.61	SUB	No existing trail. Parallels creek bed. Planned trail per developer obligations generally follows 2007 County adopted alignment, but realigned to avoid the creek bed where possible.
Interstate Paintball (IP)	IP1 (Interstate 5 to Ridge Route)	3.30	Natural	No existing trail. Existing utility access dirt roads. Follows utility access roads. Northern end will need switchbacks to drop to Ridge Route Rd.
	IP2 (Paintball Site)	0.65	Natural	No existing trail. Existing dirt roads and paved roads. Connects through former paintball site and proposed bike skills park. Alignment to be determined by park design.
	IP3 (Santa Felicia to 5 Connection)	3.67	Natural	No existing trail. Existing dirt roads along portions of alignment. Connection from former paintball site to Santa Felicia SEA. Undercrossing at Interstate-5 will need to be evaluated for safety.
	IP4 (Between Interstate 5)	3.14	Natural	No existing trail. Existing utility access dirt roads between I-5 North and I-5 south. Picks up from the end of Castaic Road and continues to paintball site.
Lake West (LW)	LW1 (Northlake North)	3.28	Natural	No existing trail. Existing dirt roads. Follows 2007 County adopted trail route.
	LW2 (Northlake Central)	1.10	Natural	No existing trail. Existing dirt roads. Follows 2007 County adopted trail route.
	LW3 (Lagoon-Lake)	4.05	Natural	Existing dirt roads, including a portion of Cutler Canyon Fire Road and Vista Ridge Fire Road, and paved Castaic Lake State Recreation Area road. Includes a portion of Pro's Uphill Open Trail and Castaic Brick Trail of Castaic Lake State Recreation Area.[1] Follows 2007 County adopted trail route.
North Park Trail	North Park Trail	0.33	Natural	Existing trail
Romero Canyon (RC)	RC1 (Romero-Santa Felicia)	1.88	Natural	No existing trail. Follows existing dirt road/path. Portions follow narrow ridgelines.
	RC2 (North of High School)	0.13	Natural	No existing trail. Currently a construction site. Connection to Castaic High School path.
	RC3 (Castaic High School)	0.56	SUB	No existing trail. Currently a construction site leading to Romero Canyon Road. Planned trail per developer obligations – alignment needs verification from development plan.
	RC4 (Romero Canyon Rd)	1.89	Natural	No existing trail. Parallels Romero Canyon Road. Follows private road.
Santa Felicia (SA)	SA1 (Santa Felicia Upper Loop)	7.59	Natural	No existing trail. Existing dirt road. Minimal constraints.
	SA2 (Santa Felicia Lower Loop)	5.80	Natural	No existing trail. Existing dirt road. Portions follow narrow ridgelines.
San Francisquito (SF)	SF1 (San Francisquito Motorway)	0.34	Natural	No existing trail. Existing dirt road: San Francisquito Motorway. Follows San Francisquito Motorway to the edge of the Castaic project area.

TABLE 2
EXISTING, PLANNED PER DEVELOPER OBLIGATIONS, AND PROPOSED TRAIL SEGMENTS

Route Name	Trail Segment	Length (Miles)	Trail Type	Existing Conditions of Trail Segment and Trail Design Considerations
	SF2 (San Francisquito Motorway Bypass)	1.09	Natural	No existing trail. De facto ridgeline dirt road/path. Two parallel alternative routes. Single alignment pending further study. Partially inside Tapia Ranch.
	SF3 (San Francisquito – Tapia)	1.15	Natural	No existing trail. Existing dirt road: San Francisquito Motorway. Passes through Tesoro Del Valle, not included in subdivision plans.
	SF4 (San Francisquito – West Creek)	0.85	Natural	No existing trail. Existing dirt road: San Francisquito Motorway. Follows utility road. Connects San Francisquito and Cliffie Stone Trails to West Creek.
Sloan Canyon (SC)	SC1 (Sloan Canyon West)	1.14	Natural	No existing trail. Existing dirt roads and construction sites. Portions follow narrow ridgelines.
	SC2 (Homestead at Sloan Canyon)	0.68	SUB	No existing trail. Existing construction site and unpaved Sloan Canyon Road. Planned trail per developer obligations follows existing dirt road.
	SC3 (Sloan Canyon Dr)	1.52	ROW	No existing trail. Parallels Sloan Canyon Road and Lake Hughes Road. On-street connection. Crosses under Interstate 5. Requires coordination with Los Angeles County Public Works.
	SC4 (Lake Hughes at Lagoon)	0.19	ROW	No existing trail. Parallels Lake Hughes Road south of Castaic Lagoon. Connects Castaic Creek to Castaic Lake.
Tapia Canyon (TC)	TC1 (Sports Complex – Tapia)	0.24	SUB	No existing trail. Parallels Tapia Canyon Road. Planned trail per developer obligations – Tapia Ranch development plans to build path to Castaic Road.
	TC2 (Tapia Bypass)	2.74	SUB	No existing trail. Parallels Tapia Canyon Road and Wayside Canyon Road in between undeveloped portions of Tapia Canyon. Planned trail per developer obligations – part of Tapia Ranch development plan. Portions follow 2007 County adopted alignment.
	TC3 (Tapia – San Francisquito)	1.11	Natural	No existing trail. Appears to be a de facto trail or dirt path between Tapia Canyon Road and San Francisquito Motorway. Partially within Tapia Ranch development.
	TC4 (Tapia – Cliffie Stone)	1.03	Natural	No existing trail. A portion of alignment route follows an existing dirt road/path. A portion parallels dirt roads/paths: Quail Haven Trail, Las Tunas Trail, and Lady Linda Lane. Trail would need to traverse a significant elevation change over the ridge at northern end.
Val Verde (VV)	VV1 (Kennsington Rd)	2.31	Natural	No existing trail. Follows a few de facto dirt roads/paths. Requires access along private roads at either end of the alignment.
	VV2 (Chiquito – Val Verde)	0.94	Natural	No existing trail. Follows edge of Val Verde Park and drainage. Follows drainage, marked as privately owned for portions but appears to all be LA County Flood Control property.
West Creek (WC)	WC1 (West Creek – Tapia)	1.49	Natural	No existing trail. Parallels two existing dirt roads: Company Road and Wayside Lateral Road. Requires connection through cul-de-dac in West Creek.
	WC2 (West Creek – Tapia – Tesoro)	1.30	Natural	No existing trail. Follows a portion of existing de facto dirt road/paths and a portion of Tapia Canyon Road. Within subdivision property, but alignment not included in subdivision. Connects West Creek development to Tapia Ranch area.
TOTAL				
Total of 18 Routes	**Total of 71 Trail Segments** • 4 Existing Segments • 10 Segments planned per developer obligations • 57 Proposed Trail Segments			**Total Of 102.94 Miles in Trail Planning Castaic project area** • 4.90 Miles Existing Trails • 8.14 Miles Planned trails per developer obligations (no existing trail) • 89.90 Miles Proposed and Under Consideration

NOTES: *Subject to negotiation with California State Department of Water Resources (DWR) - Future negotiations with DWR and pending state and county agreement renewal. SUB = Multi-Use Subdivision Trail. ROW = New Designation
SOURCE: [1] Friends of Castaic Lake. Accessed 12 April 2016. *Castaic Lake – Trail Map*. Available at: http://castaiclake.com/map_trails.html

Consistent with Section 4.3.6, *Way-finding Signs*, of the County Trails Manual, the proposed project would include regular trail signs at trailheads, trail amenity locations, street and trail intersections, and the boundaries of trail easements on private property and National Forest lands.[8] Also consistent with the recommendations of the County Trails Manual, reassurance marker signs would be posted at eye level (62 inches above the ground surface) at every quarter (0.25) mile of trail that visually mark the trail line and identify the name of the trail and quarter milepost number in order to orient trail users and search and rescue services in the case of an emergency. As each trail segment is constructed, the County Department of Parks and Recreation would be responsible for sending the Los Angeles County Fire Department and the Los Angeles County Sheriff's Department the location of each quarter milepost along the trail for emergency response purposes.

The proposed project would involve the development of five simple trailheads at access points, up to three bike skills park amenities, four equestrian amenities, and nine staging areas and trail amenities (Table 3, *Proposed Trail Related Facilities*; Figure 5, *Proposed Trail-Related Facility Locations*). The bike skills parks would occupy up to 45 acres.

TABLE 3
PROPOSED TRAIL RELATED FACILITIES

Trail Related Facility Type	Related Facility Name (Size)
Trail Access Only • Trailheads only	Upper Ridge Route Road
	Sloan Canyon
	Castaic Road
	West Creek
	Hasley Canyon Equestrian Center
Bike Skills Park Amenities • Restrooms • Drinking Fountains • Rest Areas/Seating • Shade Structures • Pump Tracks (no pedaling required) • Progressive Jumps (natural soil with compacted dirt jumps) • Balance Skills Features (e.g., wooden teeter-totter) • Rock/Technical Features (e.g., rock garden with narrow width trails) • Flow Trails (start at higher elevation for downhill ride) • Trails (over variety of terrain, for all ages) • Road Handling Skills Areas (hard-packed soil course) • Beginner, Intermediate, and Expert Skills Courses (for all ages) • Advanced Downhill Course (steep terrain, jumps, turns, obstacles) • Slalom Course (two adjacent trails for competition)	Castaic Sports Complex (up to 10 acres) Upper Lagoon (up to 5 acres) Ridge Route Road (up to 30 acres)

[8] County of Los Angeles Department of Parks and Recreation. Revised June 2013. County of Los Angeles Trails Manual. Available at: https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

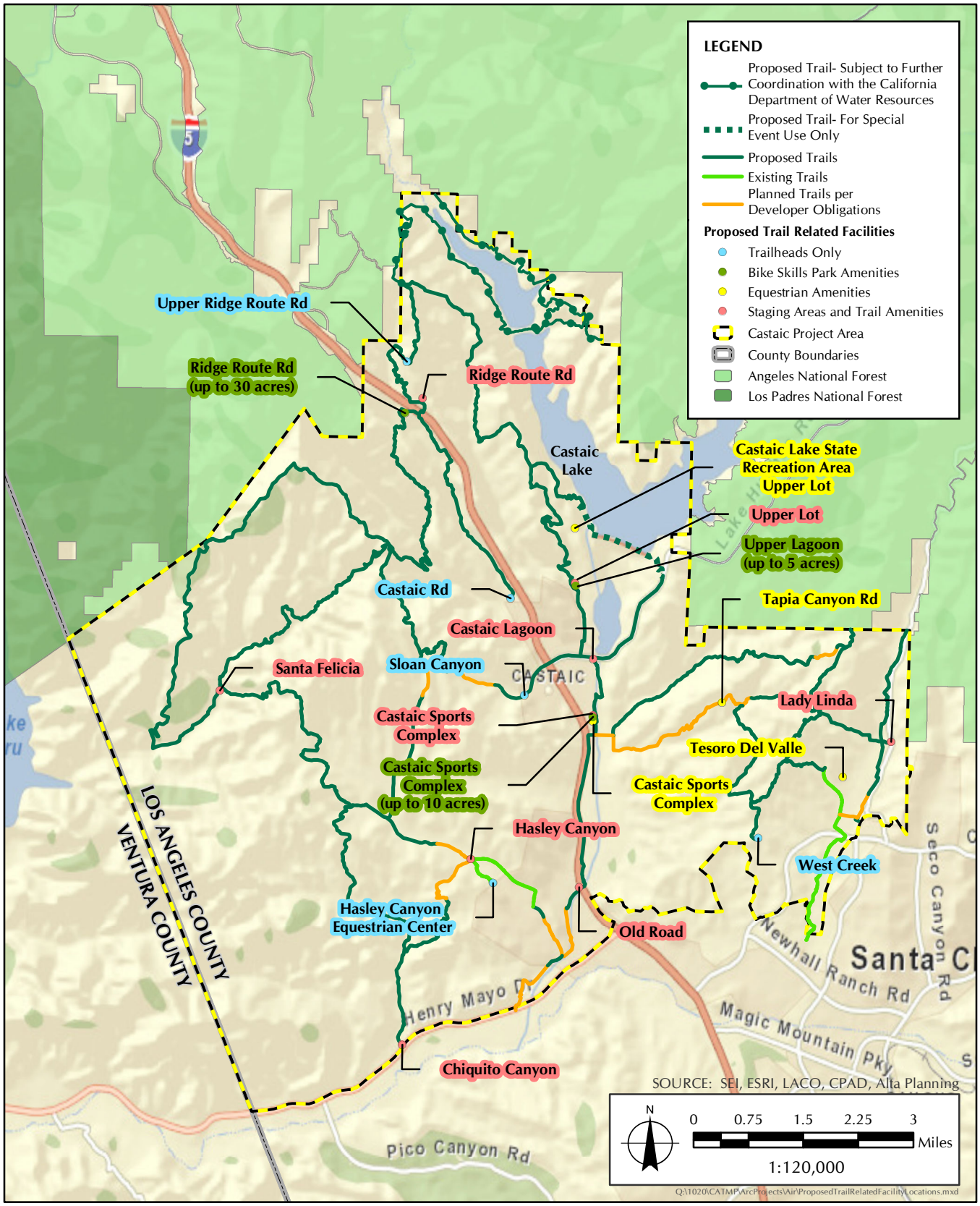

FIGURE 5

Proposed Trail Related Facility Locations

TABLE 3
PROPOSED TRAIL RELATED FACILITIES

Trail Related Facility Type	Related Facility Name (Size)
Equestrian Amenities • Trailheads • Parking • Restrooms • Drinking Fountains (for humans, equine, or pets) • Picnic Tables • Shade Structures • Horse Arenas • Gathering Areas • Horse Ties and Rails	Tapia Canyon Road
	Castaic Lake Upper Lot
	Tesoro Del Valle
	Castaic Sports Complex
Staging Areas and Trail Amenities • Trailheads • Parking • Restrooms • Drinking Fountains (for humans, equine, or pets) • Benches/Seating • Picnic Tables • Shade Structures • Wayfinding Signage • Interpretive Signage • Gathering Areas • Horse Ties and Rails • Bike Racks	Old Road
	Hasley Canyon
	Chiquito Canyon
	Santa Felicia
	Castaic Lagoon
	Lady Linda
	Ridge Route Road
	Castaic Sports Complex
	Castaic Lake State Recreation Area Upper Lot

Restrooms would be design and required to demonstrate compliance with the standards of the Santa Clarita Valley Sanitation District or the County of Los Angeles Department of Public Health for Onsite Wastewater Treatment Systems (OWTS), as applicable.

Trails and supporting facilities within a one-mile radius of officially designated and eligible State scenic highways would be designed, constructed, and maintained (where construction equipment is involved) to preserve scenic resources, including but not limited to trees, rock outcroppings, and historic buildings, within the scenic highway corridor. Where construction of trails or related supporting facilities requires cuts into the slope (which can be seen from a far distance), the visual character of the slope would be restored by planting locally native vegetation as a visual screen. Similarly, restrooms and other supporting structures would be constructed of materials that blend into the landscape, with locally native vegetative screening.

As stated in the County Trails Manual, the hours for operation for County trails are typically from dawn to dusk (County Code 17.04.330). In accordance with the guidelines in Section 4.3.18, *Lighting*, of the County Trails Manual, where lighting features are provided for safety and wayfinding reasons, lighting would installed in a manner to be non-intrusive to adjacent uses, avoid detracting from a natural outdoors experience for trail users, and directed downward to avoid light pollution or spillover in general.[9]

[9] County of Los Angeles Department of Parks and Recreation. Adopted by the Board of Supervisors on May 17, 2011. Revised June 2013. County of Los Angeles Trails Manual. Available at:

REGULATORY FRAMEWORK

Federal

Federal Clean Air Act

The Clean Air Act (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 Unite 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 1-hour standard for O_3 was revoked in 2005 in favor of a new 8-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 4, *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 4
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

NOTE: ppm = parts per million. ppb = parts per billion. $\mu g/m^3$ = micrograms per cubic meter. *Revised to 0.070 ppm in 2015.

SOURCE: South Coast Air Quality Management District. February 2016. *Air Quality Management Plan (AQMP).* Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=2)

South Coast Air Quality Management District. November 2012. *2012 AQMP Final Program EIR.* State and Federal Ambient Air Quality Standards.

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https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

State

California Air Resources Board

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.[10]

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.

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 5, *California Ambient Air Quality Standards*). California has also set standards for some pollutants that are not addressed by federal standards.

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

TABLE 5
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: ppm = parts per million. ppb = parts per billion. µg/m^3 = micrograms per cubic meter.
SOURCE: South Coast Air Quality Management District. November 2012. *2012 AQMP Final Program EIR*. State and Federal Ambient Air Quality Standards. November 2012.

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 emission 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 which are included in the California SIP.

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 [MT]) by 2010, to the 1990 level (427 million MT of CO_{2e}) by 2020, and to 80 percent below the 1990 level (85 million MT of CO_{2e}) by 2050 (Table 6, *California Business-as-Usual GHG Emissions and Targets*).[11,12] The executive order directs the

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

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 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."[13]

TABLE 6
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.

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.

Regional

Southern California Association of Governments

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

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

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

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 AQMP, discussed below.

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 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.

The SCAQMD adopts rules and regulations to implement portions of its AQMP. Several of these rules may apply to construction or operation of the proposed project. For example, SCAQMD Rule 403, *Fugitive Dust*, requires the implementation of best available fugitive dust control measures during active construction periods capable of generating fugitive dust emissions from on-site earth-moving activities, construction/demolition activities, and construction equipment travel on paved and unpaved roads.

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 Basin, such as the proposed project. Instead, the SCAQMD published the *CEQA Air Quality Handbook* in 1993 to assist lead agencies, as well as consultants, project proponents, and other interested parties, in evaluating potential air quality impacts of project proposed in the Basin. The SCAQMD *CEQA Air Quality Handbook* provides standards, methodologies, and procedures for conducting air quality analyses in EIRs and was used extensively in the preparation of this analysis.

South Coast Air Quality Management Plan

The most recent update to the SCAQMD AQMP was adopted in 2012 by the SCAQMD Board and CARB.[14] The 2016 AQMP is expected to be submitted to in summer 2016. The 2012 AQMP demonstrates attainment of the federal 24-hour $PM_{2.5}$ standard by 2014 in the Basin 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 volatile organic compound (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.

Los Angeles County General Plan

The Los Angeles County General Plan, Air Quality Element, addresses the General Plan's Guiding Principles by promoting clean air and addressing climate change. The latest version is a revised draft from October 6, 2015. The Community Climate Action Plan is a supplement of the Air Quality Element. In addition to Smart Growth policies, such as building sustainably and reducing energy consumption, the Air Quality Element discusses clean air as a positive outcome of smart growth land use policies to reduce vehicle miles traveled (VMTs), traffic pollution and greenhouse gas emissions, and Environmental Resource Management policies to protect resources. The Air Quality Element also addresses how the provision of Sufficient Community Services and Infrastructure, especially the County's vast transportation network, needs to include considerations for the impacts on air quality and quality of life. The Air Quality Element also discusses the importance of clean air in planning for Healthy, Livable, and Equitable Communities, and for the workforce in building a Strong and Diversified Economy.

The Air Quality Element summarizes air quality issues and outlines three (3) goals and sixteen (16) policies in the General Plan that will improve air quality and reduce GHG emissions.[15]

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

- Policy AQ 1.1: Minimize 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 1.2: Encourage the use of low or no volatile organic compound (VOC) emitting materials.
- 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.

[14] South Coast Air Quality Management District. 2012. *Final 2012 Air Quality Management Plan*. Diamond Bar, CA.

[15] Los Angeles County Department of Regional Planning. Adopted 6 October 2015. *Los Angeles County General Plan 2035*. Chapter 8: Air Quality Element. Available at: http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch8.pdf

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.
- Policy AQ 2.3: Support the conservation of natural resources and vegetation to reduce and mitigate air pollution impacts.
- Policy AQ 2.4: Coordinate with different agencies to minimize fugitive dust from different sources, activities, and uses.

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

- Policy AQ 3.1: Facilitate the implementation and maintenance of the Community Climate Action Plan to ensure that the County reaches its 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 energy conservation in new development and municipal operations.
- Policy AQ 3.6: Support rooftop solar facilities on new and existing buildings.
- Policy AQ 3.7: Support and expand urban forest programs within the unincorporated areas.
- Policy AQ 3.8: Develop, implement, and maintain countywide climate change adaptation strategies to ensure that the community and public services are resilient to climate change impacts.

Santa Clarita Valley Area Plan

The Trail Planning Study Area is located within the unincorporated portion of the Santa Clarita Valley and is subject to the 2012 Santa Clarita Valley Area Plan. Relevant guiding principles for air quality and greenhouse gas emissions stated in the Santa Clarita Valley Area Plan include:

Chapter 3: Circulation Element

- **Objective C-1.3-2:** Through trip reduction strategies and emphasis on multi-modal transportation options, contribute to achieving the air quality goals of South Coast Air Quality Management District Air Quality Management Plan.

Chapter 4: Conservation and Open Space Element

- **Objective CO-7.1:** Reduce air pollution from mobile sources.
- **Objective CO-7.2:** Apply guidelines to protect sensitive receptors from sources of air pollution as developed by the California Air Resources Board, where appropriate.
- **Objective CO-7.3:** Coordinate with other agencies to plan for and implement programs for improving air quality in the South Coast Air Basin.
- **Objective CO-8.1:** Comply with the requirements of State law, including AB 32, SB 375, and implementing regulations, to reach targeted reductions of GHG emissions.
- **Objective CO-8.2:** Reduce energy and materials consumption and greenhouse gas emissions in public uses and facilities.
- **Objective CO-8.3:** Encourage green building and sustainable development practices on private development projects, to the extent reasonable and feasible.
- **Objective CO-8.4:** Reduce energy consumption for processing raw materials by promoting recycling and materials recovery by all residents and businesses throughout the community.

Newhall Ranch Specific Plan

A portion of the Trail Planning Study Area is located within the Newhall Ranch area and is subject to the Newhall Ranch Specific Plan. There is one Land Use Planning Objective within the Newhall Ranch Specific Plan that would help improve air quality:

- **Land Use Planning Objective 5:** Arrange land uses to reduce vehicle miles traveled and energy consumption.[16]

Northlake Specific Plan

A portion of the Trail Planning Study Area is located within the Northlake Specific Plan area and is subject to the Northlake Specific Plan. The Northlake Specific Plan lists potential mitigation measures including: limit dust by watering, proper equipment engine maintenance, construction scheduling in accordance with the air district directives, compliance with Title 24 of the California State Energy Commission to minimize stationary source air pollutants, and a commuter ride-share program.[17]

Castaic Area Multi-Use Trails Plan

The proposed project references the Air Element of the County of Los Angeles General Plan 2035 as a guidance document for sustainability. Most relevant to this study area is Goal AQ 3, the Implementation of plans and programs to address the impacts of climate change.

[16] County of Los Angeles Department of Regional Planning. 27 May 2003. *Newhall Ranch Specific Plan*. Available at: http://planning.lacounty.gov/assets/upl/data/pd_sp_newhall-ranch.pdf

[17] County of Los Angeles Department of Regional Planning. June 1992. *Northlake Specific Plan*. Available at: http://planning.lacounty.gov/assets/upl/data/pd_sp_northlake.pdf

EXISTING CONDITIONS

Regional Climate

The regional climate significantly influences the air quality in the South Coast Air Quality Basin (Basin). Temperature, wind, humidity, precipitation, and the amount of sunshine influence the quality of the air. In addition, the Basin 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 Basin vary from the low to middle 60 degrees Fahrenheit (°F). However, due to decreased marine influence, the eastern portion of the Basin shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the Basin, with average minimum temperatures of 47 °F in downtown Los Angeles and 36 °F in San Bernardino. All portions of the Basin have recorded maximum temperatures above 100 °F.

Although the climate of the Basin can be characterized as semi-arid, 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 Basin climate. Humidity restricts visibility in the Basin, 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 Basin's rainfall occurs from November through April. Annual average rainfall varies from approximately 9 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 Basin, with the frequency being higher near the coast. The influence of rainfall on the contaminant levels in the Basin 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 contaminant levels can persist even in areas of light showers.

Temperature Inversion

The vertical dispersion of air pollutants in the Basin 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 Basin 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 mid-morning.

Regional Air Quality

The air quality in Southern California does not meet the state and federal standards. 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.

The County is a large basin with the Pacific Ocean to the west and several mountain ranges with 11,000 foot peaks to the east and south. Frequent sunny days and low rainfall contribute to ozone formation, as well as high levels of fine particles and dust. 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 county, 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.

The South Coast Air Basin is in federal non-attainment for O_3 and $PM_{2.5}$ (Table 7, *NAAQS and CAAQS Attainment Status South Coast Air Basin*). 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 changed as needed. As of February 2016, the County has been designated as nonattainment for O_3, $PM_{2.5}$, and PM_{10} (Table 7).

TABLE 7
NAAQS AND CAAQS ATTAINMENT STATUSES
SOUTH COAST AIR BASIN

Criteria Pollutant	Standard	Averaging Time	Designation	Attainment Date
1-Hour Ozone	NAAQS	1979 1-Hour (0.12 ppm)	Nonattainment (Extreme)	2/6/2023 Originally 11/15/2010 (not attained)
	CAAQS	1-Hour (0.12 ppm)	Nonattainment	N/A
8-Hour Ozone	NAAQS	1997 8-Hour (0.08 ppm)	Nonattainment (Extreme)	6/15/2024
	NAAQS	2008 8-Hour (0.075 ppm)	Nonattainment (Extreme)	7/20/2032
	NAAQS	2015 8-Hour (0.070 ppm)	Designations Pending	~ 2037
	CAAQS	8-Hour (0.070 ppm)	Nonattainment	Beyond 2032
Carbon Monoxide	NAAQS	1-Hour (35 ppm) 8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007 (attained)
	CAAQS	1-Hour (20 ppm) 8-Hour (9 ppm)	Attainment	6/11/2007 (attained)
Nitrogen Dioxide	NAAQS	1-Hour (0.10 ppm)	Unclassifiable/Attainment	N/A (attained)
	NAAQS	Annual (0.053 ppm)	Attainment (Maintenance)	9/22/1998 (attained)
	CAAQS	1-Hour (0.18 ppm) Annual (0.030 ppm)	Attainment	--
Sulfur Dioxide	NAAQS	1-Hour (75 ppb)	Designations Pending (expect Unclassifiable/Attainment)	N/A (attained)
	NAAQS	24-Hour (0.14 ppm) Annual (0.03 ppm)	Unclassifiable/Attainment	3/19/1979 (attained)
PM_{10}	NAAQS	1987 24-Hour (150 $\mu g/m^3$)	Attainment (Maintenance)	7/26/2013 (attained)
	CAAQS	24-hour (50 $\mu g/m^3$) Annual (20 $\mu g/m^3$)	Nonattainment	N/A
$PM_{2.5}$	NAAQS	2006 24-Hour (35 $\mu g/m^3$)	Nonattainment (Serious)	12/31/2019
	NAAQS	1997 Annual (15.0 $\mu g/m^3$)	Nonattainment	4/5/2015
	NAAQS	2012 Annual (12.0 $\mu g/m^3$)	Nonattainment (Serious)	12/31/2025
	CAAQS	Annual (12.0 $\mu g/m^3$)	Nonattainment	N/A
Lead	NAAQS	3-Months Rolling (0.15 $\mu g/m^3$)	Nonattainment (Partial)	12/31/2015
Hydrogen Sulfide (H_2S)	CAAQS	1-Hour (0.03 ppm/42 $\mu g/m^3$)	Attainment	--
Sulfates	CAAQS	24-Hour (25 $\mu g/m^3$)	Attainment	--
Vinyl Chloride	CAAQS	1-Hour (0.01 ppm/ 26 $\mu g/m^3$)	Attainment	--

SOURCE: South Coast Air Quality Management District. February 2016. *Air Quality Management Plan (AQMP).* Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=2

Air Quality Monitoring Stations

The SCAQMD monitors air quality through a network of 39 permanent, multi-pollutant monitoring stations and 4 additional single-pollutant source impact Lead (Pb) monitoring stations in the Basin and a portion of the Salton Sea Air Basin in Coachella Valley.[18] The closest monitoring station to study area of the proposed project is the Santa Clarita-Placerita Monitoring Station, located approximately 4.5 miles to the southeast of the project boundary at 22224 Placerita Canyon, Santa Clarita, California 91321. Santa Clarita Monitoring Station measures carbon monoxide, nitrogen dioxide, ozone, PM_{10}, and $PM_{2.5}$. The nearest monitoring station that records measurements of sulfur dioxide is the Burbank Monitoring Station, located approximately 25 miles to the southeast of the project boundary at 228 West Palm Avenue, Burbank, California 91502.

Ambient air quality data for the proposed project vicinity recorded at the two monitoring stations from 2012 to 2014 indicated exceedances for the applicable state standards for ozone, $PM_{2.5}$, and PM_{10} (Table 8, *Summary of 2012–2014 Ambient Air Quality Data in the Trails Plan Vicinity*).

