Chapter 4: Environmental Setting

4.0 Environmental and Regulatory Setting[1,2,3]

4.1 General Environmental Setting

The northerly portion of the proposed Lake-Case Springs transmission alignment, as well as the Lake Switchyard, Santa Rosa Substation , and certain hydroelectric facility component of the Applicant's Proposed Project (Project) are located within the San Jacinto and Santa Ana River watersheds. Other associated structures, facilities, and transmission and subtransmission lines are located in adjacent watersheds, including San Juan and San Mateo Creeks, the Santa Margarita and San Luis Rey Rivers, and Escondido Creek. The San Jacinto River watershed covers more than 780 square miles of widely varying terrain. The basin is bounded by the Santa Ana Mountains (including the Elsinore Mountains, Santa Margarita, and the Santa Rosa Plateau) to the west and the more distant San Jacinto Mountains to the east and drains into Lake Elsinore (a naturally occurring graben lake). The Santa Ana River is the largest stream system in southern California. The Santa Ana River Basin covers an area of about 2,700 square miles in parts of Orange, San Bernardino, Riverside, and Los Angeles Counties.

Lake Elsinore is a natural low point in the San Jacinto River basin; it does not connect with the Santa Ana River in normal rainfall conditions. In high precipitation and runoff years, the San Jacinto River flows through Lake Elsinore to the Santa Ana River via Temescal Wash, a natural drainage system that extends about 28 miles from Lake Elsinore to the Santa Ana River, which eventually drains to the Pacific Ocean. Most of the river basin comprises chaparral vegetation and farming/ranching type land uses with increasing urban/residential and commercial land uses close to Lake Elsinore. Most of the mountain ranges are forested with major land uses including recreation, conservation, and residential housing. Traveling westward toward the coast, land uses generally become predominately urban.

Lake Elsinore is easily accessible via the Interstate 15 (I-15) Freeway. State Route 74 (SR-74 or Ortega Highway) connects the City of San Juan Capistrano (Orange County) to the I-15 (Corona or Escondido) Freeway on the east side of the Santa Ana Mountains (Riverside County).

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[1]/ Information concerning State and Federal statutes, regulations, ordinances rules, policies, plans, and standards that have application or potential application to the Project are identified herein. Based on the size (linear length) of the Project, except where noted, local ordinances have not been specifically addressed herein since the Project traverse multiple local jurisdictions. The referenced statutes, regulations, ordinances rules, policies, plans, and standards are derived, in part, from the following reference documents: "California Energy Commission – Power Plant Certification Process Laws, Ordinances, Regulations, and Standards" (California Energy Commission, November 9, 2004); "Caltrans Environmental Handbook – Volume 1: Guidance for Compliance" (California Department of Transportation, January 2006); and "Caltrans Environmental Handbook – Volume 3: Biological Resources" (California Department of Transportation, January 2006).

[2]/ In the context of this document, it is not possible to be inclusive of all statutes, regulations, ordinances, rules, policies, plans, and standards that have application or potential application to the Project. The statutes, regulations, ordinances, rules, policies, plans, and standards cited herein are, therefore, not intended to be either comprehensive or inclusive of all such policies that may be applicable to the Project. The information is, however, intended to indicate that public policies are already in place and, unless otherwise exempt, the Applicant is required to fully comply with all applicable local, State, and Federal requirements, such that specified compliances does not constitute a separate mitigation measure or condition of approval under CEQA. Since statutes, regulations, rules, policies, plans, and standards may change over time, the information presented is neither intended to limit the discussion of the Project's statutory and regulatory setting nor foreclose the consideration of other applicable statutes, regulations, rules, policies, plans, and standards that could have potential application, either directly or indirectly, to the Project and its potential environmental effects. The material presented is provided for informational purposes only and does not constitute a legal opinion as to the interpretation and/or application of the statutes, regulations, rules, policies, plans, standards, and court cases so cited. Questions regarding the interpretation and/or application of the information cited should be directed to independent legal counsel.

[3]/ Certain information presented herein is provided for informational purposes only. The inclusion of any such material is not intended to alter or otherwise modify the jurisdiction of any agency with regards to the Project or to suggest any Project-related obligation with respect thereto.

The general Project area typically experiences warm, dry summers and mild, wet winters. The general climate is characterized as Mediterranean, with a mean annual temperature of 64 degrees (°) Fahrenheit (F). Most precipitation occurs during winter months with a mean annual precipitation of 11.7 inches. Precipitation increases sharply with rising elevations in the Santa Ana Mountains, such that the seasonal mean precipitation is about 25 inches only 1.5 miles from the shore of Lake Elsinore. Air quality in the area is good, and the area experiences a generally moderate eastward wind and weather pattern flow.

4.2 General Regulatory Setting

As indicated in the Applicant's "