[18] Annual Air Quality Monitoring Network Plan. July 2015. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-monitoring-network-plan/annual-air-quality-monitoring-network-plan.pdf?sfvrsn=13

TABLE 8
SUMMARY OF 2012–2014 AMBIENT AIR QUALITY DATA IN THE TRAILS PLAN VICINITY

Pollutant		Pollutant Concentration and Standards	Average and Exceedances 2012	2013	2014
Ozone*		Maximum 1-hr concentration (ppm)	0.134	0.134	0.137
		Days above state 1-hr standard	45	30	32
		Maximum 8-hr concentration (ppm)	0.112	0.104	0.111
		Days above state 8-hr standard	83	58	65
Carbon Monoxide*		Maximum 1-hr concentration (ppm)	—	—	—
		Days above state 1-hr standard	—	—	—
		Maximum 8-hr concentration (ppm)	0.82	—	—
		Days above state 8-hr standard	0	0	0
Nitrogen Dioxide*		Maximum 1-hr concentration (ppm)	0.066	0.065	.057
		Days above state 1-hr standard	0	0	0
		Annual concentration (ppm)	.013	.014	.012
		Exceed 0.03 ppm (state annual standard)?	No	No	No
Particulate Matter	$PM_{2.5}$*	Maximum 24-hr concentration ($\mu g/m^3$)	29.0	29.5	28.9
		Days above federal 24-hr standard	—	—	-
		Annual concentration ($\mu g/m^3$)	14	13	10
		Exceed 12 $\mu g/m^3$ (state annual standard)?	Yes	Yes	No
	PM_{10}*	Maximum 24-hr concentration ($\mu g/m^3$)	37.0	43.0	47.0
		Days above state 24-hr standard	0	0	0
		3-year maximum annual concentration ($\mu g/m^3$)	20	21	22
		Exceed 20 $\mu g/m^3$ (state annual standard)?	No	Yes	Yes
Sulfur Dioxide**		Maximum 24-hr concentration (ppm)	.002	.002	—
		Maximum 1-hr concentration (ppm)	—	—	—
		Exceed 0.04 ppm (State 24-hr standard)?	No	No	—
		Exceed 0.25 ppm (State 1-hr standard)	—	—	—

NOTE: ppm = parts per million. $\mu g/m^3$ = micrograms per cubic meter. — = There was insufficient (or no) data available to determine the value

* Data for Ozone, Carbon Monoxide, Nitrogen Dioxide, and $PM_{2.5}$, were taken from the Santa Clarita-Placerita Monitoring Station.

** Data for Sulfur Dioxide was taken from the Burbank Monitoring Station.

SOURCE: California Air Resources Board. Accessed 5 February 2016. *Air Quality Data Statistics*. Available at: http://www.arb.ca.gov/adam/

Greenhouse Gas Emissions

In order to establish a reference point for future GHG emissions, carbon dioxide equivalent (CO_{2e}) emissions have been projected based on an unregulated, business-as-usual, GHG emissions scenario that does not consider the reductions in GHG emissions required by Executive Order S-3-05 or AB 32. In December 2007, CARB stated that California contributed 427 million MT of GHG emissions in CO_{2e} in 1990, and under a business-as-usual development scenario, will contribute approximately 509 million MT of CO_{2e} emissions in 2020, which presents a linear upward trend in California's total GHG emissions. These numbers were based on the IPCC's Second Assessment

Report. Under AB 32, California must reduce emissions to 1990 levels by 2020. By 2013, most climate change organizations were adopting the IPCC's Fourth Assessment Report, which revises global warming potentials of GHG. As a result, ARB updated the new 2020 statewide limit to 431 MMT CO_{2e} by 2020. CARB plans on achieving the reductions through the following sectors: energy (25 MMT), transportation (23 MMT), high-GWP (5 MMT), waste (2 MMT), and cap-and-trade (23 MMT).[19]

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. People with compromised immune systems may be exposed to emissions released from the construction and operation of the proposed project. The greatest potential for exposure of sensitive receptors to air contaminants would occur during the temporary construction phase.

The proposed project is situated in a rural community with approximately 29,000 residents in the unincorporated communities of Castaic, Castaic Junction, Val Verde, Hasley Canyon, Hillcrest, and Paradise Ranch. Other destinations of note are Castaic Lake; the canyons of Charlie, Tapia, Romero, Sloan, and Violin; the Valencia Commerce Center; the Peter Pitchess Detention Center; and the Northlake development and part of the Newhall Ranch developments. There are 12,011 known sensitive receptors within the study area and an additional 5,318 known sensitive receptors within a 0.5-mile radius of the study area (Figure 6, *Sensitive Receptors*).

Exposure of sensitive receptors to potential emissions would vary from day to day, depending on the amount of work being conducted, the weather/wind conditions, the location of receptors, and the length of time that receptors would be exposed to air emissions.

Due to the short-term and segmented nature of project construction on this programmatic level, sensitive receptors would not be expected to be significantly affected by the proposed project. In addition, although off-site residents, both adults and children, would have a longer potential duration of exposure to the project's constructional air emissions, exposure is reduced with distance. The proposed project is expected to result in potential impacts below the level of significance.

[19] California Air Resources Board. 2013. *Climate Change Scoping Plan Update*. Available at: http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf

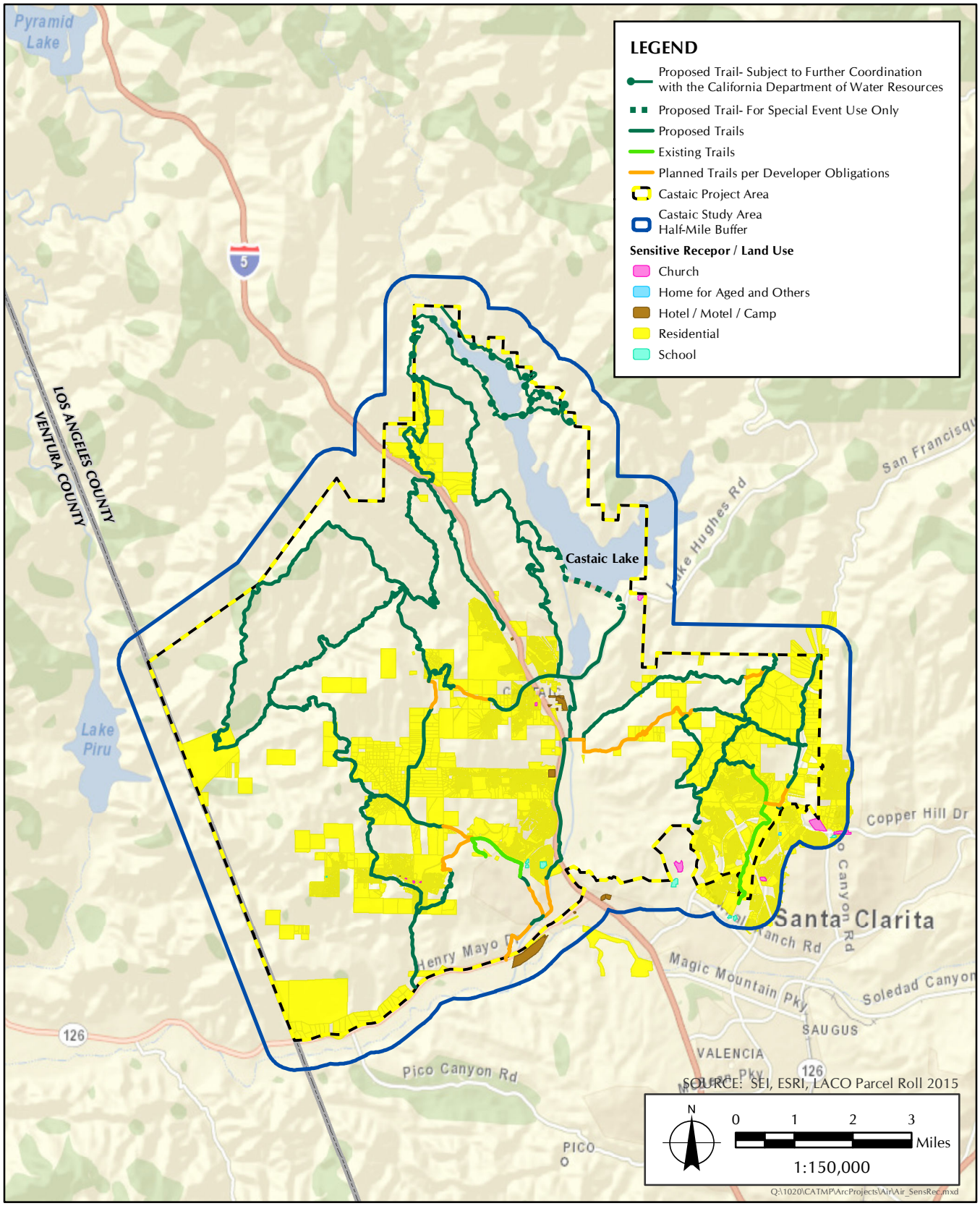

FIGURE 6

Sensitive Receptors

STUDY METHODS AND MODELS

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

Definitions

Air Quality Handbook. Prepared by SCAQMD, the CEQA Air Quality Handbook recommends methodologies for assessing air quality impacts as they relate to CEQA.

CalEEMod. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects.

Criteria Pollutants. The Clean Air Act requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards for six common air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead.

EMFAC. The SCAQMD Emission Factors (EMFAC) model is embedded within the CalEEMod software to estimate emissions from on-road vehicles. It includes the Pavley Standards and the Low Carbon Fuel Standards.

SCAQMD. SCAQMD is the air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties.

Toxic Air Contaminants. Additional pollutants have been determined by the State Board to be toxic air contaminants (TACs) as defined in Health and Safety Code Section 39655.

Conceptual Construction Scenario

CalEEMod Version 2013.2.2 was used to estimate construction emissions from the proposed project (Appendix A, *CalEEMod Output for the Castaic Area Multi-Use Trails Plan*). The proposed network of trails is being analyzed at the project level and is representative of how the conceptual plan would be implemented, allowing a basis for determining the impacts at the programmatic level. Additionally, CalEEMod was used to estimate emissions from the operation of proposed trails that would be likely to result from additional vehicle trips traveling to and from the proposed project study area by trail users. The following assumptions were made to perform the air quality analysis:

1. The "recreational" land use category was designated for the air quality analysis.

2. Construction would be conducted in accordance with the guidelines specified in the County Trails Manual. The County Trails Manual contains specific methods for building trails in areas with steep slopes and riparian crossings. The County Trails Manual should be referenced for further information to determine the constructability of trail segments.

3. The trail corridor width was assumed to be 12 feet. Actual trail widths range from 2 feet to 11 feet in width, so 12 feet is used as a conservative estimate.

4. The area of disturbance was assumed to be approximately 132 acres (90 miles × 12 feet width × unit conversion factors). Site preparation and grading were the only construction phases included in the model.

5. The derived empirical parking trip rate was 4.9 trips per mile of trail.[20] Default values for other trip characteristics were used.

6. Although the trails and related appurtenant facilities are expected be constructed through 2035 planning horizon in the County of Los Angeles General Plan, for the purpose of this analysis, the construction phase was assumed to take 48 months from January 1, 2017, to December 30, 2020. The operational year for the proposed project was assumed to be 2021. This would be a reasonable worst case scenario provided that funding became available for completion of all proposed trails.

7. To prevent the need for importing/exporting soil from off-site for the proposed project, utilization of "cut-and-fill" best management practices were assumed to be implemented into the construction phase. Default values of zero were used for material exported/imported.

8. The equipment listed in Table 9, *Construction Equipment List*, was assumed to calculate construction emissions for the proposed project:

TABLE 9
CONSTRUCTION EQUIPMENT LIST

Equipment	Horsepower Rating	Hours of Operation per Day
Site Preparation		
Two tractor/loader/backhoe	97	4
One water truck	400	4
Grading		
Four rubber tired dozers	255	4
Two grader	174	4
One water truck	400	4

NOTE: A load factor indicates the average proportion of rated power used.

One tractor/loader/backhoe operating 8 hours/day for 260 days a year was included as operational off-road equipment for trail maintenance.

9. No area air emissions sources were selected, assuming that area sources in the vicinity of the proposed project would be negligible. The zoning for the study area is defined as 53 percent Rural, 17 percent Open Space, 11 percent Residential, 5 percent Industrial, <1 percent Commercial, and 15 percent Other (Freeway ROW, Public and Semi-Public, Specific Plan). While there are oil wells within the study area, many attempts to find oil in the early 1900s were unsuccessful, and many

[20] The Santa Susana Trail Master Plan, which is located within 10 miles south of the Castaic Lakes project study area, developed an empirical parking trip rate of 4.9 trips per mile of trail based upon the Saturday AM Peak Hour Vehicle Trip Rate (56 percent inbound, 44 percent outbound). This assumption was used for the proposed project.

wells were abandoned. The Southern California Gas Company currently has 40 active gas wells in an underground natural gas storage field at Honor Rancho. These oil/gas wells were not accounted for in the air emission modeling. Operational energy, waste, and water sources were not considered at this programmatic level. Emissions from construction and operation of any buildings or structures within the study area will need to be considered on the project level.

10. Two recommended measures were selected for the construction phase of the proposed project: Reduce vehicular speed on unpaved roads to less than 15 miles per hour (mph). Water exposed areas three times a day.

The analysis of air impacts from construction is based on potential worst-case scenario for construction activities, including the site preparation and grading of trails.

Emissions from construction activities are represented in the model through off-road construction equipment and worker/vendor trips. These sources represent the majority of the construction emissions. All construction activities of the proposed project would be in accordance with all federal, state, and County building codes and the County Trails Manual. The County would require preparation of a trail site plan, site-specific geotechnical investigation, survey for biological and cultural resources, and a Categorical Exemption (or other appropriate CEQA document) in support of each trail segment before project approval and construction can commence.

Construction best management practices would be used. Construction equipment would be turned off when not in use. The construction contractor would ensure that all construction and grading equipment is properly maintained. All vehicles and compressors would utilize exhaust mufflers and engine enclosure covers (as designed by the manufacturer) at all times.

EMFAC 2011 Model

CARB EMFAC 2011 model, which is embedded in CalEEMod, was used to evaluate the proposed project's emissions from mobile sources, such as passenger cars and maintenance vehicles, based on the expected vehicle fleet mix, vehicle speeds, commute distances, and temperature conditions for the estimated start date of the proposed project.

SIGNIFICANCE CRITERIA

The air quality impacts associated with the proposed project 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 project 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.[21]

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

Air Quality

Would the proposed project:

(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?
(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)?

The impacts to air quality were evaluated in accordance with the most recent SCAQMD significance thresholds for criteria pollutants (Table 10, *SCAQMD Air Quality Significance Thresholds*).

TABLE 10
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: South Coast Air Quality Management District. 1993. *CEQA Handbook*.

(d) Expose sensitive receptors to substantial pollutant concentrations?
(e) Create objectionable odors affecting a substantial number of people?

Greenhouse Gases

Would the proposed project:

(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?

IMPACT ANALYIS

Air quality impacts for a project can be categorized in three main categories:

1. *Construction Impacts*—temporary impacts, including airborne dust and gaseous emissions from heavy construction equipment, and worker/vendor trips. Construction emissions vary substantially from day to day, depending on the level of construction phase and weather conditions.

2. *Operational Impacts*—long term permanent impacts from vehicles traveling to and from the trailheads, which is the main source of operational emissions. Natural gas and electricity usage was not included in the impact analysis.

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

Construction Impacts

Construction of the proposed project would not cause a violation of the SCAQMD AQMP because it would not impede the ability of the basin to achieve the NAAQS attainment deadlines for those pollutants not in attainment. Designations for attainment are the determined from the ambient air quality. The proposed project would further be consistent with the AQMP's goals to invest in strategies that improve air quality by supporting transportation control measures to reduce VMT. This is also consistent with the Air Quality Element for the County of Los Angeles General Plan, which states a direct link between transportation activities and air pollution. The project design measures to limit particulate matter from construction are in alignment with Policy AQ 1.3.

Construction has the potential to create air quality impacts through the use of construction equipment and through vehicle trips generated from construction workers traveling to and from study area. Fugitive dust emissions would primarily result from grading and site preparation activities. NO_x emissions would primarily result from tailpipe emissions of construction equipment and associated vehicles. Construction emissions are variable depending on the exact timing of construction from multiple subdivision agreements, daily weather, level of activity, and type of activity. The model represents a reasonable worst-case scenario.

Potential emissions estimates from construction activities are based on emissions factors and construction scenario information for development of the proposed project site. The total amount of construction, including duration and level of construction activity occurring at the proposed project site, would influence the estimated construction emissions and resulting potential impacts. The emissions forecasts are therefore based on conservative assumptions about the construction scenario. The construction scenario assumes all trails being built in four years, which would be a reasonable worst-case scenario. Estimates in this analysis are based upon four continuous years of construction (one year for site preparation and three years for grading). Construction of any buildings in the study area is not modeled and should be evaluated on the project level. Because of the conservative nature of these assumptions, actual emissions from the individual construction projects would most likely be less than the forecasted estimates.

The project's daily construction emissions were generated using CalEEMod 2013.2.2. Table 11, *Estimated Daily Construction Emissions*, summarizes the daily construction emissions associated with the proposed project's construction activities, and indicates that emissions would be far below the SCAQMD daily constructional emissions thresholds of significance.

TABLE 11
ESTIMATED DAILY CONSTRUCTION EMISSIONS

Criteria Air Pollutants	Mitigated Construction Emissions[1] Project Emissions[2] (pounds/day) 2017	2018	2019	2020	SCAQMD Daily Significance Threshold (pounds/day)	Exceed Significance Threshold?
Carbon monoxide (CO)	5.17	25.45	24.37	23.00	550	No
Sulfur Dioxide (SO_2)	.01	.03	.03	.03	150	No
Nitrogen oxides (NO_x)	8.08	35.98	33.37	30.51	100	No
Reactive organic gases (ROGs)	0.78	3.41	3.22	3.01	75	No
Particulate matter (PM_{10})	0.96	11.50	11.37	11.24	150	No
Fine particulate matter ($PM_{2.5}$)	0.46	6.82	6.69	6.57	55	No

NOTE: [1] Includes two recommended measures: Reduce speed on unpaved roads to less than 15 mph and water exposed area three times a day.
[2] Daily emissions taken from CalEEMod Summer Report.
SOURCE: CalEEMod 2013.2.2.

According to the CalEEMod analysis summarized in Table 11, construction emissions associated with the proposed project are expected to be below the level of significance as determined by the SCAQMD. No mitigation measures are required.

Sensitive Receptors

Construction emissions from criteria air pollutants and odor impacts are expected to be below the level of significance. Therefore, the short-term exposure of sensitive receptors to the proposed project's construction air emissions is expected to be less than significant.

Odors

Odor nuisances are typically associated with land uses and industrial operations, such as agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Since the proposed project includes construction of trails in an undeveloped region of Los Angeles County, and does not include any land uses or industrial operations typically associated with odor nuisance, odor impacts from the proposed project would be expected to be below the level of significance. Therefore, construction of proposed project would not result in new or substantially more adverse significant impacts related to odor.

Operational Impacts

The proposed project would minimally increase the number of vehicles coming to and from the parks and open space areas in Castaic by providing recreational opportunities close to where people live and through the long term conservation of open space lands. These trips would be recreational in purpose, occurring mainly on weekends and/or outside peak hour traffic, and therefore not causing additional traffic. With limited new trips, the proposed project would support

Goal 2 of the County of Los Angeles General Plan by coordinating land use, transportation, and air quality planning. The proposed project would also not have a long term consequence on achieving attainment deadlines in the SCAQMD AQMP for criteria pollutants that are not in attainment.

Given that the proposed project would be operated as a trail that would not require any stationary sources for daily operation and maintenance, long-term operation-related air emissions in the proposed project study area are likely to result from vehicles traveling to and from the trailheads and minimal usage of a loader/backhoe/tractor for trail maintenance. The trip rate is from the Santa Susana Trails Plan, which used 4.9 trips/mile, the Saturday AM Peak hourly trip rate. This number was used as the trip rate for both weekend days and adjusted to half that amount for the estimated weekday trip rate. It was assumed that the trail would be operational for 12 hours a day.

Long-term operational emissions of the proposed project are listed in Table 12, *Estimated Daily Operational Emissions*. As shown in Table 5, daily operational emissions of the criteria air pollutants would not exceed SCAQMD mass daily thresholds of significance. Thus, the proposed project would result in a less than significant impact to air quality during operations and would require no mitigation measures.

TABLE 12
ESTIMATED DAILY OPERATIONAL EMISSIONS

Criteria Air Pollutants	Mitigated Operational Emissions[1]		Exceed Significance Threshold?
	Project Emissions[2] (pounds/day)	SCAQMD Daily Significance Threshold (pounds/day)	
Carbon monoxide (CO)	174.02	550	No
Sulfur Dioxide (SO_2)	0.57	150	No
Nitrogen oxides (NO_x)	41.90	55	No
Reactive organic gases (ROGs)	15.19	55	No
Particulate matter (PM_{10})	69.76	150	No
Fine particulate matter ($PM_{2.5}$)	18.52	55	No

NOTE: [1] Includes one mitigation measure: Reduce speed on unpaved roads to less than 15 mph**.**
[2] Daily emissions taken from CalEEMod Summer Report.
SOURCE: CalEEMod 2013.2.2.

According to the CalEEMod analysis summarized in Table 12, operational emissions associated with Phase I of the proposed project are expected to be below the level of significance as determined by the SCAQMD. No mitigation measures are required.

Toxic Air Contaminants

SCAQMD recommends that health risk assessment be conducted for substantial sources of diesel particulate emissions such as emissions from truck stops and warehouse distribution facilities. The operation of proposed project as a 100-mile network of trails would not be expected to require large-scale heavy-duty equipment operations or to generate daily truck trips. To take a conservative approach when considering the proposed project's contribution to the TAC levels, trucks used for maintenance purposes, during the project's operation, would be the only potential source contributing to the TAC level at the proposed project site. However, the number and frequency of

heavy-duty trucks accessing the proposed project site on a daily basis would be minimal to negligible. In addition, other sources such as commercial development, manufacturing industries, and automobile repair facilities are typical sources of acute and chronically hazardous TACs. Because the proposed project site does not contain commercial developments, manufacturing industries, or automobile repair facilities, additional amounts of TACs would be less likely to be contributed to the proposed project site. The proposed project would promote physical activity, which studies have shown to lower the risk of chronic disease and obesity. Walking and biking mode shares in the SCAG region are expected to increase by 28 percent and 71 percent, respectively, compared with the existing (2012) conditions. The proposed project would be consistent with this goal. Therefore, project operation-related TAC emissions would be less than significant.

Sensitive Receptors

SCAQMD recommends that health risk assessments be conducted for substantial sources of diesel particulate emissions (e.g., truck stops and warehouse distribution facilities) and has provided guidance for analyzing mobile source diesel emissions. In addition, typical sources of acutely and chronically TACs include industrial manufacturing processes; automotive repair facilities; and dry cleaning facilities. Since the proposed project does not include these uses, a health risk assessment is not warranted. Potential project-generated air toxic impacts that may be generated by construction equipment would be short-term. Daily operational air emissions of criteria air pollutants and TAC levels would be expected to be below the level of significance. Therefore, the long-term exposure of sensitive receptors to the proposed project's operational air emissions would be less than significant.

Odors

According to the CARB Air Quality Handbook, land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Because the proposed project does not contain any of these land uses or industrial operations that are typically associated with odor nuisance and will require minimal use of diesel-powered mechanical equipment for maintenance, impacts would be less than significant.

Cumulative Impacts

The County portion of the Basin is a nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The project would generate these pollutants during the construction of trail improvements. Short-term cumulative impacts related to air quality could occur if project construction and nearby construction activities were to occur simultaneously. In particular, with respect to local impacts, cumulative construction particulate matter (i.e., fugitive dust) impacts are considered when projects are located within a few hundred yards of each other. Many of the related projects located within the project study area are residential subdivisions with the potential to create significant air quality impacts cumulatively. However, the proposed project is a trails plan, and is not expected to contribute significantly to a cumulative air quality impact. Therefore the proposed project's emissions would not be cumulatively considerable.

Greenhouse Gas Emissions

As of February 2016, SCAQMD, state, and federal agencies have not set mandatory significance thresholds for project impacts on climate change and global warming. SCAQMD has set a guidance threshold of 10,000 MT/year CO_{2e} for industrial facilities, but the guidance does not apply to the proposed project. More broadly, the U.S. EPA has set a GHG reporting threshold for facilities emitting at least 25,000 MT CO_{2e} / year. The construction and operation of the proposed project would involve movement of people and cars including emissions from passenger cars, light-duty trucks, sport utility vehicles, and maintenance trucks during active park hours and other construction timeframes. It is anticipated that a relative small amount of CO_{2e} emissions not to exceed 1,263.82 MT (construction) and 5,455.45 MT (operation) would occur, which is a relatively small amount for this type of recreation use. The proposed project would be below both guidances and would therefore have a less than significant impact with regard to greenhouse gas emissions (Table 13, *Greenhouse Gas Emissions*).

TABLE 13
GREENHOUSE GAS EMISSIONS

Phase	Project CO_{2e} Emissions[1] (MT CO_{2e}/year)	Significant?
Construction emissions	1,263.82	No
Operational emissions	5,455.45	No

NOTE: [1] Yearly emissions taken from CalEEMod Annual Report.

CONCLUSIONS, RECOMMENDATIONS, AND CONSIDERATIONS FOR TRAIL PLANNING

Air Quality Management Plan

The proposed project is expected to be consistent with the SCAQMD AQMP that was adopted in 2012. The 2012 AQMP sets forth a program for the South Coast Air Basin to achieve compliance with the federal 24-hour $PM_{2.5}$ standard and federal 8-hour ozone standards. Because the construction and operational emissions for $PM_{2.5}$ and ozone precursors are below the significance threshold set by SCAQMD, the proposed project would not conflict with or obstruct implementation of SCAQMD's AQMP, cause a violation of the standards, or impact the attainment status of SCAQMD. Therefore, the contribution of the proposed project to cumulative impacts would not result in new or substantially more adverse significant impacts.

Air Quality Violations

According to the CalEEMod analysis contained herein, construction and operation of the proposed project is not expected to result in a violation of an air quality standard, or contribute substantially to an existing or projected air quality violation. Best management practices, including watering construction areas three times a day and reducing vehicle speeds on unpaved roads, were built into the air emissions modeling to reduce particulate matter emissions. It is recommended that in order to remain in compliance with SCAQMD Rule 403, *Fugitive Dust*, the measures outlined in Table 14, *Best Management Practices for Fugitive Dust*, be implemented whenever feasible.

TABLE 14
BEST MANAGEMENT PRACTICES FOR FUGITIVE DUST

Source Activity	Mitigation Measure	PM_{10} Control Efficiency	Recommendations	Estimated Cost[1]
Trackout	Use a gravel apron, 25 feet long by road width, to reduce mud/dirt trackout from unpaved truck exit routes.	46%		$1,360/year (gravel apron dimensions: 50′ x 30′ x 3″ thick)
Construction activities	Apply water every 3 hours to disturbed areas within a construction site.	61%	3.2-hour water interval.	No data
Scraper loading and unloading	Require minimum soil moisture of 12% for earthmoving by use of a moveable sprinkler system or a water truck. Moisture content can be verified by lab sample or moisture probe.	69%	AP-42 emission factor equation for materials handling due to increasing soil moisture from 1.4% to 12%.	$138/acre (sprinkler system to maintain minimum soil moisture of 12%)
Construction traffic	Limit on-site vehicle speeds (on unpaved roads) to 15 mph by radar enforcement.	57%	Assume linear relationship between PM_{10} emissions and uncontrolled vehicle speed of 35 mph.	$22/inspection, $180/sign
Travel over unpaved roads	Apply chemical dust suppressant annually to unpaved parking areas	84%		$5,340/acre-year (useful life of 1 year)

NOTE: [1] 2003 dollars.
SOURCE: South Coast Air Quality Management District. April 2007. Mitigation Measure Examples. Available at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust

It is further recommended that construction of the proposed project utilize "cut-and-fill" best management practices to prevent the need for importing/exporting soil from off-site, thus further reducing the potential impact of fugitive dust in the project vicinity and emissions from haul trucks to and from the project site.

Criteria Pollutants

As of February 2016, the South Coast Air Basin has been designated as nonattainment for ozone, $PM_{2.5}$, PM_{10}, and lead. According to the CalEEMod analysis contained herein, the emission of criteria pollutants (including ozone precursors such as nitrogen oxides) associated with construction and operation of the proposed project would be below the SCAQMD daily significance threshold, and therefore would not result in a cumulatively considerable net increase of any criteria pollutants for which the project region in non-attainment under federal and/or state ambient air quality standards.

Sensitive Receptors

The proposed project is situated in the Castaic Area of Los Angeles County with the Angeles National Forest to the north, the City of Santa Clarita to the southeast, Highway 126 to the south, and Ventura County to the west. There are 12,011 known sensitive receptors within the proposed project study area. There are an additional 5,318 known sensitive receptors within a 0.5-mile radius of the proposed project study area.

Exposure of sensitive receptors to potential emissions would vary from day to day, depending on the amount of work being conducted, the weather conditions, the location of receptors, and the length of time that receptors would be exposed to air emissions.

Due to the short-term nature of project construction, sensitive receptors would not be expected to be adversely affected by construction, operation, or maintenance of the proposed project. In addition, although off-site residents, both adults and children, would have a longer potential duration of exposure to the project's construction air emissions, the distance from the proposed project site would be expected to be below the level of significance because the best management practices for dust suppression would be required for construction.

Objectionable Odors

Odor nuisances are typically associated with land uses and industrial operations, such as agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Since the proposed project includes construction of trails in an undeveloped region of Los Angeles County, and does not include any land uses or industrial operations typically associated with odor nuisance, odor impacts from the proposed project would be expected to be below the level of significance. Operational impacts related to generating objectionable odors would be below the level of significance.

Greenhouse Gas Emissions

Based on the CalEEMod results and evaluation of federal, state, and regional guidance, construction and operation of the proposed project is not expected to result in generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. The proposed project is consistent with the 2016 RTP/SCS because it provides recreational opportunities closer to where people live, thereby reducing per capita VMT. For Los Angeles County, there were 226,000 daily VMT in 2012. The proposed project only minimally increases trips and at non-peak hours while encouraging the 2016 RTP/SCS environmental and public health goals by creating more recreation space within Los Angeles County. At most, during the operational phase, the proposed project would be responsible for 5,455.45 MT of CO_{2e} per year. Therefore, GHG emissions associated with construction and operation of the proposed project would be below the level of significance.

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APPENDIX A
CALEEMOD OUTPUT FOR
CASTAIC AREA MULTI-USE TRAILS PLAN

Castaic Trails Plan

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	132.00	Acre	132.00	5,749,920.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 132 acres of disturbance

Construction Phase - Projects would be completed incrementally by subdivision agreement, but modeling represents total project impact assuming full build out of 100 miles of trails in 4 years. It assumes one year of site preparation and 3 years of grading.

Off-road Equipment - Grading assumptions: 2 Graders for 4 hrs/day, 4 dozers for 4 hrs/day, 1 off highway truck for 4 hrs/day

Off-road Equipment - Site prep assumptions: 2 backhoes for 4 hrs/day, 1 off highway truck for 4 hrs/day

Trips and VMT - Reduced worker trips/day to 1.25* #Equipment as per AQMD's Appendix A: Calculation Details for CalEEMod. 1 vendor trip is used for the water truck. Assume no hauling.

Grading - 132 acres disturbed

Vehicle Trips - 4.9 trips/mi/hr assumed to derived empirical trip rate, as taken from Santa Susana Trails Plan. 4.9 trips/mi/hr * 12 hours * 90.8 mi trails= 5339 trips for 132 acres. Assume ~40 trips/acre/day on Saturday and Sunday and ~20 trip/acre/day during the week.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Road Dust -

Consumer Products - assume no area emissions

Area Coating - assume no area emissions

Landscape Equipment -

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Water construction areas 3x/day. Reduce vehicle speed on unpaved roads to 15 mph.

Mobile Land Use Mitigation -

Operational Off-Road Equipment - Assume 1 tractor/loader/backhoe for 8 hr/day, 260 days a year for maintenance.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	15812250	0
tblConstructionPhase	NumDays	465.00	784.00
tblConstructionPhase	NumDays	180.00	260.00
tblConstructionPhase	PhaseEndDate	12/29/2017	12/31/2017
tblGrading	AcresOfGrading	392.00	132.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2021
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	8.00	4.00
tblTripsAndVMT	WorkerTripNumber	18.00	9.00
tblVehicleTrips	ST_TR	1.59	40.00
tblVehicleTrips	SU_TR	1.59	40.00
tblVehicleTrips	WD_TR	1.59	20.00

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					
2017	0.1013	1.0510	0.6717	1.3900e-003	0.0786	0.0537	0.1323	9.8600e-003	0.0494	0.0593						127.6198
2018	0.4453	4.6970	3.3192	4.2400e-003	4.8096	0.2220	5.0315	2.6076	0.2042	2.8119						385.4602
2019	0.4199	4.3564	3.1774	4.2400e-003	4.8096	0.2053	5.0149	2.6076	0.1889	2.7965						378.9338
2020	0.3937	3.9983	3.0096	4.2600e-003	4.8096	0.1883	4.9979	2.6077	0.1732	2.7809						371.8072
Total	**1.3601**	**14.1026**	**10.1778**	**0.0141**	**14.5073**	**0.6693**	**15.1766**	**7.8328**	**0.6158**	**8.4486**						**1,263.8209**

2.1 Overall Construction

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					
2017	0.1013	1.0509	0.6717	1.3900e-003	0.0705	0.0537	0.1242	9.9900e-003	0.0494	0.0594						127.6197
2018	0.4453	4.6970	3.3192	4.2400e-003	3.7712	0.2220	3.9931	2.0389	0.2042	2.2431						385.4597
2019	0.4199	4.3564	3.1774	4.2400e-003	3.7712	0.2053	3.9765	2.0389	0.1889	2.2278						378.9334
2020	0.3937	3.9983	3.0096	4.2600e-003	3.7713	0.1883	3.9596	2.0389	0.1732	2.2121						371.8068
Total	**1.3601**	**14.1026**	**10.1778**	**0.0141**	**11.3841**	**0.6693**	**12.0534**	**6.1267**	**0.6158**	**6.7425**						**1,263.8195**

	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**	**21.53**	**0.00**	**20.58**	**21.78**	**0.00**	**20.19**	**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	23.8312	2.0000e-005	1.6900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005						3.4600e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Mobile	1.7415	5.0257	20.2394	0.0644	7.8938	0.0872	7.9810	2.0332	0.0804	2.1136						4,489.9462
Offroad	0.0244	0.2465	0.2938	4.0000e-004		0.0145	0.0145		0.0134	0.0134						35.7274
Waste						0.0000	0.0000		0.0000	0.0000						9.4668
Water						0.0000	0.0000		0.0000	0.0000						920.3062
Total	**25.5971**	**5.2722**	**20.5349**	**0.0648**	**7.8938**	**0.1017**	**7.9956**	**2.0332**	**0.0938**	**2.1270**						**5,455.4501**

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	23.8312	2.0000e-005	1.6900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005						3.4600e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Mobile	1.7415	5.0257	20.2394	0.0644	7.8938	0.0872	7.9810	2.0332	0.0804	2.1136						4,489.9462
Offroad	0.0244	0.2465	0.2938	4.0000e-004		0.0145	0.0145		0.0134	0.0134						35.7274
Waste						0.0000	0.0000		0.0000	0.0000						9.4668
Water						0.0000	0.0000		0.0000	0.0000						1,840.6125
Total	**25.5971**	**5.2722**	**20.5349**	**0.0648**	**7.8938**	**0.1017**	**7.9956**	**2.0332**	**0.0938**	**2.1270**						**6,375.7563**

	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	**0.10**	**4.67**	**1.43**	**0.62**	**0.00**	**14.28**	**0.18**	**0.00**	**14.25**	**0.63**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**-16.21**

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	1/1/2017	12/31/2017	5	260	
2	Grading	Grading	1/1/2018	12/31/2020	5	784	

Acres of Grading (Site Preparation Phase): 132

Acres of Grading (Grading Phase): 132

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; 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	Off-Highway Trucks	1	4.00	400	0.38
Site Preparation	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Grading	Graders	2	4.00	174	0.41
Grading	Off-Highway Trucks	1	4.00	400	0.38
Grading	Rubber Tired Dozers	4	4.00	255	0.40

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	3	4.00	1.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	9.00	1.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2017

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					0.0700	0.0000	0.0700	7.5600e-003	0.0000	7.5600e-003						0.0000
Off-Road	0.0979	1.0349	0.6158	1.2600e-003		0.0535	0.0535		0.0492	0.0492						117.5529
Total	**0.0979**	**1.0349**	**0.6158**	**1.2600e-003**	**0.0700**	**0.0535**	**0.1235**	**7.5600e-003**	**0.0492**	**0.0568**						**117.5529**

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
Vendor	1.1200e-003	0.0121	0.0150	3.0000e-005	9.1000e-004	1.8000e-004	1.0900e-003	2.6000e-004	1.7000e-004	4.3000e-004						2.8875
Worker	2.2900e-003	3.9600e-003	0.0409	1.0000e-004	7.6700e-003	7.0000e-005	7.7400e-003	2.0400e-003	6.0000e-005	2.1000e-003						7.1794
Total	**3.4100e-003**	**0.0160**	**0.0559**	**1.3000e-004**	**8.5800e-003**	**2.5000e-004**	**8.8300e-003**	**2.3000e-003**	**2.3000e-004**	**2.5300e-003**						**10.0669**

3.2 Site Preparation - 2017

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					0.0546	0.0000	0.0546	5.8900e-003	0.0000	5.8900e-003						0.0000
Off-Road	0.0979	1.0349	0.6158	1.2600e-003		0.0535	0.0535		0.0492	0.0492						117.5528
Total	**0.0979**	**1.0349**	**0.6158**	**1.2600e-003**	**0.0546**	**0.0535**	**0.1081**	**5.8900e-003**	**0.0492**	**0.0551**						**117.5528**

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
Vendor	1.1200e-003	0.0121	0.0150	3.0000e-005	1.5800e-003	1.8000e-004	1.7600e-003	4.2000e-004	1.7000e-004	5.9000e-004						2.8875
Worker	2.2900e-003	3.9600e-003	0.0409	1.0000e-004	0.0143	7.0000e-005	0.0144	3.6700e-003	6.0000e-005	3.7300e-003						7.1794
Total	**3.4100e-003**	**0.0160**	**0.0559**	**1.3000e-004**	**0.0159**	**2.5000e-004**	**0.0162**	**4.0900e-003**	**2.3000e-004**	**4.3200e-003**						**10.0669**

3.3 Grading - 2018

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					4.7913	0.0000	4.7913	2.6028	0.0000	2.6028						0.0000
Off-Road	0.4396	4.6778	3.2211	3.9900e-003		0.2217	0.2217		0.2039	0.2039						366.9887
Total	**0.4396**	**4.6778**	**3.2211**	**3.9900e-003**	**4.7913**	**0.2217**	**5.0130**	**2.6028**	**0.2039**	**2.8067**						**366.9887**

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
Vendor	1.0600e-003	0.0111	0.0145	3.0000e-005	9.2000e-004	1.7000e-004	1.0900e-003	2.6000e-004	1.6000e-004	4.2000e-004						2.8507
Worker	4.6100e-003	8.1200e-003	0.0836	2.2000e-004	0.0173	1.5000e-004	0.0175	4.6000e-003	1.4000e-004	4.7400e-003						15.6208
Total	**5.6700e-003**	**0.0192**	**0.0981**	**2.5000e-004**	**0.0183**	**3.2000e-004**	**0.0186**	**4.8600e-003**	**3.0000e-004**	**5.1600e-003**						**18.4715**

3.3 Grading - 2018

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					3.7372	0.0000	3.7372	2.0302	0.0000	2.0302						0.0000
Off-Road	0.4396	4.6778	3.2211	3.9900e-003		0.2217	0.2217		0.2039	0.2039						366.9883
Total	**0.4396**	**4.6778**	**3.2211**	**3.9900e-003**	**3.7372**	**0.2217**	**3.9589**	**2.0302**	**0.2039**	**2.2341**						**366.9883**

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
Vendor	1.0600e-003	0.0111	0.0145	3.0000e-005	1.5800e-003	1.7000e-004	1.7500e-003	4.2000e-004	1.6000e-004	5.8000e-004						2.8507
Worker	4.6100e-003	8.1200e-003	0.0836	2.2000e-004	0.0324	1.5000e-004	0.0325	8.2900e-003	1.4000e-004	8.4300e-003						15.6208
Total	**5.6700e-003**	**0.0192**	**0.0981**	**2.5000e-004**	**0.0339**	**3.2000e-004**	**0.0343**	**8.7100e-003**	**3.0000e-004**	**9.0100e-003**						**18.4715**

3.3 Grading - 2019

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					4.7913	0.0000	4.7913	2.6028	0.0000	2.6028						0.0000
Off-Road	0.4147	4.3387	3.0868	3.9900e-003		0.2050	0.2050		0.1886	0.1886						361.1344
Total	**0.4147**	**4.3387**	**3.0868**	**3.9900e-003**	**4.7913**	**0.2050**	**4.9963**	**2.6028**	**0.1886**	**2.7914**						**361.1344**

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
Vendor	1.0000e-003	0.0102	0.0140	3.0000e-005	9.2000e-004	1.6000e-004	1.0800e-003	2.6000e-004	1.5000e-004	4.1000e-004						2.7921
Worker	4.2000e-003	7.4400e-003	0.0766	2.2000e-004	0.0173	1.5000e-004	0.0175	4.6000e-003	1.4000e-004	4.7400e-003						15.0073
Total	**5.2000e-003**	**0.0177**	**0.0906**	**2.5000e-004**	**0.0183**	**3.1000e-004**	**0.0186**	**4.8600e-003**	**2.9000e-004**	**5.1500e-003**						**17.7994**

3.3 Grading - 2019

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					3.7372	0.0000	3.7372	2.0302	0.0000	2.0302						0.0000
Off-Road	0.4147	4.3387	3.0868	3.9900e-003		0.2050	0.2050		0.1886	0.1886						361.1339
Total	**0.4147**	**4.3387**	**3.0868**	**3.9900e-003**	**3.7372**	**0.2050**	**3.9422**	**2.0302**	**0.1886**	**2.2188**						**361.1339**

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
Vendor	1.0000e-003	0.0102	0.0140	3.0000e-005	1.5800e-003	1.6000e-004	1.7500e-003	4.2000e-004	1.5000e-004	5.7000e-004						2.7921
Worker	4.2000e-003	7.4400e-003	0.0766	2.2000e-004	0.0324	1.5000e-004	0.0325	8.2900e-003	1.4000e-004	8.4300e-003						15.0073
Total	**5.2000e-003**	**0.0177**	**0.0906**	**2.5000e-004**	**0.0339**	**3.1000e-004**	**0.0343**	**8.7100e-003**	**2.9000e-004**	**9.0000e-003**						**17.7994**

3.3 Grading - 2020

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					4.7913	0.0000	4.7913	2.6028	0.0000	2.6028						0.0000
Off-Road	0.3888	3.9824	2.9244	4.0100e-003		0.1880	0.1880		0.1730	0.1730						354.6078
Total	**0.3888**	**3.9824**	**2.9244**	**4.0100e-003**	**4.7913**	**0.1880**	**4.9793**	**2.6028**	**0.1730**	**2.7757**						**354.6078**

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
Vendor	9.6000e-004	8.9600e-003	0.0137	3.0000e-005	9.2000e-004	1.5000e-004	1.0700e-003	2.6000e-004	1.4000e-004	4.0000e-004						2.7403
Worker	3.9400e-003	6.9300e-003	0.0716	2.2000e-004	0.0174	1.5000e-004	0.0175	4.6200e-003	1.4000e-004	4.7600e-003						14.4591
Total	**4.9000e-003**	**0.0159**	**0.0852**	**2.5000e-004**	**0.0183**	**3.0000e-004**	**0.0186**	**4.8800e-003**	**2.8000e-004**	**5.1600e-003**						**17.1994**

3.3 Grading - 2020

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					3.7372	0.0000	3.7372	2.0302	0.0000	2.0302						0.0000
Off-Road	0.3888	3.9824	2.9244	4.0100e-003		0.1880	0.1880		0.1730	0.1730						354.6073
Total	**0.3888**	**3.9824**	**2.9244**	**4.0100e-003**	**3.7372**	**0.1880**	**3.9252**	**2.0302**	**0.1730**	**2.2031**						**354.6073**

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
Vendor	9.6000e-004	8.9600e-003	0.0137	3.0000e-005	1.5900e-003	1.5000e-004	1.7400e-003	4.3000e-004	1.4000e-004	5.6000e-004						2.7403
Worker	3.9400e-003	6.9300e-003	0.0716	2.2000e-004	0.0325	1.5000e-004	0.0326	8.3200e-003	1.4000e-004	8.4600e-003						14.4591
Total	**4.9000e-003**	**0.0159**	**0.0852**	**2.5000e-004**	**0.0341**	**3.0000e-004**	**0.0344**	**8.7500e-003**	**2.8000e-004**	**9.0200e-003**						**17.1994**

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	1.7415	5.0257	20.2394	0.0644	7.8938	0.0872	7.9810	2.0332	0.0804	2.1136						4,489.9462
Unmitigated	1.7415	5.0257	20.2394	0.0644	7.8938	0.0872	7.9810	2.0332	0.0804	2.1136						4,489.9462

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2,640.00	5,280.00	5280.00	11,240,044	11,240,044
Total	2,640.00	5,280.00	5,280.00	11,240,044	11,240,044

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
City Park	18.50	10.10	7.90	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527271	0.057774	0.179409	0.125521	0.039563	0.006393	0.017164	0.035220	0.002536	0.003167	0.003715	0.000530	0.001736

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000						0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000

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					
City Park	0	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**

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					
City Park	0	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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0				0.0000
Total					**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0				0.0000
Total					**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	23.8312	2.0000e-005	1.6900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005						3.4600e-003
Unmitigated	23.8312	2.0000e-005	1.6900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005						3.4600e-003

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	3.0537					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	20.7773					0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	1.6000e-004	2.0000e-005	1.6900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005						3.4600e-003
Total	**23.8312**	**2.0000e-005**	**1.6900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**						**3.4600e-003**

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	3.0537					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	20.7773					0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	1.6000e-004	2.0000e-005	1.6900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005						3.4600e-003
Total	**23.8312**	**2.0000e-005**	**1.6900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**						**3.4600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				1,840.6125
Unmitigated				920.3062

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 288.338				920.3062
Total					**920.3062**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 288.338				1,840.6125
Total					**1,840.6125**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				9.4668
Unmitigated				9.4668

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	20.81				9.4668
Total					**9.4668**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	20.81				9.4668
Total					**9.4668**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Tractors/Loaders/Backhoes	1	8.00	260	97	0.37	Diesel

UnMitigated/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
Equipment Type	tons/yr										MT/yr					
Tractors/Loaders/Backhoes	0.0244	0.2465	0.2938	4.0000e-004		0.0145	0.0145		0.0134	0.0134						35.7274
Total	**0.0244**	**0.2465**	**0.2938**	**4.0000e-004**		**0.0145**	**0.0145**		**0.0134**	**0.0134**						**35.7274**

10.0 Vegetation

Castaic Trails Plan

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	132.00	Acre	132.00	5,749,920.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 132 acres of disturbance

Construction Phase - Projects would be completed incrementally by subdivision agreement, but modeling represents total project impact assuming full build out of 100 miles of trails in 4 years. It assumes one year of site preparation and 3 years of grading.

Off-road Equipment - Grading assumptions: 2 Graders for 4 hrs/day, 4 dozers for 4 hrs/day, 1 off highway truck for 4 hrs/day

Off-road Equipment - Site prep assumptions: 2 backhoes for 4 hrs/day, 1 off highway truck for 4 hrs/day

Trips and VMT - Reduced worker trips/day to 1.25* #Equipment as per AQMD's Appendix A: Calculation Details for CalEEMod. 1 vendor trip is used for the water truck. Assume no hauling.

Grading - 132 acres disturbed

Vehicle Trips - 4.9 trips/mi/hr assumed to derived empirical trip rate, as taken from Santa Susana Trails Plan. 4.9 trips/mi/hr * 12 hours * 90.8 mi trails= 5339 trips for 132 acres. Assume ~40 trips/acre/day on Saturday and Sunday and ~20 trip/acre/day during the week.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Road Dust -

Consumer Products - assume no area emissions

Area Coating - assume no area emissions

Landscape Equipment -

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Water construction areas 3x/day. Reduce vehicle speed on unpaved roads to 15 mph.

Mobile Land Use Mitigation -

Operational Off-Road Equipment - Assume 1 tractor/loader/backhoe for 8 hr/day, 260 days a year for maintenance.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	5270750	0
tblAreaCoating	Area_Nonresidential_Interior	15812250	0
tblConstructionPhase	NumDays	465.00	784.00
tblConstructionPhase	NumDays	180.00	260.00
tblConstructionPhase	PhaseEndDate	12/29/2017	12/31/2017
tblGrading	AcresOfGrading	392.00	132.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2021
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	8.00	4.00
tblTripsAndVMT	WorkerTripNumber	18.00	9.00
tblVehicleTrips	ST_TR	1.59	40.00
tblVehicleTrips	SU_TR	1.59	40.00
tblVehicleTrips	WD_TR	1.59	20.00

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					
2017	0.7790	8.0764	5.1663	0.0107	0.6058	0.4134	1.0191	0.0761	0.3803	0.4564						1,084.8140
2018	3.4127	35.9811	25.4541	0.0326	12.3653	1.7010	14.0663	6.6777	1.5649	8.2426						3,261.6553
2019	3.2181	33.3717	24.3661	0.0326	12.3653	1.5734	13.9387	6.6777	1.4475	8.1252						3,206.3112
2020	3.0057	30.5117	22.9910	0.0326	12.3653	1.4373	13.8026	6.6777	1.3223	8.0000						3,133.9131
Total	**10.4155**	**107.9409**	**77.9776**	**0.1084**	**37.7018**	**5.1250**	**42.8268**	**20.1092**	**4.7150**	**24.8242**						**10,686.6937**

2.1 Overall Construction (Maximum Daily Emission)

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					
2017	0.7790	8.0764	5.1663	0.0107	0.5449	0.4134	0.9583	0.0775	0.3803	0.4578						1,084.8140
2018	3.4127	35.9811	25.4541	0.0326	9.7994	1.7010	11.5003	5.2471	1.5649	6.8120						3,261.6553
2019	3.2181	33.3717	24.3661	0.0326	9.7994	1.5734	11.3727	5.2471	1.4475	6.6947						3,206.3112
2020	3.0057	30.5117	22.9910	0.0326	9.7994	1.4373	11.2367	5.2472	1.3223	6.5695						3,133.9131
Total	**10.4155**	**107.9409**	**77.9776**	**0.1084**	**29.9430**	**5.1250**	**35.0680**	**15.8189**	**4.7150**	**20.5339**						**10,686.6937**

	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**	**20.58**	**0.00**	**18.12**	**21.33**	**0.00**	**17.28**	**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	1.2600e-003	1.2000e-004	0.0135	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005						0.0305
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Mobile	15.0015	40.0085	171.7478	0.5696	68.9041	0.7452	69.6493	17.7301	0.6874	18.4175						43,689.8721
Offroad	0.1873	1.8958	2.2602	3.1100e-003		0.1118	0.1118		0.1028	0.1028						302.9437
Total	**15.1900**	**41.9044**	**174.0216**	**0.5727**	**68.9041**	**0.8570**	**69.7611**	**17.7301**	**0.7903**	**18.5204**						**43,992.8464**

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	lb/day										lb/day					
Area	1.2600e-003	1.2000e-004	0.0135	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005						0.0305
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Mobile	15.0015	40.0085	171.7478	0.5696	68.9041	0.7452	69.6493	17.7301	0.6874	18.4175						43,689.8721
Offroad	0.1873	1.8958	2.2602	3.1100e-003		0.1118	0.1118		0.1028	0.1028						302.9437
Total	**15.1900**	**41.9044**	**174.0216**	**0.5727**	**68.9041**	**0.8570**	**69.7611**	**17.7301**	**0.7903**	**18.5204**						**43,992.8464**

	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	**1.23**	**4.52**	**1.30**	**0.54**	**0.00**	**13.04**	**0.16**	**0.00**	**13.01**	**0.56**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.69**

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	1/1/2017	12/31/2017	5	260	
2	Grading	Grading	1/1/2018	12/31/2020	5	784	

Acres of Grading (Site Preparation Phase): 132

Acres of Grading (Grading Phase): 132

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; 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	Off-Highway Trucks	1	4.00	400	0.38
Site Preparation	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Grading	Graders	2	4.00	174	0.41
Grading	Off-Highway Trucks	1	4.00	400	0.38
Grading	Rubber Tired Dozers	4	4.00	255	0.40

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	3	4.00	1.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	9.00	1.00	0.00	19.80	7.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2017

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					0.5384	0.0000	0.5384	0.0581	0.0000	0.0581						0.0000
Off-Road	0.7528	7.9610	4.7365	9.6800e-003		0.4115	0.4115		0.3785	0.3785						996.7687
Total	**0.7528**	**7.9610**	**4.7365**	**9.6800e-003**	**0.5384**	**0.4115**	**0.9499**	**0.0581**	**0.3785**	**0.4367**						**996.7687**

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
Vendor	8.1400e-003	0.0886	0.0987	2.5000e-004	7.1400e-003	1.3900e-003	8.5300e-003	2.0300e-003	1.2800e-003	3.3100e-003						24.5596
Worker	0.0181	0.0267	0.3311	7.8000e-004	0.0602	5.3000e-004	0.0607	0.0160	4.9000e-004	0.0165						63.4857
Total	**0.0262**	**0.1153**	**0.4298**	**1.0300e-003**	**0.0674**	**1.9200e-003**	**0.0693**	**0.0180**	**1.7700e-003**	**0.0198**						**88.0453**

3.2 Site Preparation - 2017

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					0.4200	0.0000	0.4200	0.0454	0.0000	0.0454						0.0000
Off-Road	0.7528	7.9610	4.7365	9.6800e-003		0.4115	0.4115		0.3785	0.3785						996.7687
Total	**0.7528**	**7.9610**	**4.7365**	**9.6800e-003**	**0.4200**	**0.4115**	**0.8314**	**0.0454**	**0.3785**	**0.4239**						**996.7687**

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
Vendor	8.1400e-003	0.0886	0.0987	2.5000e-004	0.0124	1.3900e-003	0.0138	3.3100e-003	1.2800e-003	4.5900e-003						24.5596
Worker	0.0181	0.0267	0.3311	7.8000e-004	0.1126	5.3000e-004	0.1131	0.0288	4.9000e-004	0.0293						63.4857
Total	**0.0262**	**0.1153**	**0.4298**	**1.0300e-003**	**0.1249**	**1.9200e-003**	**0.1269**	**0.0321**	**1.7700e-003**	**0.0339**						**88.0453**

3.3 Grading - 2018

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					12.2227	0.0000	12.2227	6.6397	0.0000	6.6397						0.0000
Off-Road	3.3687	35.8452	24.6830	0.0306		1.6985	1.6985		1.5626	1.5626						3,099.8913
Total	**3.3687**	**35.8452**	**24.6830**	**0.0306**	**12.2227**	**1.6985**	**13.9212**	**6.6397**	**1.5626**	**8.2023**						**3,099.8913**

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
Vendor	7.6800e-003	0.0814	0.0943	2.5000e-004	7.1400e-003	1.3100e-003	8.4500e-003	2.0300e-003	1.2000e-003	3.2300e-003						24.1540
Worker	0.0363	0.0546	0.6769	1.7500e-003	0.1355	1.1600e-003	0.1366	0.0359	1.0800e-003	0.0370						137.6100
Total	**0.0440**	**0.1359**	**0.7712**	**2.0000e-003**	**0.1426**	**2.4700e-003**	**0.1451**	**0.0380**	**2.2800e-003**	**0.0402**						**161.7640**

3.3 Grading - 2018

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					9.5337	0.0000	9.5337	5.1790	0.0000	5.1790						0.0000
Off-Road	3.3687	35.8452	24.6830	0.0306		1.6985	1.6985		1.5626	1.5626						3,099.8913
Total	**3.3687**	**35.8452**	**24.6830**	**0.0306**	**9.5337**	**1.6985**	**11.2322**	**5.1790**	**1.5626**	**6.7416**						**3,099.8913**

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
Vendor	7.6800e-003	0.0814	0.0943	2.5000e-004	0.0124	1.3100e-003	0.0137	3.3100e-003	1.2000e-003	4.5200e-003						24.1540
Worker	0.0363	0.0546	0.6769	1.7500e-003	0.2533	1.1600e-003	0.2544	0.0648	1.0800e-003	0.0659						137.6100
Total	**0.0440**	**0.1359**	**0.7712**	**2.0000e-003**	**0.2656**	**2.4700e-003**	**0.2681**	**0.0682**	**2.2800e-003**	**0.0704**						**161.7640**

3.3 Grading - 2019

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					12.2227	0.0000	12.2227	6.6397	0.0000	6.6397						0.0000
Off-Road	3.1776	33.2467	23.6537	0.0306		1.5710	1.5710		1.4453	1.4453						3,050.4406
Total	**3.1776**	**33.2467**	**23.6537**	**0.0306**	**12.2227**	**1.5710**	**13.7937**	**6.6397**	**1.4453**	**8.0851**						**3,050.4406**

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
Vendor	7.2900e-003	0.0750	0.0908	2.5000e-004	7.1400e-003	1.2400e-003	8.3900e-003	2.0300e-003	1.1400e-003	3.1800e-003						23.6577
Worker	0.0332	0.0500	0.6217	1.7500e-003	0.1355	1.1300e-003	0.1366	0.0359	1.0500e-003	0.0370						132.2129
Total	**0.0405**	**0.1250**	**0.7125**	**2.0000e-003**	**0.1426**	**2.3700e-003**	**0.1450**	**0.0380**	**2.1900e-003**	**0.0402**						**155.8706**

3.3 Grading - 2019

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					9.5337	0.0000	9.5337	5.1790	0.0000	5.1790						0.0000
Off-Road	3.1776	33.2467	23.6537	0.0306		1.5710	1.5710		1.4453	1.4453						3,050.4406
Total	**3.1776**	**33.2467**	**23.6537**	**0.0306**	**9.5337**	**1.5710**	**11.1047**	**5.1790**	**1.4453**	**6.6243**						**3,050.4406**

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
Vendor	7.2900e-003	0.0750	0.0908	2.5000e-004	0.0124	1.2400e-003	0.0136	3.3100e-003	1.1400e-003	4.4600e-003						23.6577
Worker	0.0332	0.0500	0.6217	1.7500e-003	0.2533	1.1300e-003	0.2544	0.0648	1.0500e-003	0.0659						132.2129
Total	**0.0405**	**0.1250**	**0.7125**	**2.0000e-003**	**0.2656**	**2.3700e-003**	**0.2680**	**0.0682**	**2.1900e-003**	**0.0704**						**155.8706**

3.3 Grading - 2020

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					12.2227	0.0000	12.2227	6.6397	0.0000	6.6397						0.0000
Off-Road	2.9676	30.3998	22.3234	0.0306		1.4351	1.4351		1.3202	1.3202						2,983.8789
Total	**2.9676**	**30.3998**	**22.3234**	**0.0306**	**12.2227**	**1.4351**	**13.6578**	**6.6397**	**1.3202**	**7.9600**						**2,983.8789**

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
Vendor	6.9800e-003	0.0655	0.0880	2.5000e-004	7.1400e-003	1.1400e-003	8.2800e-003	2.0300e-003	1.0500e-003	3.0800e-003						23.1305
Worker	0.0311	0.0464	0.5796	1.7500e-003	0.1355	1.1200e-003	0.1366	0.0359	1.0400e-003	0.0370						126.9037
Total	**0.0380**	**0.1119**	**0.6676**	**2.0000e-003**	**0.1426**	**2.2600e-003**	**0.1449**	**0.0380**	**2.0900e-003**	**0.0400**						**150.0342**

3.3 Grading - 2020

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					9.5337	0.0000	9.5337	5.1790	0.0000	5.1790						0.0000
Off-Road	2.9676	30.3998	22.3234	0.0306		1.4351	1.4351		1.3202	1.3202						2,983.8789
Total	**2.9676**	**30.3998**	**22.3234**	**0.0306**	**9.5337**	**1.4351**	**10.9688**	**5.1790**	**1.3202**	**6.4992**						**2,983.8789**

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
Vendor	6.9800e-003	0.0655	0.0880	2.5000e-004	0.0124	1.1400e-003	0.0135	3.3100e-003	1.0500e-003	4.3600e-003						23.1305
Worker	0.0311	0.0464	0.5796	1.7500e-003	0.2533	1.1200e-003	0.2544	0.0648	1.0400e-003	0.0659						126.9037
Total	**0.0380**	**0.1119**	**0.6676**	**2.0000e-003**	**0.2656**	**2.2600e-003**	**0.2679**	**0.0682**	**2.0900e-003**	**0.0702**						**150.0342**

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	15.0015	40.0085	171.7478	0.5696	68.9041	0.7452	69.6493	17.7301	0.6874	18.4175						43,689.8721
Unmitigated	15.0015	40.0085	171.7478	0.5696	68.9041	0.7452	69.6493	17.7301	0.6874	18.4175						43,689.8721

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2,640.00	5,280.00	5280.00	11,240,044	11,240,044
Total	2,640.00	5,280.00	5,280.00	11,240,044	11,240,044

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
City Park	18.50	10.10	7.90	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527271	0.057774	0.179409	0.125521	0.039563	0.006393	0.017164	0.035220	0.002536	0.003167	0.003715	0.000530	0.001736

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000

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					
City Park	0	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**

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					
City Park	0	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**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	1.2600e-003	1.2000e-004	0.0135	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005						0.0305
Unmitigated	1.2600e-003	1.2000e-004	0.0135	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005						0.0305

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	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	1.2600e-003	1.2000e-004	0.0135	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005						0.0305
Total	**1.2600e-003**	**1.2000e-004**	**0.0135**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**						**0.0305**

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					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	1.2600e-003	1.2000e-004	0.0135	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005						0.0305
Total	**1.2600e-003**	**1.2000e-004**	**0.0135**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**						**0.0305**

7.0 Water Detail

7.1 Mitigation Measures Water

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
Tractors/Loaders/Backhoes	1	8.00	260	97	0.37	Diesel

UnMitigated/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
Equipment Type	lb/day										lb/day					
Tractors/Loaders/Backhoes	0.1873	1.8958	2.2602	3.1100e-003		0.1118	0.1118		0.1028	0.1028						302.9437
Total	**0.1873**	**1.8958**	**2.2602**	**3.1100e-003**		**0.1118**	**0.1118**		**0.1028**	**0.1028**						**302.9437**

10.0 Vegetation

Appendix C

Biological Resources Assessment

Sapphos environmental inc.

May 13, 2016
Job Number: 1020-085
Castaic Area Multi-Use Trails Plan Project

MEMORANDUM FOR THE RECORD
2.6 1020-085.M05

TO: County of Los Angeles
Department of Parks and Recreation
(Ms. Olga Ruano, Mr. Zachary Likins, and Mr. Frank Moreno)

FROM: Sapphos Environmental, Inc.
(Ms. Lauren Dorough)

SUBJECT: Castaic Area Multi-Use Trails Plan Biological Resources Assessment

FIGURES:

1. Regional Vicinity Map
2. Local Vicinity Map
3. USGS 7.5-Minute Quadrangle Index
4. Listed Plant and Wildlife Species with the Potential to Occur in the Castaic Project Area
5. Critical Habitat Present within the Castaic Project Area
6. Sensitive Wildlife Species with the Potential to Occur in the Castaic Project Area
7. California Natural Diversity Database Rare and Locally Important Plant Species with the Potential to Occur in the Castaic Project Area
8. Riparian and State Sensitive Plant Community Records in the Castaic Project Area
9. Federally Protected Wetlands and Waterways Reported in the Castaic Project Area
10. Existing Significant Ecological Areas Present in the Castaic Project Area
11. Habitat Conservation Plans and Natural Community Conservation Plans Present in the Vicinity of the Castaic Project Area

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EXECUTIVE SUMMARY

This Memorandum for the Record (MFR) documents the results of the programmatic evaluation of the existing conditions associated with the proposed Castaic Area Multi-Use Trails Plan (proposed project) as they pertain to sensitive biological resources in accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines.[1] Presented here are the regulatory framework applicable to the proposed project; a characterization of the existing conditions for biological resources in relation to listed and sensitive species, sensitive plant communities, waters of the United States, migratory corridors and nursery sites, local plans and policies, and Habitat Conservation Plans and Natural Community Conservation Plans; and conclusions, recommendations, and considerations for trail planning as it pertains to biological resources. Based on the results of the programmatic evaluation of biological resources conducted by Sapphos Environmental, Inc., the construction, recreational use, and maintenance activities associated with the proposed project would have the potential to result in impacts to biological resources that would be require the consideration of mitigation measures.

Listed, Sensitive, and Locally Important Species

Listed, sensitive, and locally important plant and wildlife species have the potential to be present throughout the Castaic project area. The construction of trails and supporting facilities may result in impacts to these species either directly or through habitat conversion. Implementation of Mitigation Measure BIO-1 is required to reduce impacts to less than significant.

Riparian and State Sensitive Plant Communities

State sensitive and riparian plant communities have the potential to be present throughout the Castaic project area. The construction of trails and supporting facilities may result in impacts to these plant communities through removal or disturbance. Implementation of Mitigation Measures BIO-1 and BIO-2 are required to reduce impacts to less than significant.

Federally Protected Wetlands and Waterways

Federally and state-protected wetlands and waterways have the potential to be present throughout the Castaic project area. The construction of trails and supporting facilities may result in impacts to these wetlands and waterways through ground disturbing and dredge and fill activities. Implementation of Mitigation Measures BIO-1 and BIO-2 are required to reduce impacts to less than significant.

Migratory Corridors and Nursery Sites

The Castaic project area is located within an area of native wildlife movement and native wildlife nursery sites have the potential to be present throughout the area. The construction of trails and supporting facilities may result in impacts due to the disruption of wildlife movement and disturbance of nursery sites. Implementation of Mitigation Measures BIO-1, BIO-2, and BIO-3 are required to reduce impacts to less than significant.

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

Oak and Native Woodlands

Oak and other native woodlands have the potential to be present throughout the Castaic project area. The construction of trails and supporting facilities may result in impacts to these woodlands through removal or disturbance. Implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4 are required to reduce impacts to less than significant.

General Plans and Policies

The proposed project would result in no impacts to biological resources related to conflicts with any local policies or ordinances protecting biological resources. Therefore no mitigation measures are required.

Habitat Conservation Plans and Natural Community Conservation Plans

There are no HCPs or NCCPs with boundaries that intersect the Castaic project area. Therefore the proposed project would result in no impacts related to conflicts with the provision of adopted state, regional, or local habitat conservation plans, and no mitigation measures are required.

INTRODUCTION

This MFR documents the methods and results of a desktop evaluation of biological resources in support of the proposed project. The purpose of the evaluation was to characterize the biological resources located within areas that may be impacted by the proposed project. The evaluation included a literature and database review to determine rare, threatened, and endangered species, as well as locally important species that have the potential to be present within or adjacent to the Castaic project area, including a review of topographic maps and aerial photographs. The purpose of the evaluation was to determine the potential effects of the proposed project on sensitive biological resources identified by the County of Los Angeles (County) or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS) pursuant to Appendix G of the State CEQA Guidelines.

LOCATION

The Castaic project area encompasses approximately 75 square miles (approximately 48,107 acres) in the Castaic area of the Santa Clarita Valley in the northwestern portion of unincorporated County of Los Angeles (Figure 1, *Regional Vicinity Map*). The Santa Clarita Valley is centrally located between the San Gabriel Mountains to the east, the Sierra Pelona Mountains to the northeast, the Topatopa Mountains to the west, the San Emigdio Mountains and Tehachapi Mountains to the north, and the Santa Susana Mountains and Santa Monica Mountains to the south within the Transverse Ranges, a group of east-west trending mountains paralleling the Pacific Ocean between Santa Barbara and San Diego Counties.[2] The Castaic project area is composed of generally mountainous and valley terrain that abuts the Angeles National Forest to the north, the City of Santa Clarita to the southeast, California State Route 126 (Henry Mayo Drive) to the south, and Ventura County to the west (Figure 2, *Local Vicinity Map*). The Castaic project area, which is located in the Fifth Supervisorial District, includes a portion of the County-managed Castaic Lake State Recreation Area.

[2] U.S. Geological Survey. Accessed 4 January 2016. TopoView. Available at: http://ngmdb.usgs.gov/maps/TopoView/viewer/#11/34.5626/-118.5353

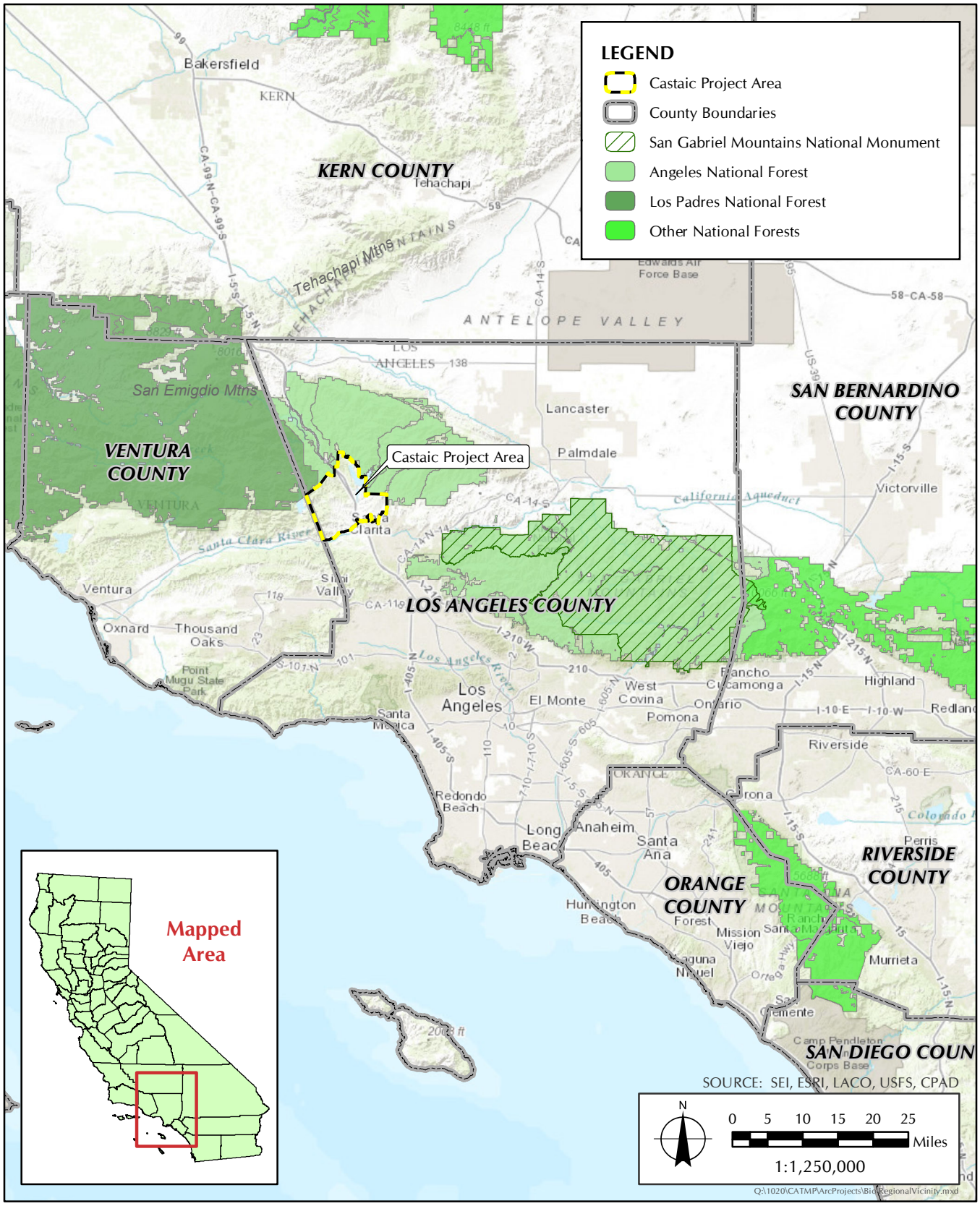

FIGURE 1

Regional Vicinity Map

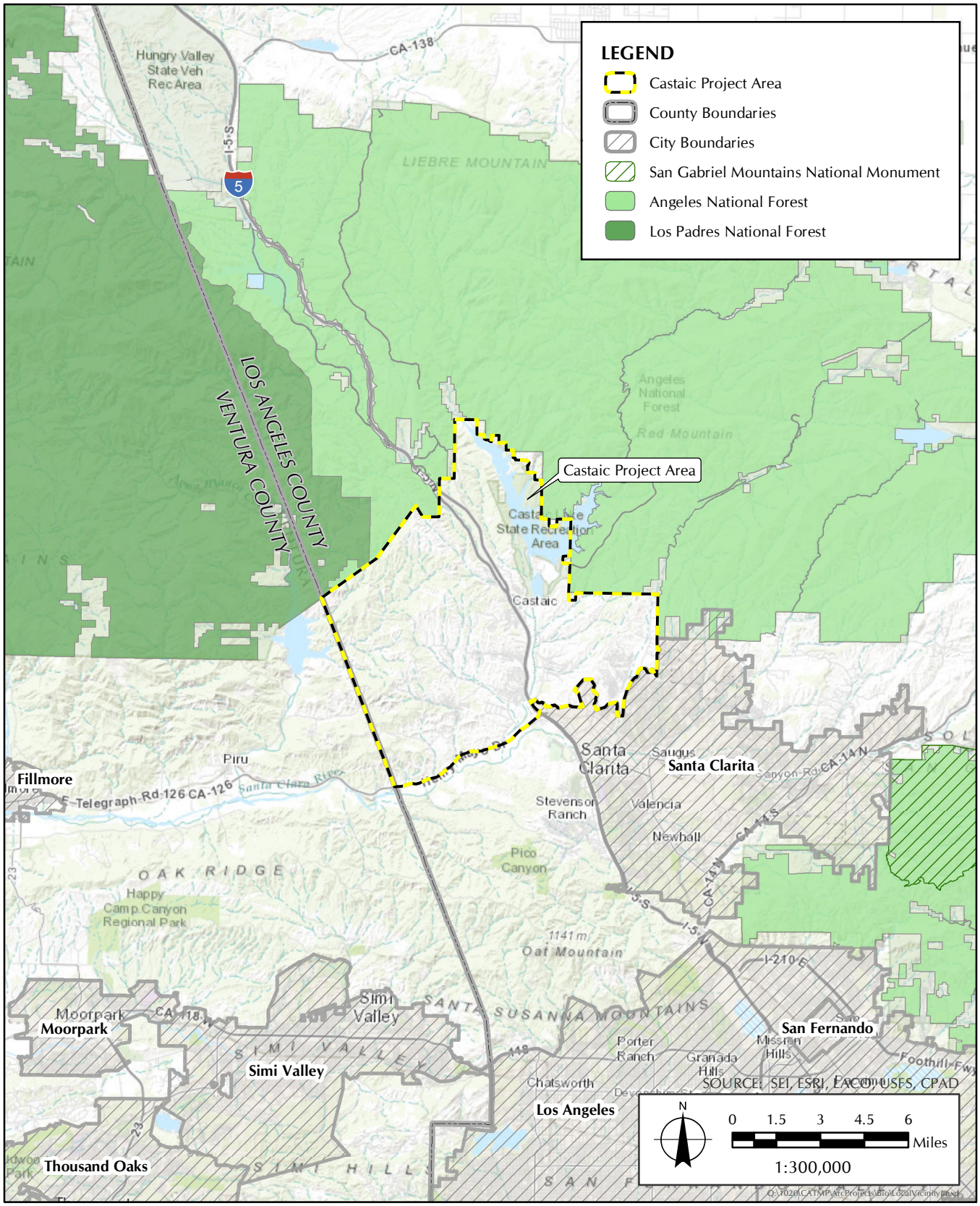

FIGURE 2

Local Vicinity Map

The Castaic project area appears on the U.S. Geological Survey (USGS) 7.5-minute series Whitaker Peak, Warm Springs Mountain, Newhall, and Val Verde topographic quadrangles (Figure 3, *Topographic Map with USGS 7.5-Minute Quadrangle Index*).[3,4,5,6] The elevation of the Castaic project area ranges from 2,756 feet above mean sea level (MSL) near the northern edge of the Castaic project area between Violin Canyon and Palomas Canyon, to 863 feet above MSL near the Santa Clara River at the southwestern corner of the Castaic project area. Loma Linda Peak, at an elevation of approximately 2,494 feet above MSL, is located between Santa Felicia Canyon and Romero Canyon, approximately 0.2 mile south of the northern edge of the Val Verde topographic quadrangle.

PROJECT DESCRIPTION

The proposed project would work to encourage and promote new multi-use trails and recommend improvements to existing trails, providing an alignment to incorporate a transition throughout the Castaic project area to additional areas, jurisdictions, and prime destinations within and adjacent to the Castaic project area. The plan would recommend conditions for improvement of unmet local recreation demands in the 5th Supervisorial District. The proposed project would develop a complete multi-use trail system connecting user groups and local populations to desired recreation destinations and experiences, with unified transition to the trails of adjacent jurisdictions, compatibility with adjacent land uses and environmental resources, and incorporate a sustainable design that is consistent with the County Trails Manual.

The proposed project includes approximately 100 miles of proposed multi-use trails and related staging areas, bike skills parks, parking areas, and other supporting trail facilities in the Castaic Area of the Santa Clarita Valley Planning Area. The proposed trails would provide connections to the Angeles National Forest, trails in the City of Santa Clarita, and trails in the Newhall Ranch Specific Plan. The trails would be multi-use and range from 3 to 12 feet wide based on site conditions, with adequate space for combined pedestrian, equestrian, and mountain biking use, in accordance with the County of Los Angeles Trails Manual guidelines (Table 1, *County Trail Types*).

[3] U.S. Geological Survey. 4 January 2016. 7.5-Minute Series, Whitaker Peak, California, Topographic Quadrangle. Reston, VA.

[4] U.S. Geological Survey. 4 January 2016. 7.5-Minute Series, Warm Springs Mountain, California, Topographic Quadrangle. Reston, VA.

[5] U.S. Geological Survey. 4 January 2016. 7.5-Minute Series, Newhall, California, Topographic Quadrangle. Reston, VA.

[6] U.S. Geological Survey. 4 January 2016. 7.5-Minute Series, Val Verde, California, Topographic Quadrangle. Reston, VA.

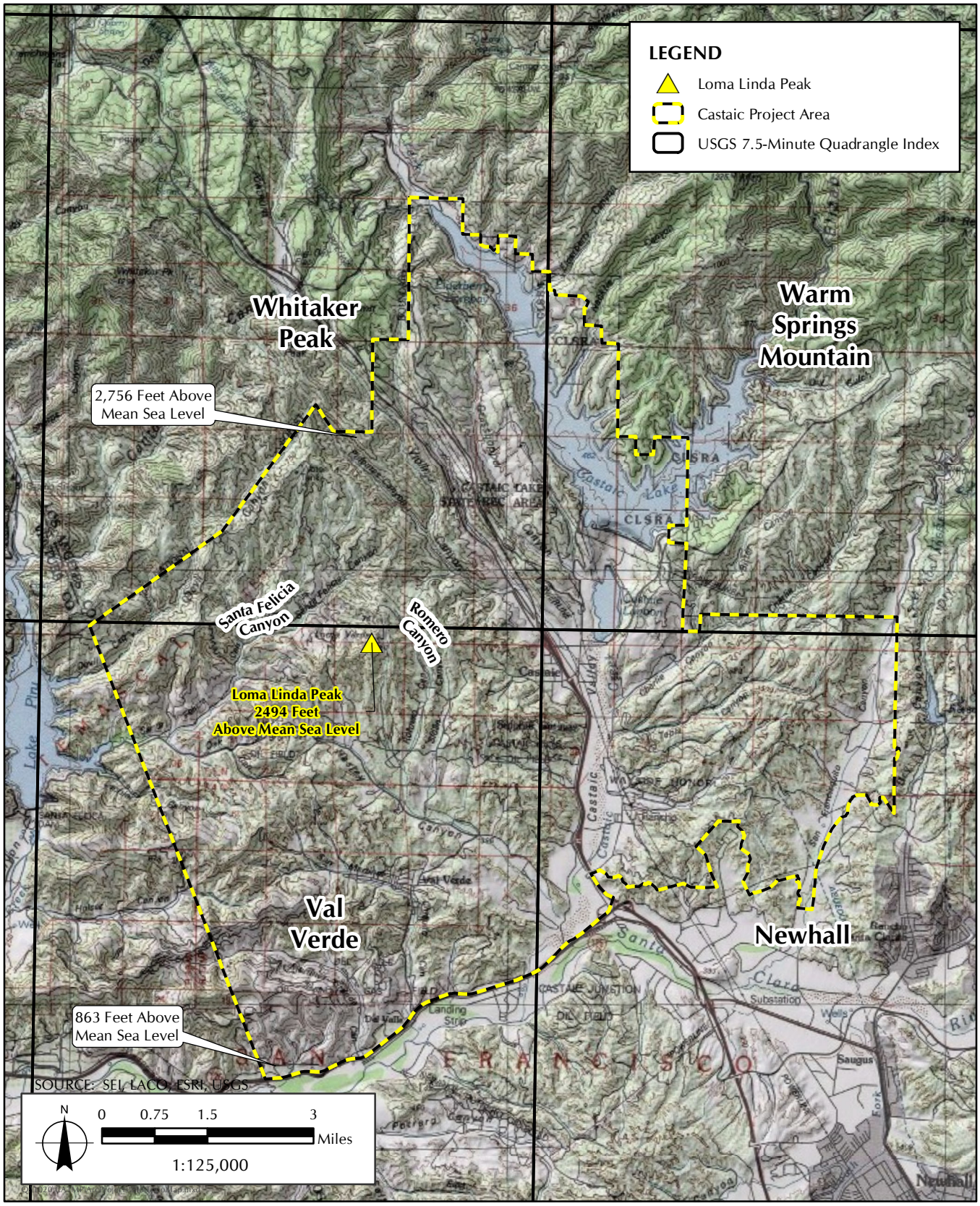

FIGURE 3

Topographic Map with United States Geological Survey 7.5 Minute Quadrangle Index

TABLE 1
COUNTY TRAIL TYPES

Trail Type	Tread / Trail Width	Intensity of Use	Impact	Surface Type
Pedestrian	10–11 feet	High	High	Crusher fines / decomposed granite
Recreational Pathway	8–10 feet	High	High	Natural surface
Natural Trail 1	7–10 feet	High	Medium	Natural surface
Natural Trail 2	5–8 feet	Medium to high	Low	Natural surface
Natural Trail 3	2–3 feet	Low	Minimal	Natural surface

SOURCE: County of Los Angeles Department of Parks and Recreation. Adopted May 17, 2011. Revised June 2013. *County of Los Angeles Trails Manual*. Available at: https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

The proposed project includes 18 trail routes, consisting of four existing trail segments, 10 trail segments that have been planned per developer obligations, and 57 proposed trail segments (Table 2, *Existing, Planned per Developer Obligations, and Proposed Trail Segments*). The proposed trail segments would provide connections to the Santa Felicia SEA, the Angeles National Forest, Newhall Ranch trails and the Santa Clara River Trail, City of Santa Clarita trails, under Interstate-5, and to Castaic Lake.

TABLE 2
EXISTING, PLANNED PER DEVELOPER OBLIGATIONS, AND PROPOSED TRAIL SEGMENTS

Route Name	Trail Segment	Length (Miles)	Trail Type	Existing Conditions of Trail Segment and Trail Design Considerations
Castaic Creek (CC)	CC1 (Sports Complex)	1.24	Natural	No existing trail. Dirt road, de facto trail route along Castaic Creek. De facto trail that does not cross private property. Crossing of drainage at RV park will wash out periodically unless an alternative crossing (bridge) is developed.
	CC2 (Pitchess)	2.63	Natural	No existing trail. Existing dirt road from Tapia Canyon Road along Interstate 5 and creekbed, including under the freeway bridge. Potential for trailhead at southern end of segment.
	CC3 (Commerce Center East)	0.76	SUB	No existing trail. Portion of segment parallels existing dirt road. Planned trail per developer obligations generally follows 2007 County adopted trail routes; alignment reflects subdivision plans.
	CC4 (Commerce Center Undercrossing)	0.25	Natural	No existing trail. Within Castaic creekbed and along paved utility road. Slightly modified from 2007 County adopted trail routes to meet proposed subdivision trail.
	CC5 (Commerce Center Bike Trail)	0.46	SUB	No existing trail. Along paved utility road adjacent to creekbed. Planned trail per developer obligations follows the subdivision plan indicating proposed bike trail with 10' minimum equestrian trail.
	CC6 (Commerce Center – 126)	0.48	SUB	No existing trail. Parallels Franklin Parkway and Castaic Creek. Planned trail per developer obligations follows the subdivision plan indicating proposed sidewalk and equestrian trail.
Castaic Dam (CD)	CD1 (Castaic Upper Parking)	1.39	Natural	No existing trail. Parking lot median, follows existing switchbacks (dirt path) leading to and along existing Pine Ridge Fire Road. Connection from 2007 County adopted trail routes to upper parking lot at Castaic Lake.
	CD2 (Castaic Dam Crossing)*	1.76	Natural	No existing trail. Follows paved road from upper parking lot at Castaic Lake, across Castaic Dam, to Lake Hughes Road. Dam crossing, bridging east and west sides of Castaic Lake. Subject to further coordination with State Department of Water Resources..
	CD3 (Lake Hughes East)	1.60	ROW	No existing trail. Unpaved ROW along Lake Hughes Road. On-street connection from potential lagoon trailhead to parking lot on the east side of the dam.
Cliffie Stone Extension (CE)	CE1 (San Francisquito Wash - Upper)	0.63	Natural	No existing trail. Parallels existing dirt road/path along San Francisquito Canyon wash. Passes from subdivision land into multiple private parcels. Runs adjacent to the street, but may need to enter street ROW.
	CE2 (Tesoro Del Valle – SF Wash)	0.52	Natural	No existing trail. Parallels existing dirt road / de facto route within San Francisquito Canyon wash. Realigned 2007 County adopted trail. Passes through Tesoro Del Valle but is not including in subdivision plans.
	CE3 (San Francisquito Wash - Lower)	0.55	ROW	No existing trail. Parallels existing dirt road / de facto route within San Francisquito Canyon wash. Realigned 2007 County adopted trail
	CE4 (Lady Linda)	0.55	Natural	No existing trail. Follows existing dirt road (Lady Linda Lane). Follows Lady Linda Lane to connect to proposed trailhead.
	CE5 (Cliffie Stone – From Lady Linda-Low Ridge)	0.53	ROW	No existing trail. Follows portions of existing de facto dirt path/road to the west of San Francisquito Canyon Road. Primarily follows Cliffie Stone Extension identified in subdivision alignment.
	CE6 (Cliffie Stone – From Lowridge-Tesoro)	0.26	ROW	No existing trail. Dirt ROW exists along San Francisquito Canyon Road. Crosses road ROW but original ROW does not match existing street.
	CE7 (North Park – Cliffie Stone Extension)	0.62	Natural	No existing trail or de facto route. Follows 2007 County adopted alignment through subdivision until southern end, then branches west to meet Cliffie Stone Trail. Owned by MRCA but part of Tesoro subdivision.
	CE8 (North Park Trail Connector)	0.08	Natural	No existing trail or de facto route. Connection to North Park Trail. Leaves subdivision property and enters Newhall Land parcel.
Charlie Canyon (CL)	CL1 (Charlie Canyon Road)	3.61	Natural	No existing trail. Follows existing dirt roads (Tapia Canyon Road and Charlie Canyon Road), and what appears to be a de facto ridgeline path. Realigned from 2007 County adopted trail routes to follow road on County property.

TABLE 2
EXISTING, PLANNED PER DEVELOPER OBLIGATIONS, AND PROPOSED TRAIL SEGMENTS

Route Name	Trail Segment	Length (Miles)	Trail Type	Existing Conditions of Trail Segment and Trail Design Considerations
	CL2 (Charlie Canyon – Tesoro Del Valle)	0.37	Natural	No existing trail. Follows existing dirt road or de facto path. Trail enters subdivision parcels but is not on subdivision plans.
	CL3 (San Francisquito Connection)	0.16	Natural	No existing trail. Follows existing dirt road or de facto path. Connection to San Francisquito Trail.
Chiquito Canyon (CO)	CO1 (Chiquito Canyon and Creek)	3.52	Natural	No existing trail. Modified 2007 County adopted alignment to follow creek instead of Chiquito Canyon Road.
	CO2 (Jackson St)	0.21	ROW	No existing trail. Parallels two existing paved roads – Lincoln Avenue and Jackson Street. Follows existing street.
	CO3 (Chiquito Canyon and Creek – South)	1.04	Natural	No existing trail. Follows portions of Jackson Street and existing de facto dirt path or road. Requires access beyond locked gate. Realigned from 2007 County adopted alignment to minimize parcel crossings.
	CO4 (Chiquito Canyon and Creek – North)	1.05	SUB	No existing trail. Parallels portion of Del Valley Road. Planned trail per developer obligations - modified 2007 County adopted alignment to remain within subdivision parcels. Subdivision alignment not determined.
Cliffie Stone (CS)	CS1 (Cliffie Stone – San Francisquito Motorway)	0.68	Natural	No existing trail. Follows existing ridgeline Farmer John Lat dirt road and paved utility access road. Tesoro Del Valle Property. Requires access along utility road.
	CS2 (Cliffie Stone Trail [Tesoro])	1.16	Natural	Existing trail
	CS3 (Cliffie Stone Trail [San Francisquito)	1.73	Natural	Existing trail
Elderberry Forebay (EF)	EF1 (Forebay Connection)	4.76	Natural	No existing trail. Follows existing dirt road and topography. May have security issues with dam and pipes at northern edge. Only include if Elderberry Forebay Dam is useable.
	EF2 (Forebay – Limit 2)	0.81	Natural	No existing trail. Parallels portion of Elderberry Forebay road. Dam connection to northeastern corner route. Only include if Elderberry Forebay Dam is useable.
	EF3 (Forebay – Limit 1)	0.72	Natural	No existing trail. Parallels portion of Elderberry Forebay road. Dam connection to northeastern corner route. Only include if Elderberry Forebay Dam is useable.
	EF4 (Northern Limit)	4.76	Natural	No existing trail. Parallels portions of existing roads: Goodell Road and USFS Route 6N13. Northeast connection to USFS roads. Extends beyond Castaic project area.
Hasley Canyon (HC)	HC1 (Hasley – Santa Felicia)	3.48	Natural	No existing trail. Follows existing unpaved Ayala Road for a portion of proposed route. Connects Hasley Canyon to Santa Felicia SEA. Requires passage beyond locked gate at Hasley Canyon.
	HC2 (Hasley – Claremont)	0.70	Natural	No existing trail. Follows existing de facto path or dirt road. Trail falls within subdivision area but is not included in existing subdivision plans. Avoids using street ROW. Connects to 2007 County adopted trail alignment at northern end.
	HC3 (Hasley Canyon End)	0.16	Natural	No existing trail. Realigned 2007 County adopted trail alignment.
	HC4 (Hasley Road West)	0.33	ROW	No existing trail. Parallels existing paved Hasley Canyon Road. Follows 2007 County adopted trail alignment along public ROW. Ends at road.
	HC5 (Hasley Road East)	0.57	ROW	No existing trail. Parallels existing paved Hasley Canyon Road. Realigned 2007 County adopted trail to avoid private parcel conflict, avoid a creek crossing, and to more directly connect to other trail segments.
	HC6 (Hasley Creek)	0.26	Natural	Existing de facto trail along Hasley Canyon Road. Realigned 2007 County adopted trail to follow de facto trails.

TABLE 2
EXISTING, PLANNED PER DEVELOPER OBLIGATIONS, AND PROPOSED TRAIL SEGMENTS

Route Name	Trail Segment	Length (Miles)	Trail Type	Existing Conditions of Trail Segment and Trail Design Considerations
	HC7 (Hasley-Los Valles)	0.56	SUB	No existing trail. Existing de facto trail along Hasley Canyon Road. Planned trail per developer obligations - realigned 2007 County adopted trail to follow de facto trails. Within subdivision area a planned subdivision trail is not indicated.
	HC8 (Hasley Canyon Trail)	1.68	Natural	Existing trail
	HC9 (Commerce Center)	0.21	ROW	No existing trail. Existing paved maintenance road along channelized creek. Line to proposed subdivision trails. Crosses under Commerce Center Drive and uses maintenance road.
	HC10 (Commerce Center NW)	0.61	SUB	No existing trail. Parallels creek bed. Planned trail per developer obligations generally follows 2007 County adopted alignment, but realigned to avoid the creek bed where possible.
Interstate Paintball (IP)	IP1 (Interstate 5 to Ridge Route)	3.30	Natural	No existing trail. Existing utility access dirt roads. Follows utility access roads. Northern end will need switchbacks to drop to Ridge Route Rd.
	IP2 (Paintball Site)	0.65	Natural	No existing trail. Existing dirt roads and paved roads. Connects through former paintball site and proposed bike skills park. Alignment to be determined by park design.
	IP3 (Santa Felicia to 5 Connection)	3.67	Natural	No existing trail. Existing dirt roads along portions of alignment. Connection from former paintball site to Santa Felicia SEA. Undercrossing at Interstate-5 will need to be evaluated for safety.
	IP4 (Between Interstate 5)	3.14	Natural	No existing trail. Existing utility access dirt roads between I-5 North and I-5 south. Picks up from the end of Castaic Road and continues to paintball site.
Lake West (LW)	LW1 (Northlake North)	3.28	Natural	No existing trail. Existing dirt roads. Follows 2007 County adopted trail route.
	LW2 (Northlake Central)	1.10	Natural	No existing trail. Existing dirt roads. Follows 2007 County adopted trail route.
	LW3 (Lagoon-Lake)	4.05	Natural	Existing dirt roads, including a portion of Cutler Canyon Fire Road and Vista Ridge Fire Road, and paved Castaic Lake State Recreation Area road. Includes a portion of Pro's Uphill Open Trail and Castaic Brick Trail of Castaic Lake State Recreation Area.[1] Follows 2007 County adopted trail route.
North Park Trail	North Park Trail	0.33	Natural	Existing trail
Romero Canyon (RC)	RC1 (Romero-Santa Felicia)	1.88	Natural	No existing trail. Follows existing dirt road/path. Portions follow narrow ridgelines.
	RC2 (North of High School)	0.13	Natural	No existing trail. Currently a construction site. Connection to Castaic High School path.
	RC3 (Castaic High School)	0.56	SUB	No existing trail. Currently a construction site leading to Romero Canyon Road. Planned trail per developer obligations – alignment needs verification from development plan.
	RC4 (Romero Canyon Rd)	1.89	Natural	No existing trail. Parallels Romero Canyon Road. Follows private road.
Santa Felicia (SA)	SA1 (Santa Felicia Upper Loop)	7.59	Natural	No existing trail. Existing dirt road. Minimal constraints.
	SA2 (Santa Felicia Lower Loop)	5.80	Natural	No existing trail. Existing dirt road. Portions follow narrow ridgelines.
San Francisquito (SF)	SF1 (San Francisquito Motorway)	0.34	Natural	No existing trail. Existing dirt road: San Francisquito Motorway. Follows San Francisquito Motorway to the edge of the Castaic project area.

TABLE 2
EXISTING, PLANNED PER DEVELOPER OBLIGATIONS, AND PROPOSED TRAIL SEGMENTS

Route Name	Trail Segment	Length (Miles)	Trail Type	Existing Conditions of Trail Segment and Trail Design Considerations
	SF2 (San Francisquito Motorway Bypass)	1.09	Natural	No existing trail. De facto ridgeline dirt road/path. Two parallel alternative routes. Single alignment pending further study. Partially inside Tapia Ranch.
	SF3 (San Francisquito – Tapia)	1.15	Natural	No existing trail. Existing dirt road: San Francisquito Motorway. Passes through Tesoro Del Valle, not included in subdivision plans.
	SF4 (San Francisquito – West Creek)	0.85	Natural	No existing trail. Existing dirt road: San Francisquito Motorway. Follows utility road. Connects San Francisquito and Cliffie Stone Trails to West Creek.
Sloan Canyon (SC)	SC1 (Sloan Canyon West)	1.14	Natural	No existing trail. Existing dirt roads and construction sites. Portions follow narrow ridgelines.
	SC2 (Homestead at Sloan Canyon)	0.68	SUB	No existing trail. Existing construction site and unpaved Sloan Canyon Road. Planned trail per developer obligations follows existing dirt road.
	SC3 (Sloan Canyon Dr)	1.52	ROW	No existing trail. Parallels Sloan Canyon Road and Lake Hughes Road. On-street connection. Crosses under Interstate 5. Requires coordination with Los Angeles County Public Works.
	SC4 (Lake Hughes at Lagoon)	0.19	ROW	No existing trail. Parallels Lake Hughes Road south of Castaic Lagoon. Connects Castaic Creek to Castaic Lake.
Tapia Canyon (TC)	TC1 (Sports Complex – Tapia)	0.24	SUB	No existing trail. Parallels Tapia Canyon Road. Planned trail per developer obligations – Tapia Ranch development plans to build path to Castaic Road.
	TC2 (Tapia Bypass)	2.74	SUB	No existing trail. Parallels Tapia Canyon Road and Wayside Canyon Road in between undeveloped portions of Tapia Canyon. Planned trail per developer obligations – part of Tapia Ranch development plan. Portions follow 2007 County adopted alignment.
	TC3 (Tapia – San Francisquito)	1.11	Natural	No existing trail. Appears to be a de facto trail or dirt path between Tapia Canyon Road and San Francisquito Motorway. Partially within Tapia Ranch development.
	TC4 (Tapia – Cliffie Stone)	1.03	Natural	No existing trail. A portion of alignment route follows an existing dirt road/path. A portion parallels dirt roads/paths: Quail Haven Trail, Las Tunas Trail, and Lady Linda Lane. Trail would need to traverse a significant elevation change over the ridge at northern end.
Val Verde (VV)	VV1 (Kennsington Rd)	2.31	Natural	No existing trail. Follows a few de facto dirt roads/paths. Requires access along private roads at either end of the alignment.
	VV2 (Chiquito – Val Verde)	0.94	Natural	No existing trail. Follows edge of Val Verde Park and drainage. Follows drainage, marked as privately owned for portions but appears to all be LA County Flood Control property.
West Creek (WC)	WC1 (West Creek – Tapia)	1.49	Natural	No existing trail. Parallels two existing dirt roads: Company Road and Wayside Lateral Road. Requires connection through cul-de-dac in West Creek.
	WC2 (West Creek – Tapia – Tesoro)	1.30	Natural	No existing trail. Follows a portion of existing de facto dirt road/paths and a portion of Tapia Canyon Road. Within subdivision property, but alignment not included in subdivision. Connects West Creek development to Tapia Ranch area.
TOTAL				
Total of 18 Routes	**Total of 71 Trail Segments** • 4 Existing Segments • 10 Segments planned per developer obligations • 57 Proposed Trail Segments			**Total Of 102.94 Miles in Trail Planning Castaic project area** • 4.90 Miles Existing Trails • 8.14 Miles Planned trails per developer obligations (no existing trail) • 89.90 Miles Proposed and Under Consideration

NOTES: *Subject to negotiation with California State Department of Water Resources (DWR) - Future negotiations with DWR and pending state and county agreement renewal. SUB = Multi-Use Subdivision Trail. ROW = New Designation
SOURCE: [1] Friends of Castaic Lake. Accessed 12 April 2016. *Castaic Lake – Trail Map*. Available at: http://castaiclake.com/map_trails.html

Consistent with Section 4.3.6, *Way-finding Signs*, of the County Trails Manual, the proposed project would include regular trail signs at trailheads, trail amenity locations, street and trail intersections, and the boundaries of trail easements on private property and National Forest lands.[7] Also consistent with the recommendations of the County Trails Manual, reassurance marker signs would be posted at eye level (62 inches above the ground surface) at every quarter (0.25) mile of trail that visually mark the trail line and identify the name of the trail and quarter milepost number in order to orient trail users and search and rescue services in the case of an emergency. As each trail segment is constructed, the County Department of Parks and Recreation would be responsible for sending the Los Angeles County Fire Department and the Los Angeles County Sheriff's Department the location of each quarter milepost along the trail for emergency response purposes.

The proposed project would involve the development of five simple trailheads at access points, up to three bike skills park amenities, four equestrian amenities, and nine staging areas and trail amenities (Table 3, *Proposed Trail Related Facilities*). The bike skills parks would occupy up to 45 acres.

TABLE 3
PROPOSED TRAIL RELATED FACILITIES

Trail Related Facility Type	Related Facility Name (Size)
Trail Access Only • Trailheads only	Upper Ridge Route Road
	Sloan Canyon
	Castaic Road
	West Creek
	Hasley Canyon Equestrian Center
Bike Skills Park Amenities • Restrooms • Drinking Fountains • Rest Areas/Seating • Shade Structures • Pump Tracks (no pedaling required) • Progressive Jumps (natural soil with compacted dirt jumps) • Balance Skills Features (e.g., wooden teeter-totter) • Rock/Technical Features (e.g., rock garden with narrow width trails) • Flow Trails (start at higher elevation for downhill ride) • Trails (over variety of terrain, for all ages) • Road Handling Skills Areas (hard-packed soil course) • Beginner, Intermediate, and Expert Skills Courses (for all ages) • Advanced Downhill Course (steep terrain, jumps, turns, obstacles) • Slalom Course (two adjacent trails for competition)	Castaic Sports Complex (up to 10 acres) Upper Lagoon (up to 5 acres) Ridge Route Road (up to 30 acres)

[7] County of Los Angeles Department of Parks and Recreation. Revised June 2013. County of Los Angeles Trails Manual. Available at: https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

TABLE 3
PROPOSED TRAIL RELATED FACILITIES

Trail Related Facility Type	Related Facility Name (Size)
Equestrian Amenities • Trailheads • Parking • Restrooms • Drinking Fountains (for humans, equine, or pets) • Picnic Tables • Shade Structures • Horse Arenas • Gathering Areas • Horse Ties and Rails	Tapia Canyon Road
	Castaic Lake Upper Lot
	Tesoro Del Valle
	Castaic Sports Complex
Staging Areas and Trail Amenities • Trailheads • Parking • Restrooms • Drinking Fountains (for humans, equine, or pets) • Benches/Seating • Picnic Tables • Shade Structures • Wayfinding Signage • Interpretive Signage • Gathering Areas • Horse Ties and Rails • Bike Racks	Old Road
	Hasley Canyon
	Chiquito Canyon
	Santa Felicia
	Castaic Lagoon
	Lady Linda
	Ridge Route Road
	Castaic Sports Complex
	Castaic Lake State Recreation Area Upper Lot

Restrooms would be design and required to demonstrate compliance with the standards of the Santa Clarita Valley Sanitation District or the County of Los Angeles Department of Public Health for Onsite Wastewater Treatment Systems (OWTS), as applicable.

Trails and supporting facilities within a one-mile radius of officially designated and eligible State scenic highways would be designed, constructed, and maintained (where construction equipment is involved) to preserve scenic resources, including but not limited to trees, rock outcroppings, and historic buildings, within the scenic highway corridor. Where construction of trails or related supporting facilities requires cuts into the slope (which can be seen from a far distance), the visual character of the slope would be restored by planting locally native vegetation as a visual screen. Similarly, restrooms and other supporting structures would be constructed of materials that blend into the landscape, with locally native vegetative screening.

As stated in the County Trails Manual, the hours for operation for County trails are typically from dawn to dusk (County Code 17.04.330). In accordance with the guidelines in Section 4.3.18, *Lighting*, of the County Trails Manual, where lighting features are provided for safety and wayfinding reasons, lighting would installed in a manner to be non-intrusive to adjacent uses, avoid detracting from a natural outdoors experience for trail users, and directed downward to avoid light pollution or spillover in general.[8]

[8] County of Los Angeles Department of Parks and Recreation. Adopted by the Board of Supervisors on May 17, 2011. Revised June 2013. County of Los Angeles Trails Manual. Available at:

REGULATORY FRAMEWORK

Federal

Federal Endangered Species Act

The federal Endangered Species Act (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 U.S. Fish and Wildlife Service (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. A Habitat Conservation Plan (HCP) must accompany an application for an incidental take permit. The purpose of the HCP planning process associated with the permit is to ensure there is adequate minimizing and mitigating of the effects of the authorized incidental take. 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.

Migratory Bird Treaty Act (MBTA)

The 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). Similar to the federal ESA, the MBTA authorizes the Secretary of the Interior to issue permits for incidental take.

Bald and Golden Eagle Protection Act (BGEPA)

The purpose of the federal *Bald and Golden Eagle Protection Act (BGEPA)* (16 USC 668–668c, as amended) that is administered by the USFWS protects bald and golden eagles, their nests, eggs, and parts.[9] 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)." 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.[10] Under the BGEPA, a final rule was published in May 2008 in the *Federal Register* that proposed

https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

[9] U.S. Fish and Wildlife Service. n.d. Bald Eagle Management Guidelines and Conservation Measures: Bald and Golden Eagle Protection Act. Available at: http://www.fws.gov/midwest/Eagle/guidelines/bgepa.html

[10] U.S. Fish and Wildlife Service. May 2007. National Bald Eagle Management Guidelines. Available at: http://www.fws.gov/pacific/eagle/NationalBaldEagleManagementGuidelines.pdf

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.[11]

Section 404 of the Federal Clean Water Act

Section 404 of the federal Clean Water Act, which is administered by the United States Army Corps of Engineers (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.

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.

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.

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

[11] Federal Register. 20 May 2008. Notices. 73(98): 29075–29084.

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 (DNPA).

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.

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. A Natural Community Conservation Plan (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.

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.

Section 4150—Non-Game Mammal or Furbearing Mammal

All mammals occurring naturally in California that 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.

Local

Los Angeles County General Plan 2035

The Castaic project area is located within the unincorporated County and is subject to the Los Angeles County General Plan 2035. The Conservation and Natural Resources Element of the General Plan 2035 has established 2 goals and 12 policies related to biological resources:[12]

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, and Significant Ecological Areas. Topic Policy

- *Policy C/NR 3.1:* Conserve and enhance the ecological function of diverse natural habitats and biological resources.
- *Policy C/NR 3.2:* Create and administer innovative County programs incentivizing the permanent dedication of SEAs and other important biological resources as open space areas.
- *Policy C/NR 3.3:* Restore upland communities and significant riparian resources, such as degraded streams, rivers, and wetlands to maintain ecological function—acknowledging the importance of incrementally restoring ecosystem values when complete restoration is not feasible.

[12] County of Los Angeles 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-ch9.pdf

- *Policy C/NR 3.4:* Conserve and sustainably manage forests and woodlands.
- *Policy C/NR 3.5:* Ensure compatibility of development in the National Forests in conjunction with the U.S. Forest Service Land and Resource Management Plan.
- *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 3.7:* Participate in inter-jurisdictional collaborative strategies that protect biological resources. Site Sensitive Design
- *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);
    - Design required open spaces to retain contiguous undisturbed open space that preserves the most sensitive biological resources onsite and/or serves to maintain regional 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 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.

Santa Clarita Valley Area Plan

The Castaic project area is located within the Santa Clarita Valley and is subject to the 2012 Santa Clarita Valley Area Plan, a component of the County of Los Angeles General Plan. The Conservation and Open Space Element of the Santa Clarita Valley Area Plan has 7 objectives and 34 policies that cover biological resources:

Objective CO-3.1: **In review of development plans and projects, encourage conservation of existing natural areas and restoration of damaged natural vegetation to provide for habitat and biodiversity.**

- *Policy CO-3.1.1:* On the Land Use Map and through the development review process, concentrate development into previously developed or urban areas to promote infill development and prevent sprawl and habitat loss, to the extent feasible.
- *Policy CO-3.1.2:* Avoid designating or approving new development that will adversely impact wetlands, floodplains, threatened or endangered species and habitat, and water bodies supporting fish or recreational uses, and establish an adequate buffer area as deemed appropriate through site specific review.
- *Policy CO-3.1.3:* On previously undeveloped sites ("greenfields"), identify biological resources and incorporate habitat preservation measures into the site plan, where appropriate.
- *Policy CO-3.1.4:* For new development on sites with degraded habitat, include habitat restoration measures as part of the project development plan, where appropriate.
- *Policy CO-3.1.5:* Promote the use of site-appropriate native or adapted plant materials, and prohibit use of invasive or noxious plant species in landscape designs.
- *Policy CO-3.1.6:* On development sites, preserve and enhance natural site elements including existing water bodies, soil conditions, ecosystems, trees, vegetation and habitat, to the extent feasible.
- *Policy CO-3.1.7:* Limit the use of turf-grass on development sites and promote the use of native or adapted plantings to promote biodiversity and natural habitat.
- *Policy CO-3.1.8:* On development sites, require tree planting to provide habitat and shade to reduce the heat island effect caused by pavement and buildings.
- *Policy CO-3.1.9:* During construction, ensure preservation of habitat and trees designated to be protected through use of fencing and other means as appropriate, so as to prevent damage by grading, soil compaction, pollution, erosion or other adverse construction impacts.
- *Policy CO-3.1.10:* To the extent feasible, encourage the use of open space to promote biodiversity.
- *Policy CO-3.1.11:* Promote use of pervious materials or porous concrete on sidewalks to allow for planted area infiltration, allow oxygen to reach tree roots (preventing sidewalk lift-up from roots seeking oxygen), and mitigate tree sidewalk conflicts, in order to maintain a healthy mature urban forest.

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.
- *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.

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-3.3.2:* Cooperate with other responsible agencies to protect, enhance, and extend the Rim of the Valley trail system through Elsmere and Whitney Canyons, and other areas as appropriate, to provide both recreational trails and wildlife corridors linking the Santa Susana and San Gabriel Mountains.
- *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).
- *Policy CO-3.3.4:* Support the maintenance of Santa Clarita Woodlands Park, a critical component of a cross-mountain range wildlife habitat corridor linking the Santa Monica Mountains to the Angeles and Los Padres National Forests.
- *Policy CO-3.3.5:* Encourage connection of natural open space areas in site design, to allow for wildlife movement.

Objective CO-3.4: **Ensure that development in the Santa Clarita Valley does not adversely impact habitat within the adjacent National Forest lands.**

- *Policy CO-3.4.1:* Coordinate with the United States Forest Service on discretionary development projects that may have impacts on the National Forest.
- *Policy CO-3.4.2:* Consider principles of forest management in land use decisions for projects adjacent to the National Forest, including limiting the use of invasive species, discouraging off-road vehicle use, maintaining fuel modification zones and fire access roads, and other measures as appropriate, in accordance with the goals set forth in the Angeles National Forest Land Management Plan.
- *Policy CO-3.4.3:* On the Land Use Map, maintain low density rural residential and open space uses adjacent to forest land, and protect the urban-forest interface area from overdevelopment.
- *Policy CO-3.4.4:* Participate as a stakeholder in planning efforts by the United States Forest Service for land uses within the National Forest, providing input as appropriate.

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-3.5.1:* Continue to plant and maintain trees on public lands and within the public right-of-way to provide shade and walkable streets, incorporating measures to ensure that roots have access to oxygen at tree maturity, such as use of porous concrete.
- *Policy CO-3.5.2:* Where appropriate, promote planting of trees that are native or climactically appropriate to the surrounding environment, emphasizing oaks, sycamores, maple, walnut, and other native species in order to enhance habitat, and discouraging the use of introduced species such as eucalyptus, pepper trees, and palms except as ornamental landscape features.
- *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-3.6.1:* 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.
- *Policy CO-3.6.2:* Reduce impervious surfaces and provide more natural vegetation to enhance microclimates and provide habitat. In implementing this policy, consider the following design concepts:
  - Consideration of reduced parking requirements, where supported by a parking study and/or through shared use of parking areas;
  - Increased use of vegetated areas around parking lot perimeters; such areas should be designed as bioswales or as otherwise determined appropriate to allow surface water infiltration;
  - Use of connected open space areas as drainage infiltration areas in lieu of curbed landscape islands, minimizing the separation of natural and landscaped areas into isolated "islands"; and
  - Breaking up large expanses of paving with natural landscaped areas planted with shade trees to reduce the heat island effect, along with shrubs and groundcover to provide diverse vegetation for habitat.
- *Policy CO-3.6.3:* Restrict use of unauthorized off -road vehicles within sensitive habitat areas through signage, fencing, or other means as appropriate.
- *Policy CO-3.6.4:* Provide public information and support with demonstration sites at County facilities on gardening and landscaping techniques to reduce spread of invasive species and pollution from pesticides and fertilizers that threaten natural ecosystems.
- *Policy CO-3.6.5:* Ensure revegetation of graded areas and slopes adjacent to natural open space areas with native plants (consistent with fi re prevention requirements).

Objective CO-3.7: **Provide public access to, and education about, natural habitats and ecosystems.**

- *Policy CO-3.7.1:* Support the public education programs offered at the Placerita Canyon Nature Center and Ed Davis Park (Sonia Thompson Nature Center).
- *Policy CO-3.7.2:* Seek opportunities for partnerships with schools, non-profit organizations, and volunteers, to increase public access to and information about natural areas.

Newhall Ranch Specific Plan

A portion of the Castaic project area is located within the Newhall Ranch area and is subject to the Newhall Ranch Specific Plan. There are five Resource Conservation Objectives within the Newhall Ranch Specific Plan that relate to biological resources:

Resource Conservation Objective 1: Protect wetland and endangered species in the Santa Clara River.

Resource Conservation Objective 2: Preserve the Santa Clara River Corridor and adjacent uplands containing significant natural resources for their resource value, *Open Area*, and recreational use.

Resource Conservation Objective 3: Retain major *Open Area* and its natural vegetation as a wildlife or ecological reserve.

Resource Conservation Objective 4: Preserve significant stands of oak trees.

Resource Conservation Objective 6: Identify and protect significant resources within the two Los Angeles County Significant Ecological Areas.

Northlake Specific Plan

A portion of the Castaic project area is located within the Northlake Specific Plan area. However, there are no goals or policies within this specific plan that pertain to biological resources. Therefore, this plan is not applicable to the proposed project.

Los Angeles County Municipal Code Title 12, Chapter 12.36 – Wildflower Reserves

Title 12, Chapter 12.36 of the Los Angeles County Municipal Code states that a person, firm or corporation shall not drive, or allow the same to be driven, on or over any designated Wildflower Reserve Area during any portion of the period from February 1st to April 15th, inclusive, or May 1st to July 15th, inclusive, of any calendar year.

Los Angeles County Municipal Code Title 22, § 22.56.215 – Significant Ecological Areas

Title 22, Section 22.56.215 of the Los Angeles County Municipal Code regulates development within Significant Ecological Areas (SEAs). 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.

Los Angeles County Municipal Code Title 22, § Chapter 22.44, Part 6 – Sensitive Environmental Resource Areas

Sensitive Environmental Resource Areas (SERAs) are located within the Santa Monica Mountains Coastal Zone area only. SERAs contain biological resources that, because of their special characteristics and/or vulnerability, require greater protection, and development in a SERA requires a heightened level of review to ensure that protection. Projects in a SERA are subject to review by the Los Angeles County Department of Regional Planning Environmental Review Board.

Los Angeles County Municipal Code Sections 22.56.2050 – 22.56.2260 – Oak Tree Ordinance

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. 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.

STUDY METHODS

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;[13] 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, Newhall Ranch Specific Plan, and Northlake Specific Plan goals and policies related to biological resources, 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.

Listed, Sensitive, and Locally Important Species

Records of listed and sensitive plants and animals were reviewed to determine what federally and State-listed species and sensitive species have the potential to occur within the limits of the Castaic project area. For the purposes of this analysis, species were assumed to be present if historic records of the species occur within or in the immediate vicinity of the Castaic project area and the area has suitable habitat. 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 California Natural Diversity Database (CNDDB) query was supplemented with information from published and unpublished literature, including program- and project-level environmental

[13] County of Los Angeles 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-ch9.pdf

documents prepared pursuant to CEQA and the National Environmental Policy Act (NEPA) in the vicinity of the Castaic project area. The CNDDB database and the California Native Plant Society (CNPS) Online Inventory[14] query for occurrence data within and surrounding the Castaic project area included 16 USGS 7.5-minute series topographic quadrangles: Black Mountain,[15] Burnt Peak,[16] Cobblestone Mountain,[17] Green Valley,[18] Lake Hughes,[19] Liebre Mountain,[20] Mint Canyon,[21] Newhall,[22] Oat Mountain,[23] Piru,[24] Simi Valley East,[25] Simi Valley West,[26] San Fernando,[27] Val Verde,[28] Warm Springs Mountain,[29] and Whitaker Peak.[30]

Critical habitat data, as determined by the USFWS, was searched to determine the proximity of critical habitat to the Castaic project area.[31] The list of species was evaluated with respect to the habitats present. *The Jepson Manual* was consulted for detailed biological, distributional, and phenological information of plants and used as a standard for nomenclature.[32]

Riparian and State Sensitive Plant Communities

The evaluation of riparian and state-sensitive plant communities for the Castaic project area was undertaken using data from the Natural Heritage Division of CDFW via a query of the CNDDB, which identifies special-status natural communities. The Natural Heritage Division is currently in the process of classifying and mapping vegetation in California. Consequently, these CNDDB records date back only as recently as 1993. It is important to note that there is the potential for additional state-sensitive plant communities and riparian habitat to exist within the Castaic project area. Focused plant community mapping would need to be undertaken to assess the presence or absence and extent of riparian habitat and state-sensitive plant communities.

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[14] California Native Plant Society. 2013. *Inventory of Rare and Endangered Plants*,. Sacramento, CA.

[15] U.S. Geologic Survey. 2013. 7.5-minute Series, Black Mountain, California, Topographic Quadrangle. Reston, VA.

[16] U.S. Geologic Survey. 2012. 7.5-minute Series, Burnt Peak, California, Topographic Quadrangle. Reston, VA.

[17] U.S. Geologic Survey. 2015. 7.5-minute Series, Cobblestone Mountain, California, Topographic Quadrangle. Reston, VA

[18] U.S. Geologic Survey. 2014. 7.5-minute Series, Green Valley, California, Topographic Quadrangle. Reston, VA

[19] U.S. Geologic Survey. 2015. 7.5-minute Series, Lake Hughes, California, Topographic Quadrangle. Reston, VA.

[20] U.S. Geologic Survey. 2012. 7.5-minute Series, Liebre Mountain, California, Topographic Quadrangle. Reston, VA.

[21] U.S. Geologic Survey. 2015. 7.5-minute Series, Mint Canyon, California, Topographic Quadrangle. Reston, VA.

[22] U.S. Geologic Survey. 2015. 7.5-minute Series, Newhall, California, Topographic Quadrangle. Reston, VA.

[23] U.S. Geologic Survey. 2012. 7.5-minute Series, Oat Mountain, California, Topographic Quadrangle. Reston, VA.

[24] U.S. Geologic Survey. 2015. 7.5-minute Series, Piru, California, Topographic Quadrangle. Reston, VA.

[25] U.S. Geologic Survey. 2015. 7.5-minute Series, Simi Valley East, California, Topographic Quadrangle. Reston, VA.

[26] U.S. Geologic Survey. 2015. 7.5-minute Series, Simi Valley West, California, Topographic Quadrangle. Reston, VA.

[27] U.S. Geologic Survey. 2015. 7.5-minute Series, San Fernando, California, Topographic Quadrangle. Reston, VA.

[28] U.S. Geologic Survey. 2015. 7.5-minute Series, Val Verde, California, Topographic Quadrangle. Reston, VA.

[29] U.S. Geologic Survey. 2012. 7.5-minute Series, Warm Springs Mountain, California, Topographic Quadrangle. Reston, VA.

[30] U.S. Geologic Survey. 2015. 7.5-minute Series, Whitaker Peak, California, Topographic Quadrangle. Reston, VA.

[31] U.S. Fish and Wildlife Service. 2015. *Critical Habitat Mapper*. Available at: http://criticalhabitat.fws.gov/crithab/flex/crithabMapper.jsp?

[32] Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, eds. 2012. *The Jepson Manual: Vascular Plants of California*. 2nd ed. Berkeley: University of California Press.

Federally Protected Wetlands and Waterways

The purpose of evaluating federal Waters of the United States was to determine what federal wetlands and waterways are potentially present and which agency (federal or State) may have jurisdiction. Sapphos Environmental, Inc. used the National Wetlands Inventory (NWI) database and USGS topographical maps to determine if federal wetlands may be present within the Castaic project area. For the purpose of this evaluation, all NWI wetlands are assumed to be USACOE jurisdictional wetlands, but these wetlands may also fall under other jurisdictions. In addition, Sapphos Environmental, Inc. used USGS maps and blue-line drainage data to find navigable water bodies and blue-line features that may be considered federal waterways. A jurisdictional delineation would be required to be undertaken to assess the presence or absence of Waters of the United States and the potential for development of a trails system to result in dredge or fill activities within any 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.

Migratory Corridors and Nursery Sites

Sapphos Environmental, Inc. used GIS to overlay the Castaic project area 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 area. The County has established SEAs primarily with the goal of protecting plants and animals and their corridors. Sapphos Environmental, Inc. used the SEAs in the vicinity of the Castaic project area as indicators of the presence of wildlife corridors. The Castaic project area would require a directed survey to assess the presence or absence of migratory corridors or nursery sites and the potential for development of a trails system to result in impacts to such resources.

Oak and Native Woodlands

The evaluation of oak and native woodlands for the Castaic project area was undertaken using data from the Natural Heritage Division of CDFW via a query of the CNDDB, which identifies special-status natural communities. The Natural Heritage Division is currently in the process of classifying and mapping vegetation in California. Consequently, these CNDDB records date back only as recently as 1993. It is important to note that there is the potential for additional oak and native woodlands to exist within the Castaic project area as well as additional individual oak trees or other native trees. Focused plant community and tree mapping would need to be undertaken to assess the presence or absence and extent of oak and native woodland communities as well as individual oak and native trees.

General Plans and Policies

The Los Angeles County General Plan 2035, Santa Clarita Valley Area Plan, and Newhall Ranch Specific Plan were evaluated to determine if the Castaic project area has the potential to conflict with adopted goals, policies, and ordinances related to conservation of biological resources that are applicable to the plan. No goals or policies within Northlake Specific Plan pertain to biological resources. The Los Angeles County Oak Tree Ordinance, Wildflower Reserve Ordinance, Significant Ecological Area Ordinance, and Sensitive Environmental Resource Area Ordinance were also evaluated to determine its applicability to the proposed project.

Habitat Conservation Plans and Natural Community Conservation Plans

Adopted and proposed HCPs and NCCPs within and adjacent to the Castaic project area were mapped using data obtained from the USFWS and CDFW. The boundaries of any HCP or NCCP were compared to the Castaic project area boundaries using CDFW's NCCP California Regional Conservation Plans Map, which features all NCCPs and HCPs in the State of California (see https://www.wildlife.ca.gov/Conservation/Planning/NCCP). All applicable HCPs and NCCPs were intensively reviewed to identify provisions for the management of biological resources that are applicable to the proposed project.

EXISTING CONDITIONS

Listed, Sensitive, and Locally Important Species

Listed and Candidate Species and Critical Habitat

The literature review identified 26 species that are listed or candidate species under protection of the federal ESA or California ESA that are known from the region, including 10 plant species and 16 wildlife species (Figure 4, *Listed Plant and Wildlife Species with the Potential to Occur in the Castaic Project Area*; Table 4, *Listed Plant and Wildlife Species with the Potential to Occur in the Castaic Project Area*).

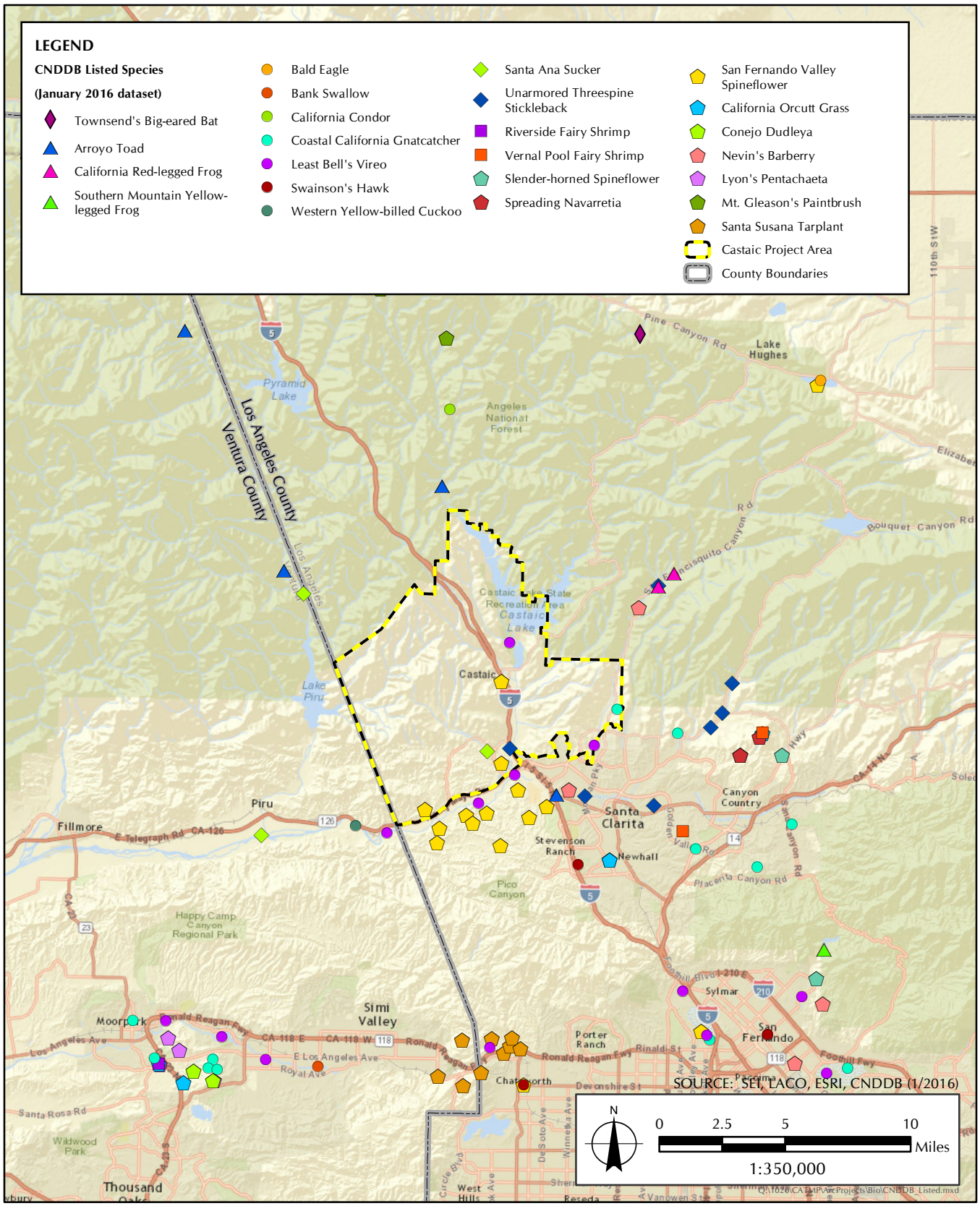

FIGURE 4

Listed Plant and Wildlife Species with the Potential to Occur in the Castaic Project Area

TABLE 4
LISTED PLANT AND WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR IN THE CASTAIC PROJECT AREA

Common Name	Scientific Name	Status	Habitat	Potential to Occur within the Castaic Project Area
Plants				
Braunton's milk-vetch*	*Astragalus brauntonii*	FE, CRPR: 1B.1	Chaparral, closed-cone coniferous forest, coastal scrub, limestone, valley and foothill grassland; often in recent burned or disturbed areas; usually in sandstone soil with carbonate layers; occurs between 4 and 640 meters (m) above mean sea level (MSL).	Low. The Castaic project area is outside of the elevation range for this species.
California Orcutt grass	*Orcuttia californica*	FE, SE, CRPR: 1B.1	Vernal pool, wetland; occurs 49–2,165 feet (ft) above MSL.	Moderate. CNDDB records for this species exist within 5 miles of the Castaic project area, which may contain suitable habitat.
Conejo dudleya	*Dudleya parva*	FT, CRPR: 1B.2	Rocky or gravelly, clay or volcanic soil. Coastal scrub, and valley and foothill grassland; occurs between 60 and 450 m above MSL.	Low. The Castaic project area is outside of the elevation range for this species.
Lyon's pentachaeta	*Pentachaeta lyonii*	FE, SE, CRPR: 1B.1	Chaparral (openings), coastal scrub, valley and foothill grassland; rocky, clay soils; occurs between 30 and 630 m above MSL.	Low. The Castaic project area is outside of the elevation range for this species.
Mt. Gleason paintbrush	*Castilleja gleasoni*	SR, CRPR: 1B.2	Chaparral, lower montane coniferous forest, pinyon and juniper woodland; occurs 1,160–2,170 m above MSL.	Moderate. CNDDB records for this species exist within 5 miles of the Castaic project area, which may contain suitable habitat.
Nevin's barberry	*Berberis nevinii*	FE, SE, CRPR: 1B.1	Chaparral, cismontane woodland, coastal scrub, riparian scrub, in sandy or gravelly soils; occurs 274–825 m above MSL.	Moderate. CNDDB records for this species exist within 5 miles of the Castaic project area, which may contain suitable habitat.
San Fernando Valley spineflower	*Chorizanthe parryi var. fernandina*	FC, SE, CRPR: 1B.1	Coastal scrub in sandy soil, valley and foothill grassland; occurs 150–1,220 m above MSL.	Very high. Several CNDDB records for this species exist within and in the immediate vicinity of the Castaic project area.
Santa Susana tarplant	*Deinandra minthornii*	SR, CRPR: 1B.2	Rocky soil; Chaparral and coastal scrub; occurs 280–760 m above MSL.	Low. The Castaic project area is outside of the elevation range for this species.
slender-horned spineflower	*Dodecahema leptoceras*	FE, SE, CRPR: 1B.1	Chaparral, cismontane woodland, coastal scrub (alluvial fan); often in sandy soil; occurs 200–760 m above MSL.	Low. The Castaic project area is outside of the elevation range for this species.
spreading navarretia	*Navarretia fossalis*	FT, CRPR: 1B.1	Alkali playa, chenopod scrub, marsh and swamp, vernal pool, wetland; occurs 30–655 m above MSL.	Low. The Castaic project area is outside of the elevation range for this species.
Invertebrates				
Riverside fairy shrimp	*Streptocephalus woottoni*	FE	Freshwater, vernal pool complexes.	Low. The Castaic project area does not contain any known vernal pools.
vernal pool fairy shrimp	*Branchinecta lynchi*	FT	Vernal pools from the Transverse Range north into southern Oregon.	Low. The Castaic project area does not contain any known vernal pools.
Fish				
Santa Ana sucker	*Catostomus santaanae*	FT	Aquatic, south coast flowing waters; clear cool ponds, creeks, small to medium rivers with generally coarse substrates; benthic, freshwater.	Very high. CNDDB records for this species exist within the Castaic project area.
unarmored threespine stickleback	*Gasterosteus aculeatus williamsoni*	FE, SE	Clear water systems Los Angeles and Santa Barbara Counties with a low current.	Very high. CNDDB records for this species exist within the Castaic project area.
Amphibians				
arroyo toad	*Anaxyrus californicus*	FE	Desert wash, riparian scrub, riparian woodland, south coast flowing waters, south coast standing waters; mating and egg-laying at shallow stream margins from March to July; adults require overflow pools adjacent to the inflow channel of third- to greater-order streams that are free of predatory fishes in which to breed; occurs between 0–900 m above MSL.	Very high. Critical habitat for this species exists within the Castaic project area.
California red-legged frog	*Rana draytonii*	FT	Humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover, especially in lowlands and foothills.	High. CNDDB records for this species exist near tributaries to the Santa Clara River, which flows through the area
southern mountain yellow-legged frog	*Rana muscosa*	FE, SE	Aquatic; eggs usually laid in shallow water attached to gravel or rocks; associated with streams lakes and ponds in montane riparian habitat; occurs between 370–2,290 m above MSL.	High. CNDDB records for this species exist near tributaries to the Santa Clara River, which flows through the area

TABLE 4
LISTED PLANT AND WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR IN THE CASTAIC PROJECT AREA

Common Name	Scientific Name	Status	Habitat	Potential to Occur within the Castaic Project Area
Birds				
bald eagle	*Haliaeetus leucocephalus*	FD, SE	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.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
bank swallow	*Riparia riparia*	ST	Riparian scrub, riparian woodland; nests in steep sand, dirt, or gravel banks, in burrows dug near the top of the bank, along the edge of inland water, along coast, in gravel pits, or road embankments; diet primarily flying insects.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
California condor	*Gymnogyps californianus*	FE, SE	Chaparral, coniferous forests, and oak savannah in Southern and Central California.	Moderate. CNDDB records for this species exist within 5 miles of the Castaic project area, which may contain suitable habitat.
coastal California gnatcatcher	*Polioptila californica californica*	FT	Coastal bluff scrub, coastal scrub; dry coastal slopes, washes, and mesas; cone-shaped nests built in shrubs; areas of low plant growth (about 1 m high); strongly associated with sage scrub; generally avoids crossing unsuitable habitat.	Very high. CNDDB records for this species exist within the Castaic project area.
least Bell's vireo	*Vireo bellii pusillus*	FE, SE	Riparian forest, riparian scrub, riparian woodland; forages exclusively in riparian habitats primarily on insects; dense riparian understory shrubbery required for nesting; nests usually 1 m off ground.	Very high. CNDDB records and critical habitat for this species exist within the Castaic project area.
southwestern willow flycatcher	*Empidonax traillii extimus*	FE, SE	Riparian woodland; breeds in relatively dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands including lakes and reservoirs; habitat patches must be at least 0.25 acres in size and at least 30 ft wide.	Very high. Critical habitat for this species exist within the Castaic project area.
Swainson's hawk	*Buteo swainsoni*	ST	Riparian, cropland/hedgerow, desert, grassland/herbaceous, savanna, mixed woodland; may be found in grasslands and other open habitats in winter and migration.	Moderate. CNDDB records for this species exist within 5 miles of the Castaic project area, which may contain suitable habitat.
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT, SE	Riparian forest; dense riparian understory important for nest site selection; cottonwood trees important foraging habitat; nests in dense trees, shrubs, vines.	Moderate. CNDDB records for this species exist within 5 miles of the Castaic project area, which may contain suitable habitat.
Mammals				
Townsend's big-eared bat	*Corynorhinus townsendii*	SCT	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.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, and the area may contain suitable habitat.

KEY:
FD = federal delisted species; FC = federal candidate; FE = federal endangered; FT = federal threatened; SCT = State candidate threatened; SE = State endangered; SR = State Rare; ST = State threatened; CRPR = California Rare Plant Rank: 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.
NOTE:
* Individual records within the vicinity of the Castaic project area are not provided by CNPS, therefore this plant is not shown on Figure 4.

Critical habitat is a designated area defined by the 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 or endangered. The Castaic project area contains designated critical habitat for two species: Arroyo toad and least Bell's vireo (Figure 5, *Critical Habitat Present within the Castaic Project Area*). There are 268.0 acres of critical habitat for Arroyo toad, 154.8 acres of critical habitat for southwestern willow flycatcher, and 1.9 acres for least Bell's vireo located within to the boundary of the Castaic project area. All instances of critical habitat are located near the Santa Clara River and Castaic Lake.

Sensitive Wildlife Species

A total of 38 wildlife species that are considered sensitive in the State of California have the potential to be present within the Castaic project area (Table 5, *Sensitive Wildlife Species with the Potential to Occur in the Castaic Project Area*; Figure 6, *Sensitive Wildlife Species with the Potential to Occur in the Castaic Project Area*). This includes 3 invertebrates, 1 fish, 2 amphibians, 7 reptiles, 12 birds, and 13 mammals.

Rare and Locally Important Plant Species

A total of 41 plant species that are considered rare in the State of California or are locally important to the Castaic region have the potential to be present within the Castaic project area (Table 6, *Rare and Locally Important Plant Species with the Potential to Occur in the Castaic Project Area*; Figure 7, *CNDDB Rare and Locally Important Plant Species with the Potential to Occur in the Castaic Project Area*).

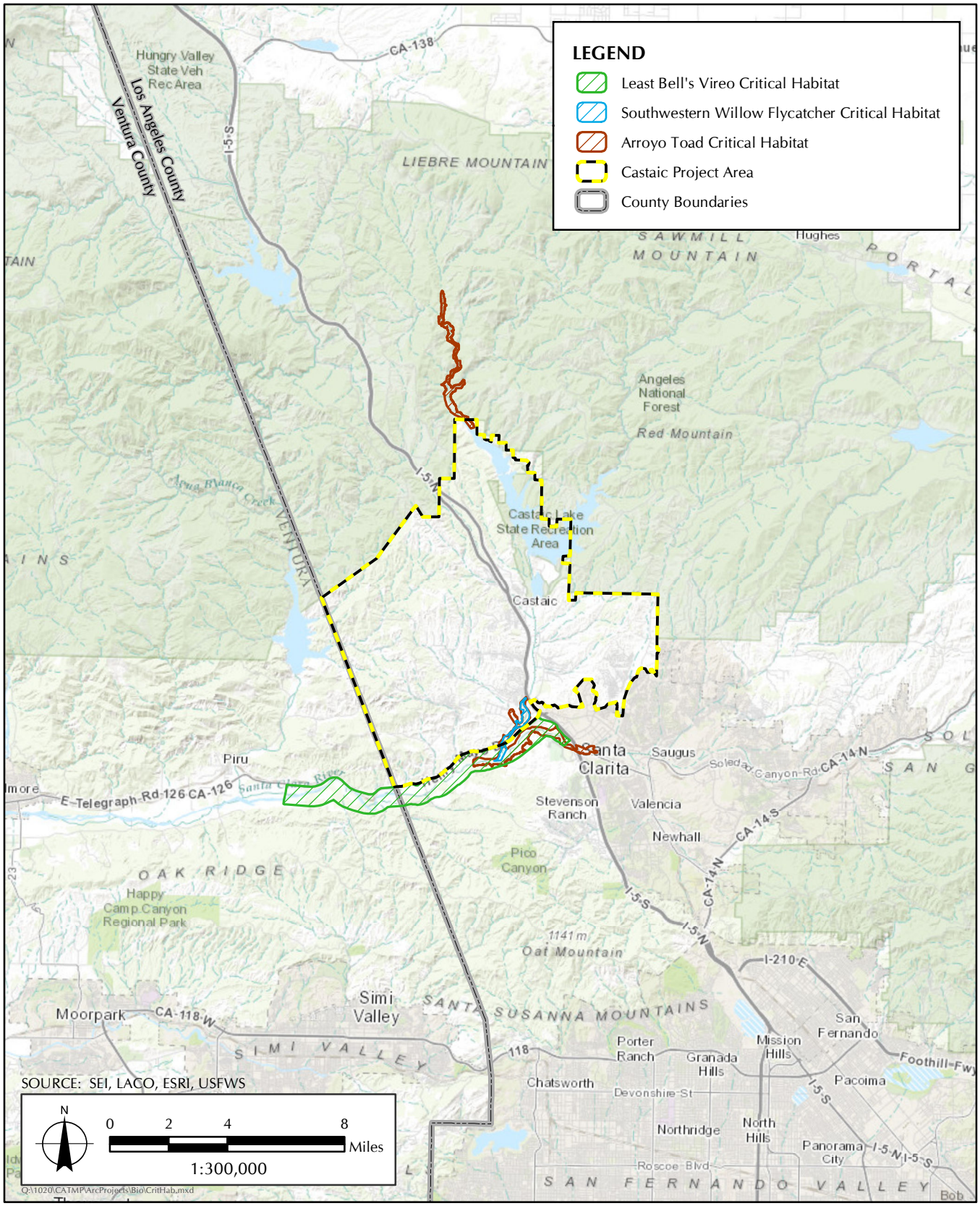

FIGURE 5

Critical Habitat Present within the Castaic Project Area

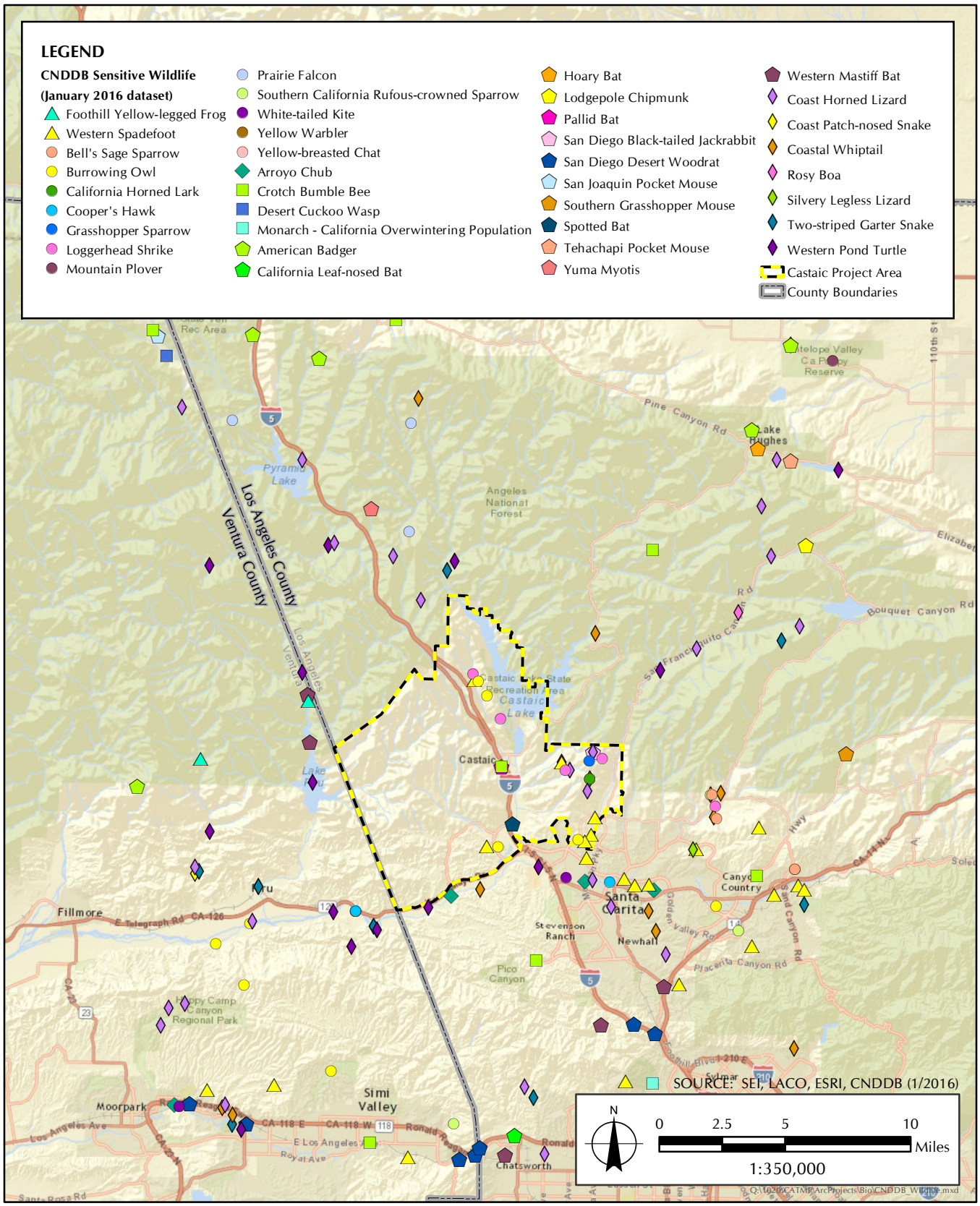

FIGURE 6

Sensitive Wildlife Species with the Potential to Occur in the Castaic Project Area

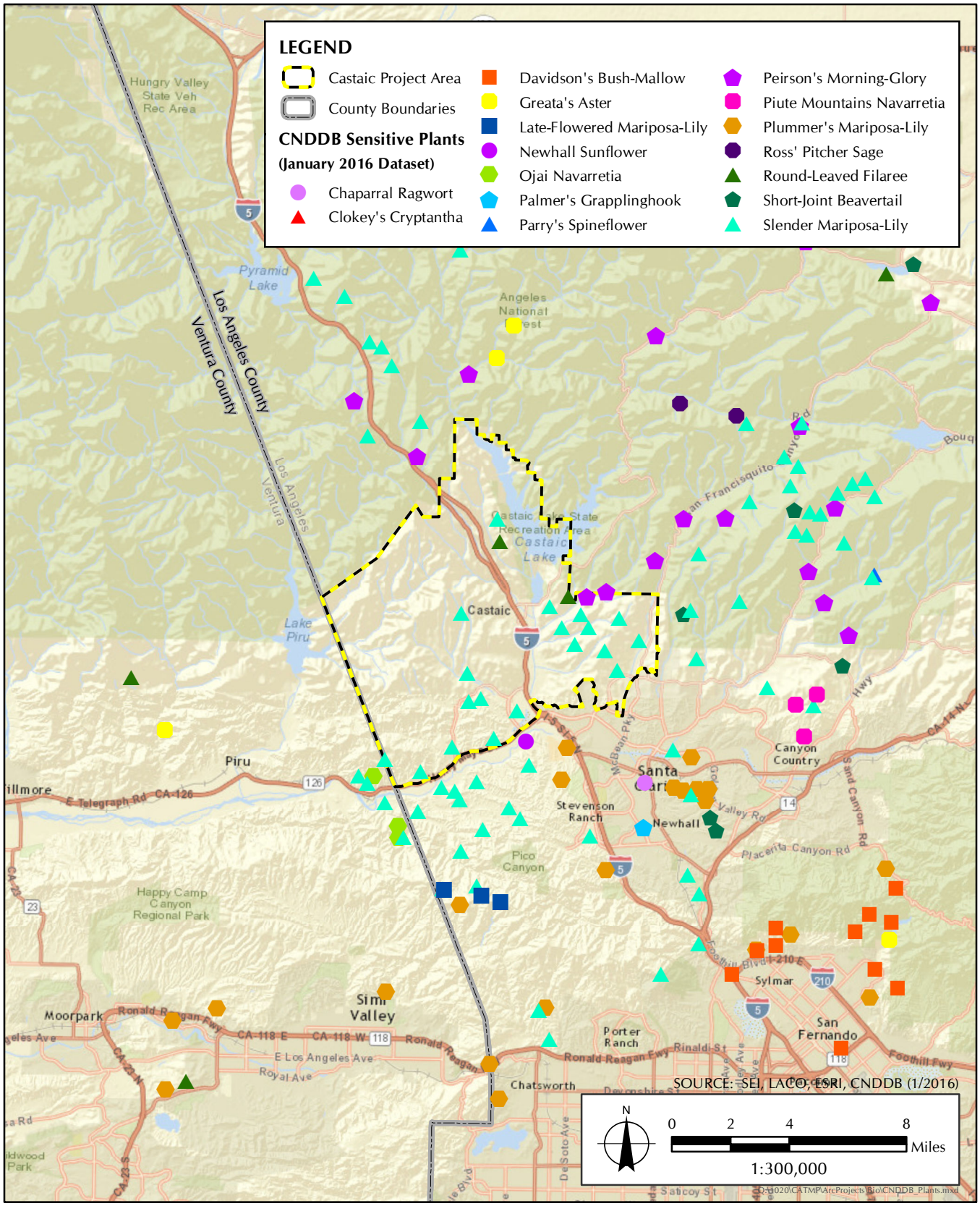

FIGURE 7

California Natural Diversity Database Rare and Locally Important Plant Species with the Potential to Occur in the Castaic Project Area

TABLE 5
SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR IN THE CASTAIC PROJECT AREA

Common Name	Scientific Name	Status	Habitat	Potential to Occur within the Castaic Project Area
Invertebrates				
Crotch bumble bee	*Bombus crotchii*	CSA	Warm and dry sites, including the inner Coast Range of California and margins of the Mojave Desert.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
desert cuckoo wasp	*Ceratochrysis longimala*	CSA	No description available; record from Hungry Valley, 5 miles south of Gorman.	Unknown. Species habitat description is unknown.
monarch butterfly - California overwintering population	*Danaus plexippus pop. 1*	CSA	Grassland/herbaceous, old field, sand/dune, shrubland/chaparral, suburban/orchard, woodland–hardwood, woodland–mixed, coastal California conifer or eucalyptus groves. Adults rely on coastal non-native woodlands (especially Eucalyptus) for winter roosting aggregations, larval (caterpillar) stage forages exclusively on milkweed (*Asclepias* spp.), which occurs in grassland, wetland and riparian areas.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
Fish				
arroyo chub	*Gila orcuttii*	CSC	Aquatic, south coast flowing waters; freshwater; benthic; headwaters, creeks, intermittent streams, small to medium rivers; spawns in stream pools; diet primarily aquatic invertebrates.	High. CNDDB records for this species exist near tributaries to the Santa Clara River, which flows through the area
Amphibians				
foothill yellow-legged frog	*Rana boylii*	CSC	Rocky streams, rivers with rocky substrate; found in forests, chaparral, and woodlands.	High. CNDDB records for this species exist near tributaries to the Santa Clara River, which flows through the area
western spadefoot	*Spea hammondii*	CSC	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pool, wetland; benthic, burrowing in or using soil; it prefers shortgrass plains, sandy or gravelly soil (e.g., alkali flats, washes, alluvial fans). It is fossorial and breeds in temporary rain pools and slow-moving streams.	Very high. Several CNDDB records for this species exist within the Castaic project area.
Reptiles				
coast horned lizard	*Phrynosoma blainvillii*	CSC	Found in a variety of vegetation types, including coastal scrub, coastal bluff scrub, valley and foothill grassland, chaparral, cismontane woodland, pinyon and juniper woodlands, riparian scrub, riparian woodland and desert wash; in inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance.	Very high. Several CNDDB records for this species exist within the Castaic project area.
coast patch-nosed snake	*Salvadora hexalepis virgultea*	CSC	Chaparral, canyons and rocky hillsides, plains, in semi-arid brushy areas. Occurs from below sea level to 7,000 feet (ft) above mean sea level (MSL).	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
coastal whiptail	*Aspidoscelis tigris stejnegeri*	CSA	Occurs in habitats that are primarily hot and dry open areas with sparse foliage. Found in chaparral, woodland, and riparian areas.	High. Several CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
rosy boa	*Charina trivirgata*	CSA	Inhabits rocky outcrops and rocky shrublands in the southwestern U.S. and Mexico. Habitats are diverse and include desert, arid scrub, brushland, sandy plains, rocky slopes, and chaparral-covered foothills, particularly where moisture is available, as around springs, streams, and canyon floors.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
silvery legless lizard	*Anniella pulchra pulchra*	CSC	Chaparral, coastal dunes, coastal scrub; burrows in loose soil, especially in semi-stabilized sand dunes and also in other areas with sandy soil, in areas vegetated with oak or pine-oak woodland, or chaparral; also wooded stream edges, and occasionally desert-scrub; bush lupine often is an indicator of suitable conditions; often found in leaf litter, under rocks, logs, and driftwood.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
two-striped garter snake	*Thamnophis hammondii*	CSC	Marsh and swamp, riparian scrub, riparian woodland, wetland; generally found in or near permanent fresh water, often along streams with rocky beds bordered by willows and other riparian vegetation, including mountain slopes and desert oases; requires dense riparian vegetation; burrowing in or using soil.	High. Several CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
western pond turtle	*Emys marmorata*	CSC	Aquatic, artificial flowing waters, marsh and swamp, south coast flowing waters, south coast standing waters, wetland; habitat includes permanent and intermittent waters of rivers, creeks, small lakes and ponds, man-made stock ponds and sewage-treatment ponds; nesting sites on sandy banks and bars, in fields, or sunny spots up to a few hundred feet from water.	High. Several CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
Birds				
Bell's sage sparrow	*Artemisiospiza belli belli*	CSA	Chaparral, shrubland; often found in habitats dominated by chamise and/or California sagebrush.	High. Several CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
burrowing owl	*Athene cunicularia*	CSC	Found in open grasslands, agricultural and range lands, and desert habitats and often are associated with burrowing animals, specifically the California ground squirrel; can also inhabit grass, forbs, and shrub stages of pinyon and ponderosa pine habitats.	Very high. Several CNDDB records for this species exist within the Castaic project area.
California horned lark	*Eremophila alpestris actia*	CSA	Grassland/herbaceous; open areas with sparse low herbaceous vegetation or scattered low shrubs; agricultural fields; nests in hollow on ground next to grass tuft, manure, or clod of soil.	Very high. CNDDB records for this species exist within the Castaic project area.

TABLE 5
SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR IN THE CASTAIC PROJECT AREA

Common Name	Scientific Name	Status	Habitat	Potential to Occur within the Castaic Project Area
Cooper's hawk	*Accipiter cooperii*	CSA	Cismontane woodland, riparian forest, riparian woodland, upper montane coniferous forest, urban areas; nests in tall trees; usually builds new nest on horizontal limb near trunk or in crotch, 20–59 ft above ground; may use virtually all habitats for foraging.	High. Several CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
grasshopper sparrow	*Ammodramus savannarum*	CSC	Grassland/herbaceous, old field, savanna; grasslands with patches of vegetation and moderately deep litter preferred for breeding; occasionally inhabits croplands.	Very high. CNDDB records for this species exist within the Castaic project area.
loggerhead shrike	*Lanius ludovicianus*	CSC	Cropland/hedgerow, desert, grassland/herbaceous, old field, savanna, shrubland/chaparral. Nests in shrubs or small trees.	Very high. Several CNDDB records for this species exist within the Castaic project area.
mountain plover	*Charadrius montanus*		Chenopod scrub, valley and foothill grassland. Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground and flat topography. Prefers grazed areas and areas that support burrowing rodents.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
prairie falcon	*Falco mexicanus*	CSA	Grasslands, shrub-steppe, deserts, open areas below 3,048 meters (m) in elevation.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	CSC	Shrubland/chaparral, coastal sage dominated by sagebrush, coastal bluff scrub. Nests on the ground or low in the branches of trees or shrubs.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
white-tailed kite	*Elanus leucurus*	CFP	Cropland/hedgerow, grassland/herbaceous, savanna, hardwood woodland. Nests in trees.	High. Several CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
yellow warbler	*Setophaga petechial*	CSC	Riparian woodland. Commonly in open to medium-density woodlands and forests with a heavy brush understory in breeding season. Nests often placed in deciduous saplings or shrubs 2-16 ft above ground. Territory includes tall trees for foraging and dense understory for nesting.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
yellow-breasted chat	*Icteria virens*	CSC	Riparian forest, riparian scrub, riparian woodland; nests in bushes, brier tangles, vines, and low trees, generally in dense vegetation less than 7 ft above ground.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
Mammals				
American badger	*Taxidea taxus*	CSC	Found in arid, open habitats, particularly grasslands, savannahs, mountain meadows, and desert scrub openings; needs friable soils for digging and open, uncultivated ground; occurs at low to moderate slopes; has been associated with Joshua tree woodland and pinyon-juniper habitats.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
California leaf-nosed bat	*Macrotus californicus*	CSC	Desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, palm oasis; day roosts in mine tunnels or caves, occasionally buildings and bridges.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
hoary bat	*Lasiurus cinereus*	CSA	Forages over a wide range of habitats, but prefers open habitats with access to trees for roosting, and water. Primarily roosts in trees and foliage. Ranges throughout most of California.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
lodgepole chipmunk	*Neotamias speciosus speciosus*	CSA	Chaparral, upper montane coniferous forest; usually found in open-canopy forests. Southern California elevation range 16,398 to 9,688 ft above MSL.	Low. The Castaic project area is outside of the elevation range for this species.
pallid bat	*Antrozous pallidus*	CSC	Occurs throughout the American west; chaparral, coastal scrub, desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, riparian woodland, Sonoran desert scrub, upper montane coniferous forest, valley and foothill grassland; roosts in rock crevices, caves, mineshafts, under bridges, in buildings, and within hollow trees; consumes insects and other invertebrates; roosts in small colonies of 10 to 100 and emerges late at night to forage on the ground.	Very high. CNDDB records for this species exist within the Castaic project area.
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	CSC	Coastal scrub; open country with scattered thickets or patches of shrubs. Rests by day in shallow depression.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
San Diego desert woodrat	*Neotoma lepida intermedia*	CSC	Coastal scrub; sagebrush scrub; chaparral; often associated with large cactus patches; also found in rocky outcroppings and boulder hillsides within chaparral and oak woodland habitats.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
San Joaquin Pocket Mouse	*Perognathus inornatus*	CSA	Dry, open grasslands, scrub areas, between 350 and 600 m above MSL.	Low. The Castaic project area is outside of the elevation range for this species.
southern grasshopper mouse	*Onychomys torridus ramona*	CSC	Chenopod scrub; consumes soft-bodied insects including cutworms and grasshoppers; lives in arid habitats but requires no open water sources; the species forages under and within shrubs and crosses open areas.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
spotted bat	*Euderma maculatum*	SSC	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. Prefers rock crevices in cliffs or caves for roosting.	Very high. CNDDB records for this species exist within the Castaic project area.

TABLE 5
SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR IN THE CASTAIC PROJECT AREA

Common Name	Scientific Name	Status	Habitat	Potential to Occur within the Castaic Project Area
Tehachapi pocket mouse	*Perognathus alticolus inexpectatus*	SSC	Chaparral, Joshua tree woodland, valley and foothill grassland. Arid annual grassland and desert shrub communities, but also found in fallow grain fields and in Russian thistle. Burrows for cover and nesting. Aestivates and hibernates during extreme weather. Forages on open ground and under shrubs.	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area, which may contain suitable habitat.
western mastiff bat	*Eumops perotis californicus*	CSC	Found in the southwestern United States, generally away from human development; 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.	High. Several CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
Yuma myotis	*Myotis yumanensis*	CSA	Inhabits juniper and riparian woodlands to desert regions in proximity to open water. Roosts in caves, attics, buildings, mines, and bridges.	High. Several CNDDB records for this species exist within the immediate vicinity of the Castaic project area.

KEY:
SSC = California Species of Special Concern; CSA* = California Special Animal
SOURCE:
California Department of Fish and Wildlife. 2015. *Rarefind 5: A Database Application for the Use of the California Department of Fish and Game Natural Diversity Data Base*. Sacramento, CA.
NOTE:
* California Special Animal (CSA) is a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status. The Department of Fish and Wildlife considers the taxa on this list to be those of greatest conservation need. For those species with statuses identified by USFWS and/or CDFW, the status is noted. Those species included on the list due to identification by other governmental agencies and/or non-governmental conservation organizations are listed as CSA.

TABLE 6
RARE AND LOCALLY IMPORTANT PLANT SPECIES WITH THE POTENTIAL TO OCCUR IN THE CASTAIC PROJECT AREA

Common Name	Scientific Name	Status	Habitat	Source	Potential to Occur within the Castaic Project Area
California androsace	*Androsace elongata ssp. acuta*	CRPR: 4.2	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland; occurs between 150–1,200 meters (m) above mean sea level (MSL).	CNPS[33]	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
Catalina mariposa lily	*Calochortus catalinae*	CRPR: 4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland; occurs between 15 and 700 m above MSL.	CNPS	Low. The Castaic project area is outside of the elevation range for this species.
chaparral ragwort	*Senecio aphanactis*	CRPR: 2B.2	Chaparral, cismontane woodland, coastal scrub; sometimes alkaline soils; occurs between 15 and 800 m above MSL.	CNPS, CNDDB	High. CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
Clokey's cryptantha	*Cryptantha clokeyi*	CRPR: 1B.2	Mojavean desert scrub; occurs between 725–1,365 m above MSL.	CNPS, CNDDB	Low. The Castaic project area does not contain Mojavean desert scrub habitat.
club-haired mariposa lily	*Calochortus clavatus var. clavatus*	CRPR: 4.3	Usually in serpentinite, clay, rocky soils. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland; occurs 75 – 1,300 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
Davidson's bush-mallow	*Malacothamnus davidsonii*	CRPR: 1B.2	Chaparral, cismontane woodland, coastal scrub, riparian woodland; occurs 185 to 855 m above MSL.	CNPS, CNDDB	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
fragrant pitcher sage	*Lepechinia fragrans*	CRPR: 4.2	Chaparral; occurs 20–1,310 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
Greata's aster	*Symphyotrichum greatae*	CRPR: 1B.3	Occurs in chaparral, broadleaf upland forest, cismontane woodland, lower montane coniferous forest, and riparian woodland on mesic soils; occurs 300 to 2,010 m above MSL.	CNPS, CNDDB	High. CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
Hubby's phacelia	*Phacelia hubbyi*	CRPR: 4.2	Chaparral, coastal scrub, valley and foothill grassland in gravelly, rocky, and talus soils; occurs between 0 and 1,000 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
island mountain-mahogany	*Cercocarpus betuloides var. blancheae*	CRPR: 4.3	Closed-cone coniferous forest, chaparral; occurs 30–600 m above MSL.	CNPS	Low. The Castaic project area is outside of the elevation range for this species.
late-flowered mariposa-lily	*Calochortus fimbriatus*	CRPR: 1B.2	Often in serpentinite soil. Chaparral, cismontane woodland, riparian woodland; occurs 275–1,905 m above MSL.	CNPS, CNDDB	High. CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
Lincoln rockcress	*Boechera lincolnensis*	CRPR: 2B.3	Carbonate soil. Chenopod scrub, Mojavean desert scrub; occurs 1,100–2,705 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
Los Angeles sunflower	*Helianthus nuttallii ssp. parishii*	CRPR: 1A	Freshwater marsh, marsh and swamp, salt marsh, wetlands; occurs between 10 and 1,675 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
many-stemmed dudleya	*Dudleya multicaulis*	CRPR: 1B.2	Chaparral, coastal scrub, valley and foothill grassland, often clay; occurs between 50 and 790 meters above MSL.	CNPS	Low. The Castaic project area is outside of the elevation range for this species.
mesa horkelia	*Horkelia cuneata var. puberula*	CRPR: 1B.1	Chaparral, cismontane woodland, coastal shrub; occurs between 70 and 810 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
Mojave phacelia	*Phacelia mohavensis*	CRPR: 4.3	Sandy or gravelly soil. Cismontane woodland, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland; occurs 1,400–2,500 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
monkey-flower savory	*Clinopodium mimuloides*	CRPR: 4.2	Found on mesic stream banks. Chaparral, north coast coniferous forest; occurs 305–1800 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
Mt. Pinos larkspur	*Delphinium parryi ssp. purpureum*	CRPR: 4.3	Chaparral, Mojavean desert scrub, pinyon and juniper woodland; occurs between 1,000 and 2,600 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
Mt. Pinos onion	*Allium howellii var. clokeyi*	CRPR: 1B.3	Great Basin scrub, pinyon and juniper woodland; occurs between 1,300 and 1,850 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
Newhall sunflower	*Helianthus inexpectatus*	CRPR: 1B.1	Marsh and swamp, meadow and seep, wetland, riparian woodland. Occurs around 305 m above MSL.	CNPS, CNDDB	Low. The Castaic project area is outside of the elevation range for this species.
ocellated Humboldt lily	*Lilium humboldtii ssp. ocellatum*	CRPR: 4.2	Found in openings; chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland; occurs between 30 and 1,800 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.

[33] Plant records from the CNPS Rare Plant Inventory do not contain spatial data that allow for inclusion on a records search map. Therefore, plants in this table that contain CNPS as the sole source were not included in Figure 8.

TABLE 6
RARE AND LOCALLY IMPORTANT PLANT SPECIES WITH THE POTENTIAL TO OCCUR IN THE CASTAIC PROJECT AREA

Common Name	Scientific Name	Status	Habitat	Source	Potential to Occur within the Castaic Project Area
Ojai navarretia	*Navarretia ojaiensis*	CRPR: 1B.1	Chaparral, coastal scrub, valley and foothill grassland. Openings in shrublands or grasslands. Occurs between 275 and 620 m above MSL.	CNPS, CNDDB	Low. The Castaic project area is outside of the elevation range for this species.
Palmer's grapplinghook	*Harpagonella palmeri*	CRPR: 4.2	Clay soils, open grassy areas within shrubland; chaparral, coastal scrub, valley and foothill grassland; occurs between 20 and 955 m above MSL.	CNPS, CNDDB	High. CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
paniculate tarplant	*Deinandra paniculata*	CRPR: 4.2	Usually found in mesic soils, sometimes sandy soils; coastal scrub, valley and foothill grassland, vernal pools; occurs between 25 and 940 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
Parry's spineflower	*Chorizanthe parryi var. parryi*	CRPR: 1B.1	Sandy or rocky openings, chaparral, cismontane woodland, coastal scrub, valley and foothill grassland; occurs 902–4,003 feet (ft) above MSL.	CNPS, CNDDB	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
Parry's sunflower	*Hulsea vestita ssp. parryi*	CRPR: 4.3	Found in granitic or carbonate soils, rocky openings; lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest; occurs between 1,370 and 2,895 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
Peirson's morning-glory	*Calystegia peirsonii*	CRPR: 4.2	Chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland; occurs 30 to 1,500 m above MSL.	CNPS, CNDDB	Very High. Several CNDDB records for this species exist within and in the immediate vicinity of the Castaic project area.
Piute Mountains navarretia	*Navarretia setiloba*	CRPR: 1B.1	Cismontane woodland, pinyon and juniper woodlands, valley and foothill grassland. Red clay soils, other clay soils, or on gravelly loam. Occurs between 285 and 2100 m above MSL.	CNPS, CNDDB	High. CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
Plummer's mariposa-lily	*Calochortus plummerae*	CRPR: 4.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland, in granitic rocky soil; occurs 100 to 1,700 m above MSL.	CNPS, CNDDB	High. CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
Robinson's pepper-grass	*Lepidium virginicum var. robinsonii*	CRPR: 4.3	Chaparral and coastal scrub habitat. Occurs between 1 and 885 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
Ross' pitcher sage	*Lepechinia rossii*	CRPR: 1B.2	Chaparral habitats; occurs between 305 and 790 m above MSL.	CNPS, CNDDB	Moderate. CNDDB records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
round-leaved filaree	*California macrophylla*	CRPR: 1B.1	Cismontane woodland, valley and foothill grassland; clay soils; occurs 49–3,937 ft above MSL.	CNPS, CNDDB	Very High. Several CNDDB records for this species exist within the Castaic project area.
San Gabriel bedstraw	*Galium grande*	CRPR: 1B.2	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest; occurs between 425 and 1,500 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
short-joint beavertail	*Opuntia basilaris var. brachyclada*	CRPR: 1B.2	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodlands, riparian woodland; occurs 425 to 1,800 m above MSL.	CNPS, CNDDB	High. CNDDB records for this species exist within the immediate vicinity of the Castaic project area.
slender clarkia	*Clarkia exilis*	CRPR: 4.3	Cismontane woodland; occurs between 120 and 1,000 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
slender mariposa-lily	*Calochortus clavatus var. gracilis*	CRPR: 1B.2	Chaparral, coastal scrub, valley and foothill grassland; occurs 320 to 1,000 above MSL.	CNPS, CNDDB	Very High. Several CNDDB records for this species exist in and within the immediate vicinity of the Castaic project area.
small-flowered morning-glory	*Convolvulus simulans*	CRPR: 4.2	Clay soils and serpentinite seeps; chaparral (openings), coastal scrub, valley and foothill grassland; occurs between 30 and 700 m above MSL.	CNPS	Low. The Castaic project area is outside of the elevation range for this species.
Southern California black walnut	*Juglans californica*	CRPR: 4.2	Chaparral, coastal dunes, coastal scrub, marshes and swamps (coastal salt), found in sandy sometimes rocky soils; occurs between 5 and 300 m above MSL.	CNPS	Low. The Castaic project area is outside of the elevation range for this species.
Tehachapi monardella	*Monardella linoides ssp. oblonga*	CRPR: 3.2	Lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest; occurs between 900 and 2,470 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
vernal barley	*Hordeum intercedens*	CRPR: 3.2	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools; occurs between 5 and 1,000 m above MSL.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.
white pygmy-poppy	*Canbya candida*	CRPR: 4.2	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodlands. Sandy places. Occurs between 600 and 1,460 m.	CNPS	Moderate. CNPS records for this species exist within 10 miles of the Castaic project area which may contain suitable habitat.

KEY: California Native Plant Society: California Rare Plant Rank (CRPR) 1A = Plants Presumed Extinct in California; CRPR: 1B = Plants Rare, Threatened, or Endangered in California and Elsewhere; 2 = Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere; 3 = Plants About Which We Need More Information; 4 = Plants of Limited Distribution.
THREAT RANK:
0.1: Seriously endangered in California. 0.2: Fairly endangered in California. 0.3: Not very endangered in California

Riparian and State Sensitive Plant Communities

The Natural Heritage Division of CDFW identifies special-status natural communities. A record search of the CNDDB reported six state-sensitive or riparian natural communities within the Castaic project area (Table 7, *Riparian Habitat and State Sensitive Plant Communities Reported in the Castaic Project Area*). The distributions of these community records in the Castaic project area are depicted in Figure 8, *Riparian and State Sensitive Plant Community Records in the Castaic Project Area*. The Natural Heritage Division is currently in the process of reclassifying and mapping vegetation in California. Consequently, the most recent CNDDB records date back to 1993. Thus, it is important to note that the likelihood of additional state-sensitive plant communities and riparian habitats to exist within the Castaic project area is high. Individualized surveys within the Castaic project area would be required to delineate State-sensitive and riparian plant communities on a project-by-project basis.

TABLE 7
RIPARIAN AND STATE SENSITIVE PLANT COMMUNITIES REPORTED IN THE CASTAIC PROJECT AREA

Community Name	State Sensitivity Rank	Acres Reported in the Area
Mainland Cherry Forest	S1.1	73
Riversidean Alluvial Fan Sage Scrub	S1.1	232
Southern California Threespine Stickleback Stream	SNR	609
Southern Coast Live Oak Riparian Forest	S4	984
Southern Cottonwood Willow Riparian Forest	S3.2	1,439
Southern Sycamore Alder Riparian Woodland	S4	25
Total		**3,362**

KEY:
State Rank: S1 = .Fewer than 6 viable occurrences statewide and/or up to 518 hectares; S2 = 6-20 viable occurances statewide and/or more than 518 – 2,590 hectares; S3 = 21-100 viable occurrences statewide and/or more than 2,590 – 12,950 hectares; S4 = Greater than 100 viable occurrences statewide, and/or more than 12,950 hectares.
THREAT RANK: 0.1: Very Threatened. 0.2: Threatened.
SOURCE:
California Department of Fish and Wildlife. 2015. *Rarefind 5: A Database Application for the Use of the California Department of Fish and Game Natural Diversity Data Base*. Sacramento, CA.

Federally Protected Wetlands and Waterways

Current NWI[34] maps and USGS blue-line drainage data for the Castaic project area were reviewed for potential wetlands and waterways subject to protection under Section 404 of the Clean Water Act. Wetlands and waterways potentially subject to the jurisdiction of the USACOE were determined to be present within the Castaic project area (Table 8, *Federally Protected Wetlands and Waterways Reported in the Castaic Project Area*). The distribution of federally protected wetlands and waterways in the Castaic project area are shown on Figure 9, *Federally Protected Wetlands and Waterways Reported in the Castaic Project Area*.

[34] U.S. Fish and Wildlife Service. n.d. National Wetlands Inventory Map. Available at: http://www.fws.gov/wetlands/Wetlands-Mapper.html

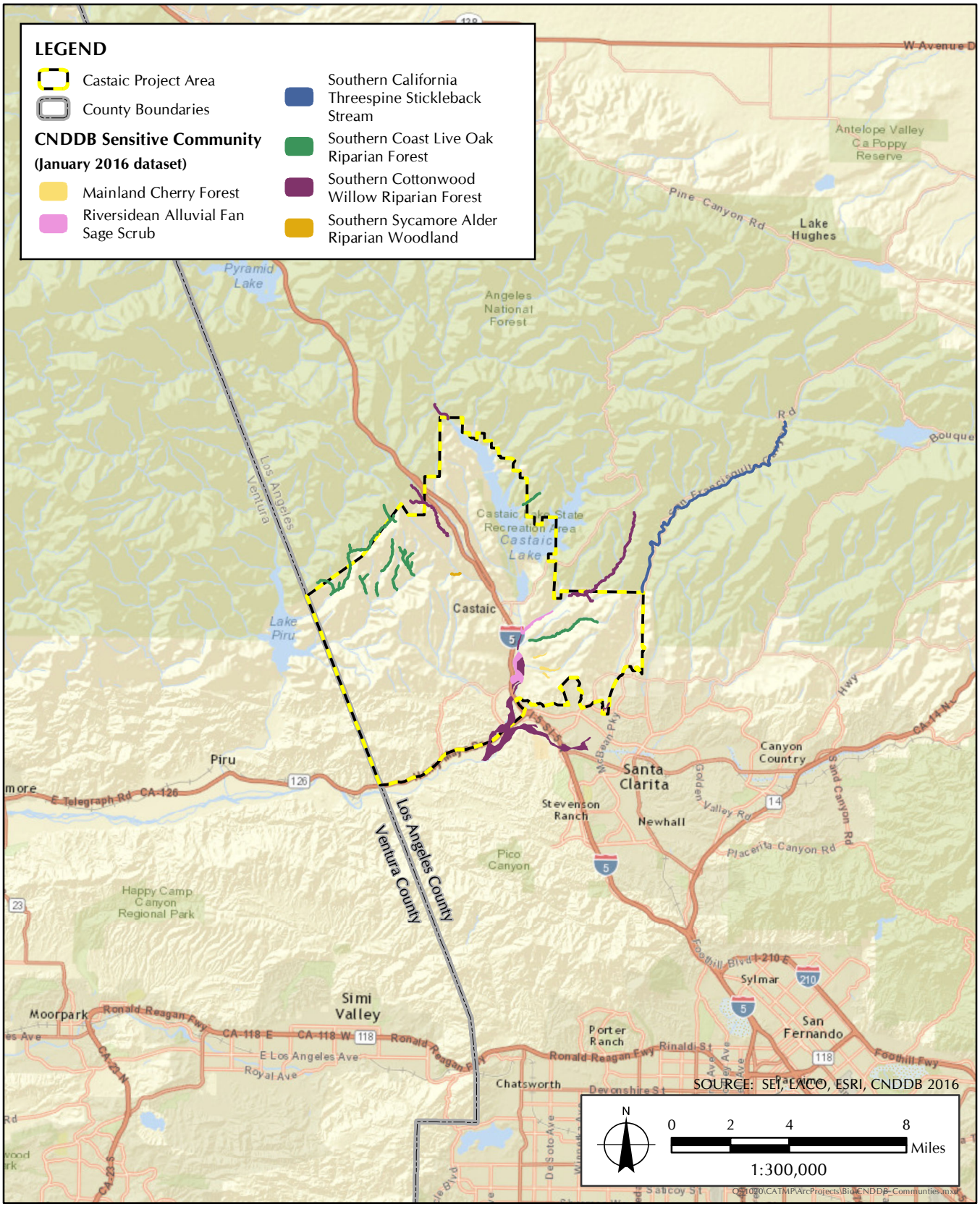

FIGURE 8

Riparian and State Sensitive Plant Community Records in the Castaic Project Area

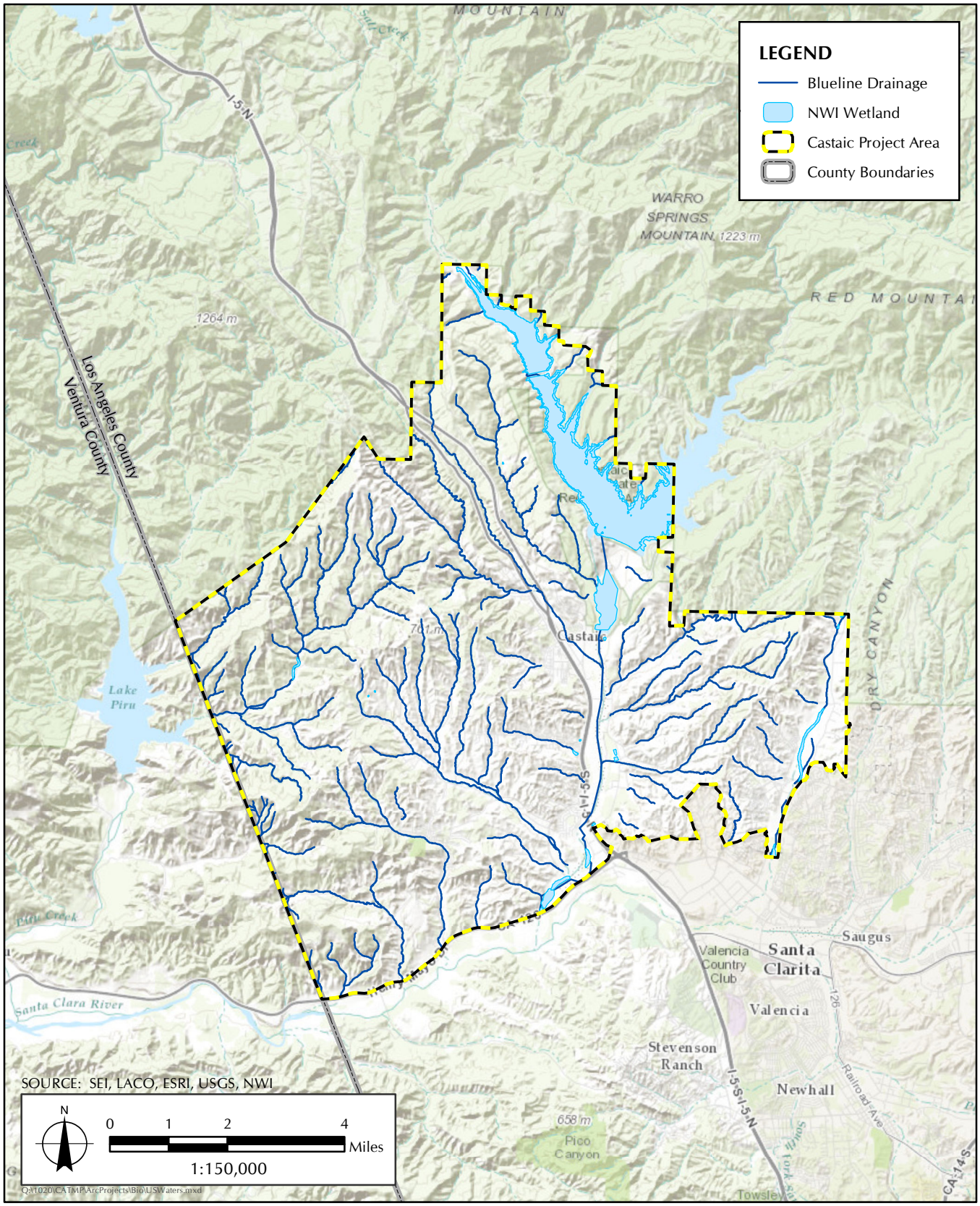

FIGURE 9

Federally Protected Wetlands and Waterways Reported in the Castaic Project Area

In addition to the NWI wetland features described in Table 6, there are 144miles of USGS blue-line drainages reported that may be subject to USACOE jurisdiction in the Castaic project area. The analysis of Federally Protected Wetlands and Waterways in this section was based on aerial imagery and satellite data. Individual projects within the Castaic project area would be required to complete a formal jurisdictional delineation pursuant to USACOE requirements.

TABLE 8
FEDERALLY PROTECTED WETLANDS AND WATERWAYS REPORTED IN THE CASTAIC PROJECT AREA

Wetland Type	National Wetlands Inventory (Acres)
Freshwater Emergent Wetland	42.2
Freshwater Forested/Shrub Wetland	26.3
Freshwater Pond	10.7
Lake	2,178.3
Riverine	48.5
Other	0.4
Total	**2,306.4**

Migratory Corridors and Nursery Sites

A desktop analysis, including aerial imagery habitat and land use assessments, and review of existing data indicative of the presence of wildlife movement corridors and nursery sites in the Castaic project area was conducted. Significant Ecological Areas (SEAs) are areas that have been determined by the County of Los Angeles to contain sensitive biological resources based on the criteria of sensitive plants and animals, plant communities, and corridors. Often, these SEAs can be indicators of the presence of wildlife movement corridors. There are two SEAs that include 9,037.0 acres within the Castaic project area (Table 9, *Significant Ecological Areas Present in the Castaic Project Area,* Figure 10, *Significant Ecological Areas Present in the Castaic Project Area*).

TABLE 9
SIGNIFICANT ECOLOGICAL AREAS PRESENT IN THE CASTAIC PROJECT AREA

Significant Ecological Area Name	Acres
Santa Clara River	958.3
Santa Felicia	8,078.7
Total	**9,037.0**

The Santa Clara River Watershed is a nursery site for several fish species. The Santa Clara River is the largest natural river remaining in Southern California. Although there are no known bird rookeries in the Castaic project area, many species of birds breed within the area. Nesting birds protected under the Migratory Bird Treaty Act (MBTA) have the potential to be present throughout the Castaic project area.

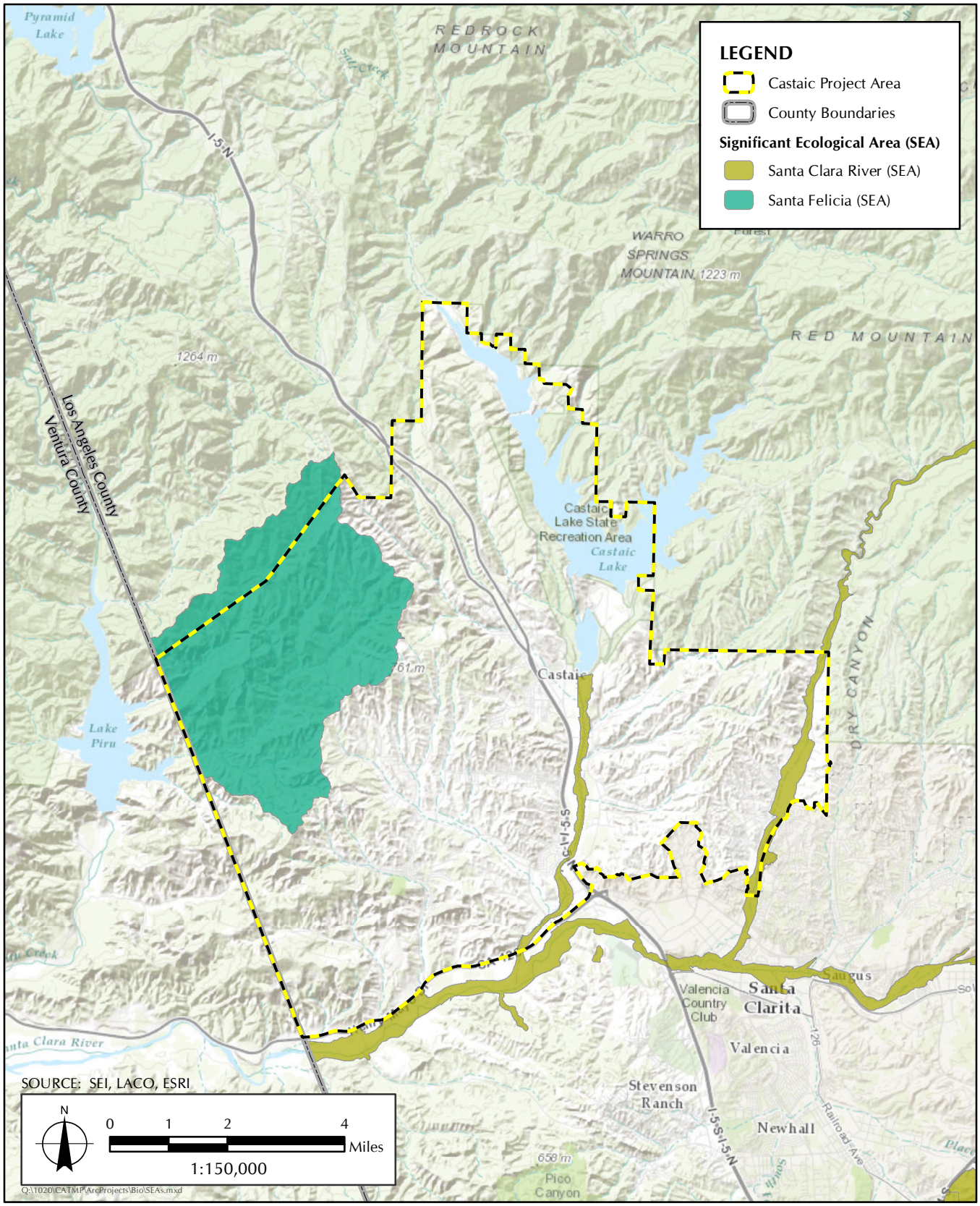

FIGURE 10

Significant Ecological Areas (SEAs) in the Castaic Project Area

Oak and Native Woodlands

A record search of the CNDDB reported approximately 984 acres of Southern Coast Live Oak Riparian Forest in the Castaic project area (Table 5). In addition, there is the potential for protected oak trees as well as other native trees and woodlands to be present on or within the vicinity of the Castaic project area. Oak trees are typically found in oak woodlands and other indigenous woodlands, but may also be found in urban areas as planted trees. Individualized surveys within the Castaic project area would be required to delineate oak and other native woodland communities and to map individual oak and native trees on a project-by-project basis.

General Plans and Policies

Los Angeles County General Plan 2035

Of the 2 goals and 12 policies established in the Conservation and Natural Resources Element of the Los Angeles County General Plan 2035, 2 goals (C/NR 3 and C/NR 4) and 8 policies (C/NR 3.1, C/NR 3.3, C/NR 3.4, C/NR 3.8, C/NR 3.9, C/NR 3.10, C/NR 3.11, and C/NR 4.1) are applicable to the proposed project.

Santa Clarita Valley Area Plan

Of the 7 objectives and 34 policies related to biological resources established in the Conservation and Open Space Element of the Santa Clarita Valley Area Plan, 5 objectives (CO-3.1, CO-3.2, CO-3.3, CO-3.5, and CO-3.6) and 20 policies (CO-3.1.2, CO-3.1.3, CO-3.1.4, CO-3.1.5, CO-3.1.6, CO-3.1.7, CO-3.1.10, CO-3.1.11, CO-3.2.1, CO-3.2.2, CO-3.2.3, CO-3.2.4, CO-3.3.1, CO-3.3.5, CO-3.5.2, CO-3.5.3, CO-3.6.1, CO-3.6.2, CO-3.6.3, and CO-3.6.5) are applicable to the proposed project.

Los Angeles County Municipal Code Title 12, Chapter 12.36 – Wildflower Reserves

The Castaic project area does not contain any designated Wildflower Reserve Areas. Therefore, this ordinance is not applicable to the proposed project.

Los Angeles County Municipal Code Title 22, § 22.56.215 – Significant Ecological Areas

There are two SEAs that include 9,037.0 acres within the Castaic project area, the Santa Clara River SEA and the Santa Felicia SEA (see Table 6 and Figure 10). Therefore, this ordinance is applicable to the proposed project.

Los Angeles County Municipal Code Title 22, § Chapter 22.44, Part 6 – Sensitive Environmental Resource Areas

The Castaic project area is not located within the Santa Monica Mountains Coastal Zone area and does not contain any Sensitive Environmental Resource Areas. Therefore, this ordinance is not applicable to the proposed project.

Newhall Ranch Specific Plan

All five Resource Conservation Objectives within the Newhall Ranch Specific Plan related to biological resources are relevant to the proposed project.

Municipal Code Sections 22.56.2050–22.56.2260

There is the potential for protected oak trees to be present on or within the vicinity of the Castaic project area. Oak trees are typically found in oak woodlands and other indigenous woodlands, but may also be found in urban areas as planted trees. Therefore, this ordinance is relevant to the evaluation of conflicts of the proposed project with local general plans, policies, and ordinances.

Habitat Conservation Plans and Natural Community Conservation Plans

HCPs and NCCPs were evaluated to determine applicability of any adopted or proposed HCPs or NCCPS in the Castaic project area. The boundaries of all HCPs/NCCPs were reviewed and compared to the Castaic project area boundary to determine their relevance. There are no HCPs or NCCPs with boundaries that intersect the Castaic project area (Figure 11, *HCPs and NCCPs Present in the Vicinity of the Castaic Project Area*). Therefore, there are no HCPs or NCCPs with provisions applicable to the proposed project.

SIGNIFICANCE THRESHOLDS

The potential for trails constructed within the Castaic project area to result in impacts related to biological resources was analyzed in relation to the questions in Appendix G of the State CEQA Guidelines.[35] Trails constructed within the Castaic project area would be considered to have a significant impact to biological resources if the proposed project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

- Have a substantial adverse effect on any sensitive natural communities (e.g., riparian habitat, coastal sage scrub, oak woodlands, non-jurisdictional wetlands) identified in local or regional plans, policies, regulations or by CDFW or USFWS.

- Have a substantial adverse effect on federally or state protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, and drainages) or waters of the United States, as defined by § 404 of the federal Clean Water Act or California Fish & Game code § 1600, et seq. through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

- Convert oak woodlands (as defined by the state, oak woodlands are oak stands with greater than 10% canopy cover with oaks at least 5 inches in diameter measured at 4.5 feet above mean natural grade) or otherwise contain oak or other unique native trees (junipers, Joshuas, southern California black walnut, etc.).

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

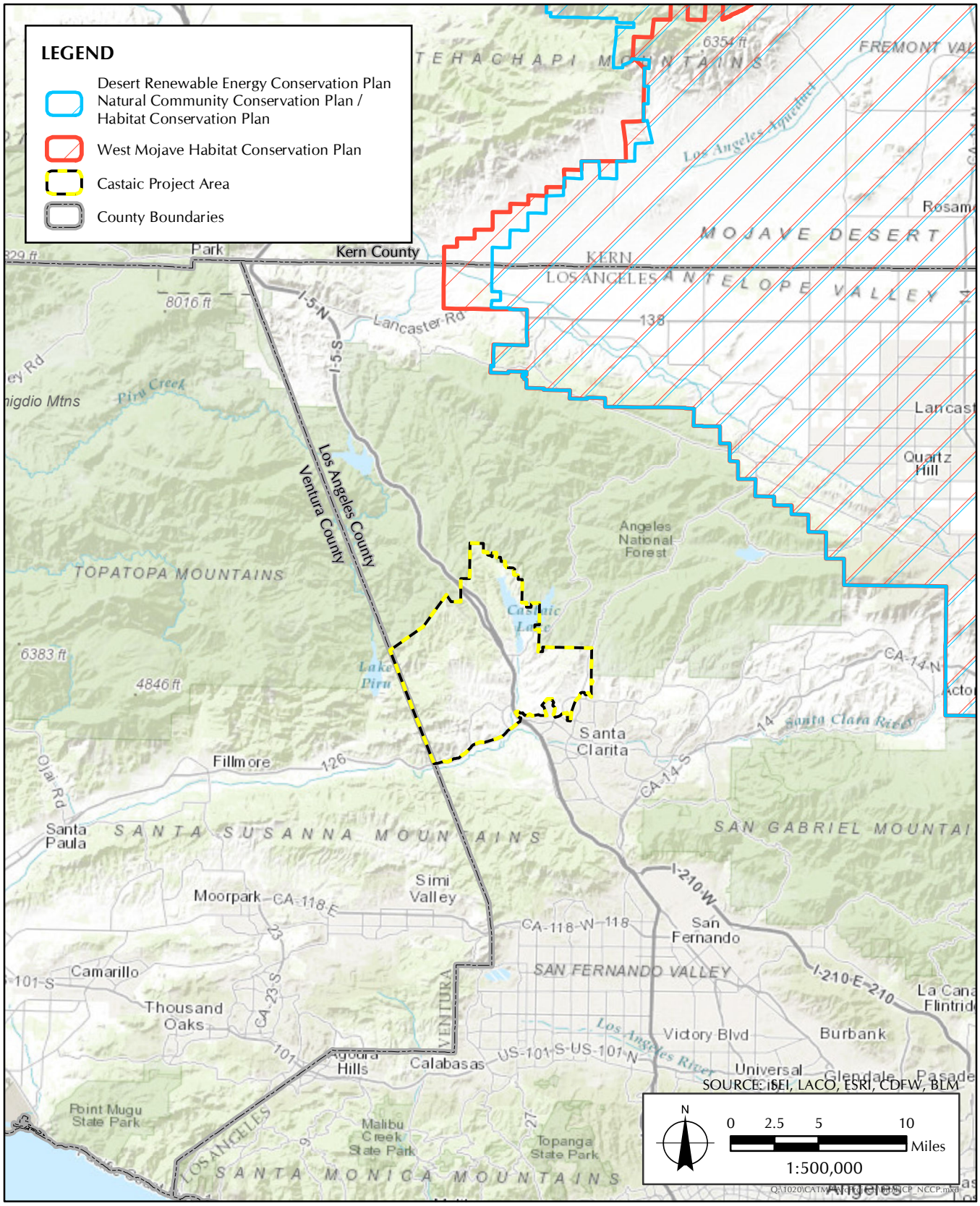

FIGURE 11

Habitat Conservation Plans and Natural Community Conservation Plans Present in the Vicinity of the Castaic Project Area

- Conflict with any local policies or ordinances protecting biological resources, including Wildflower Reserve Areas (L.A. County Code, Title 12, Ch. 12.36), the Los Angeles County Oak Tree Ordinance (L.A. County Code, Title 22, Ch. 22.56, Part 16), the SEAs (L.A. County Code, Title 22, § 22.56.215), and SERAs (L.A. County Code, Title 22, Ch. 22.44, Part 6).

- Conflict with the provisions of an adopted state, regional, or local habitat conservation plan.

IMPACT ANALYSIS

Proposed trail width within the proposed project varies between 3 and 12 feet. Therefore, spatial impact analysis for biological resources was based on a worst-case analysis using a maximum width of 12 feet and incorporating a 250-foot buffer to account for construction disturbances beyond the trail footprint.

Listed, Sensitive, and Locally Important Species

Approximately 191.5 acres of critical habitat for listed species (126.3 acres for arroyo toad, and 65.2 acres for southwestern willow flycatcher would be potentially be converted to trails and other recreation amenities or would be disturbed through associated construction activities as a result of the Castaic Trails Master Plan. Furthermore, there are CNDDB records and suitable habitat for the federally and state-listed endangered unarmored threespine stickleback, the CNPS rare plant slender mariposa lily, and sensitive wildlife species including western spadefoot, coast horned lizard, loggerhead shrike, and burrowing owl within 250 feet of the planned trail activities that may be disturbed through trail development and associated construction activities. Construction activities associated with trail development would include excavation, grading, and construction of trails and small structures at trailheads and trail staging areas. These construction activities have the potential to occur within areas of potentially suitable and occupied habitat for listed and special-status species. Direct impacts would occur during trail construction and would include direct loss of sensitive plant and/or wildlife species resulting from injury, death, or disturbance of these species. Additionally, direct impacts may occur through the direct habitat loss and fragmentation during construction of the trails and associated structures; introduction of non-native plants; and introduction of lighting, dust, and noise during construction. Further, indirect impacts resulting from the development of trails projects in the proposed project could occur as a result of increased human interaction with sensitive plants and wildlife.

This analysis of impacts of trails projects included in the proposed project to sensitive plant and wildlife species and their habitats and designated critical habitat is programmatic, and conservatively assumes that all species with critical habitat and/or CNDDB records in the Castaic project area are present. The level of impact of subsequent projects would be subject to verification at the project level of environmental review pursuant to CEQA. Trail development projects would be subject to the provisions of the federal and state ESA, as well as Sections 1900–1913, 3511, 4150, 4700, 5050, and 5515 of the State Fish and Game Code and Sections 80071–80075 of the State Food and Agriculture Code.

Therefore, the proposed project would result in significant impacts to biological resources in regard to having a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or

regulations, or by the CDFW or USFWS. Implementation of Mitigation Measure BIO-1 would reduce impacts to below the level of significance.

Riparian and State Sensitive Plant Communities

Approximately 308 acres of state designated sensitive plant communities (including 248 acres of riparian communities) would potentially be converted to trails and other recreation amenities or would be disturbed through associated construction activities as a result of the Castaic Trails Master Plan. Construction activities associated with trail development would include excavation, grading, and construction of trails and small structures at trailheads and trail staging areas. These construction activities have the potential to occur within sensitive natural communities on-site. Impacts associated with the disturbance of sensitive and riparian habitats would include direct loss and fragmentation of sensitive communities and riparian habitats as trails projects are developed and the introduction of non-native plants that would degrade existing communities. Further, indirect impacts resulting from the development of trails projects in the proposed project could occur as a result of increased public access to sensitive plant communities.

This analysis of impacts of trails projects included in the proposed project to sensitive plant communities and riparian habitats is programmatic, and conservatively assumes that sensitive plant communities have the potential to exist throughout the Castaic project area and that all waterways have the potential to contain riparian habitat. The level of impact of subsequent projects would be subject to verification at the project level of environmental review pursuant to CEQA. Trail development projects would be subject to the provisions of Section 1600 of the State Fish and Game Code in which a Streambed Alteration Agreement would need to be obtained prior to the alteration of a state jurisdictional area.

Therefore, the proposed project would result in significant impacts to biological resources in regard to having a substantial adverse effect on any sensitive natural communities identified in local or regional plans, policies, regulations, or by CDFW or USFWS. Implementation of Mitigation Measures BIO-1 and BIO-2 would reduce impacts to below the level of significance.

Federally Protected Wetlands and Waterways

Approximately 252 acres of riparian communities that may be under CDFW jurisdiction, 122.7 acres of federally protected wetlands, and 36.2 miles of blueline drainages that may include waters of the United States would potentially be converted to trails and other recreation amenities or would be disturbed through associated construction activities as a result of the Castaic Trails Master Plan. Construction activities associated with trail development would include excavation, grading, and construction of trails and small structures at trailheads and trail staging areas. These construction activities have the potential to occur within and adjacent to state and federal wetlands and or waters of the United States on-site. Impacts would include disruption of streams and wetlands as new trails are developed and dredge and fill activities associated with trail development. Trail development projects 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 U.S. Army Corps of Engineers pursuant to Section 404 of the Federal Clean Water Act. Trail development projects would also be subject to the provisions of Section 1600 of the State Fish and Game Code in which a Streambed Alteration Agreement would need to be obtained prior to the alteration of a state jurisdictional area.

Therefore, the proposed project would result in significant impacts to biological resources in regard to having a substantial adverse effect on federally or state protected wetlands or waters of the United States. Implementation of Mitigation Measures BIO-1 and BIO-2 would reduce impacts to below the level of significance.

Migratory Corridors and Nursery Sites

The Castaic project area is considered an important wildlife corridor as determined by the County General Plan (Appendix C). Within the County General Plan, the Santa Clara River and Santa Felicia SEAs are identified as important corridors for wildlife movement, linking the Santa Monica Mountains, the San Gabriel Mountains, and Piru Lake in Ventura County. Trails and passive recreation use are an allowable use within SEAs. Although trail use would not conflict with the goals of the SEA program, new trail construction within an SEA would require consultation with the County of Los Angeles Department of Regional Planning and a Biological Technical Report prepared for Significant Ecological Area Technical Advisory Committee (SEATAC) review. Furthermore, nesting birds protected under the Migratory Bird Treaty Act (MBTA) have the potential to be present throughout the Castaic project area.

Construction activities associated with trail development would include excavation, grading, and construction of trails and small structures at trailheads and trail staging areas. These construction activities have the potential to occur within areas used for native wildlife movement and within and adjacent to suitable nesting locations for native and migratory birds on-site. Impacts would include direct habitat removal that would disrupt nesting birds as new trails projects are developed, and introduction of lighting and noise during construction and operation that may interrupt wildlife movement and disturb nursery sites. Additionally, an increase in wildlife-human interactions as a result of the development of new trails projects may increase wildlife injury.

This analysis of impacts of trails projects included in the proposed project to wildlife corridors and nursery sites is programmatic, and conservatively assumes that wildlife movement areas and nesting birds may occur throughout the Castaic project area. The level of impact of subsequent projects would be subject to verification at the project level of environmental review pursuant to CEQA. Trail development projects would be subject to the provisions of the MBTA.

Therefore, the proposed project would result in significant impacts to biological resources in regard to interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impeding the use of native wildlife nursery sites. Implementation of Mitigation Measures BIO-1, BIO-2, and BIO-3 would reduce impacts to below the level of significance.

Oak and Native Woodlands

Approximately 123.1 acres of state designated Southern Coast Live Oak Riparian Forest and 128.8 acres of Southern Cottonwood Willow Riparian Forest would potentially be converted to trails and other recreation amenities or would be disturbed through associated construction activities as a result of the Castaic Trails Master Plan. Construction activities associated with trail development would include excavation, grading, and construction of trails and small structures at trailheads and trail staging areas. These construction activities have the potential to occur within oak and other native woodlands on-site or within the dripline of individual oak or other native trees. Impacts associated with the disturbance of oak and other native woodlands would include direct loss and

fragmentation of woodlands as trails projects are developed, and the introduction of non-native plants that would degrade existing woodlands.

Therefore, the proposed project would result in significant impacts to biological resources in regard to converting oak woodlands or woodlands otherwise containing oak or other unique native trees. Implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4 would reduce impacts to below the level of significance.

General Plans and Policies

The Castaic project area is not located within any Wildflower Reserve Areas or SERAs; therefore, it would not conflict with these policies. The Northlake Specific Plan does not contain any policies related to biological resources; therefore, the proposed project would not conflict with the policies of this plan. The proposed project would not result in significant impacts to biological resources related to conflicts with the County General Plan, Santa Clarita Valley Area Plan, or Newhall Ranch Specific Plan because trails and other recreation facilities are required to be designed consistent with the County Trails Manual, which requires no net loss of habitat functions and values.[36] The application of the County Trails Manual to the individual trails projects within the proposed project would accomplish the objectives within these plans of minimizing impacts to the natural environment. Furthermore, the implementation of the proposed project would be beneficial to biological resources because it would direct visitors to the Castaic project area to designated areas for use rather than permit disorganized use of the land without acknowledgement and protection of environmentally sensitive areas.

The proposed project would not conflict with Los Angeles County Municipal Code Title 22, § 22.56.215 – Significant Ecological Areas because trails and recreation facilities are an allowed use in SEAs, and any trails project under the proposed project would be required to comply with the SEATAC CUP application process. The proposed project would not conflict with Municipal Code Sections 22.56.2050–22.56.2260 – Oak Tree Ordinance because trails and recreation facilities would be designed to avoid the removal or disturbance of any protected oak tree, and any trails project under the proposed project would be required to comply with the Los Angeles County Oak Tree Removal Permit application process should tree removal be necessary. Therefore, the proposed project would result in no impacts in regard to conflicts with local policies or ordinances protecting biological resources, and no mitigation would be required.

Habitat Conservation Plans and Natural Community Conservation Plans

The proposed project would result in no impacts to biological resources in regard to conflicting with the provisions of an adopted state, regional, or local habitat conservation plan. There are no Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) with boundaries that intersect the Castaic project area. Therefore, the proposed project would result in no impacts related to conflicts with the provision of adopted state, regional, or local habitat conservation plans, and no mitigation would be required.

[36] County of Los Angeles Department of Parks and Recreation. Adopted by the Board of Supervisors on May 17, 2011. Revised June 2013. County of Los Angeles Trails Manual. Available at: https://trails.lacounty.gov/Files/Documents/69/LA%20County%20Trails%20Manual%20%28Revised%2006-20-13%29.compressed.pdf

MITIGATION RECOMMENDATIONS

The following mitigation measures shall be implemented, as applicable, for ground-disturbing activities associated with trail construction and/or improvements within the Castaic Area Multi-Use Trails Project. These measures, with proper implementation, will serve to avoid, minimize, or substantially reduce impacts to biological resources.

Mitigation Measure BIO-1: To mitigate potential impacts on listed, sensitive, and locally important species and their habitats, the County shall require that a habitat assessment by a qualified biologist take place using approved U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) protocols to identify suitable habitat for any listed, sensitive, and locally important species on-site. Where suitable and/or occupied habitat is determined to be present, mitigation shall be implemented such that there is no net loss of habitat functions or values. Opportunities for achieving this performance standard, consistent with the provisions of the federal and state Endangered Species Acts (ESAs), may include:

- Demonstration that trail segment projects have been and will be designed, constructed, and maintained to avoid disturbance of any occupied habitat, potentially suitable habitat, and designated critical habitat for any listed, sensitive, or locally important species and to minimize impacts to native plant communities, wherever practicable and feasible.
- Consultation with USFWS and CDFW with regards to trail building activities within critical habitat and suitable habitat.
- Implementation of pre-construction habitat surveys to delineate occupied or suitable sensitive species' habitat to facilitate avoidance.
- Formal consultation with the USFWS will be required if a species afforded protection pursuant to the federal ESA is determined to be present as a result of focused protocol surveys. Formal consultation with the CDFW will be required if a species afforded protection pursuant to the state ESA is determined to be present as a result of focused protocol surveys.
- Altering the timing of construction to avoid seasons when sensitive species may be present (i.e., nesting bird season).
- Worker Education and Awareness Program to inform all construction workers of their responsibilities in regards to avoiding and minimizing impacts on sensitive biological resources.
- Designation of suitable habitat as off-limits during construction on all construction drawings and diagrams.
- Use of fencing and/or flagging to delineate environmentally sensitive areas as off-limits during trail construction.
- Use of on-site monitors for periods when trail construction will be undertaken within 250 feet of environmentally sensitive areas.
- Where temporary impacts to critical habitat may occur, the development and implementation of a habitat restoration plan shall be required.

Where permanent impacts to critical habitat may occur, compensatory mitigation such as purchasing credits at a mitigation bank, purchasing off-site lands, or similar shall be required.

Mitigation Measure BIO-2: To mitigate potential impacts on riparian, state-sensitive plant communities, state protected wetlands, and federally protected wetlands and waters of the United States, the County shall require that plant community mapping be conducted by a qualified biologist with experience classifying plant communities in Southern California and/or a formal jurisdictional delineation be conducted by a certified wetland delineator to identify any state or federally protected wetlands, riparian areas, and state-sensitive plant communities on-site. Where state designated sensitive plant communities, riparian habitat, state or federally protected wetlands, or waters of the United States are determined to be present, mitigation measures shall be implemented such that there is no net loss of habitat functions or values. Opportunities for achieving this performance standard, consistent with the provisions of Section 1600 of the State Fish and Game Code and Section 404 of the Federal Clean Water Act, may include:

- Demonstration that trail segment projects have been and will be designed, constructed, and maintained to avoid disturbance of any state-sensitive plant communities or riparian habitat, or any state or federally protected wetlands or waters of the United States wherever practicable and feasible.
- Conduct pre-construction habitat surveys to delineate sensitive plant communities and riparian habitats to facilitate avoidance.
- Consult with CDFW with regards to trail building activities within state-sensitive plant communities.
- Use of on-site monitors for periods when trail construction will be undertaken within 250 feet of oak woodlands, native woodlands, and 100 feet of the dripline of native trees.
- Where temporary impacts may occur to sensitive plant communities, the development and implementation of a habitat enhancement and restoration plan shall be required.
- Where permanent impacts may occur to sensitive plant communities, compensatory mitigation such as purchasing credits at mitigation bank, purchasing off-site lands, or similar shall be required.
- Where impacts are located in areas subject to the jurisdiction of the CDFW pursuant to Section 1600 of the State Fish and Game Code, obtain a Streambed Alteration Agreement prior to commencing ground-disturbing activities or any other alternation of a lake or stream.
- Where impacts are located in areas subject to the jurisdiction of the U.S. Army Corps of Engineers pursuant to Section 404 of the Federal Clean Water Act, obtain authorization to complete the required work pursuant to a Nationwide or individual permit.
- Where impacts are subject to the jurisdiction of the Regional Water Quality Control Board, obtain a Waiver of Water Quality Certification or Notice of Applicability of Waste Discharge Requirement permit.

Mitigation Measure BIO-3: To avoid impacts to nesting birds protected under the Migratory Bird Treaty Act (MBTA), trail construction should take place outside of the nesting bird season, which generally occurs between February 15 and September 1. If trail construction activities cannot avoid the nesting bird season, pre-construction nesting bird surveys shall be conducted by a qualified biologist a maximum of three days prior to the start of construction. Should nesting birds be discovered within or adjacent to the construction footprint during these surveys, a non-disturbance buffer shall be placed on the active nest as determined by the biologist to prevent impacts to nesting birds. Construction shall be halted within the non-disturbance buffer of 250 feet of

songbirds and 500 feet for raptors until the biologist has determined that the young have fledged and are flying well enough to avoid the proposed construction activities.

Mitigation Measure BIO-4: To mitigate potential impacts on oak and other native woodlands, the County shall require that for every protected tree that must be removed, the same species shall be replaced at a minimum of a 1:1 ratio. Compensatory mitigation for protected trees in the jurisdiction of the County may include replacement at a 3:1 ratio for trees with a diameter at breast height (DBH) of eight inches or more at an appropriate mitigation site, and replacement at a 10:1 ratio for heritage oaks. Monitoring for at least one year would be required to meet success criteria.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of mitigation measures BIO-1 through BIO-4 would reduce impacts to biological resources related to an substantial adverse effect on listed, sensitive, and locally important species, riparian and state sensitive plant communities, federally protected wetlands and waterways, migratory corridors and nursery sites, and oak and native woodlands to below the level of significance.

Should there be any questions regarding the information contained in this MFR, please contact Mr. Ryan Villanueva at (626) 683-3547, extension 115.

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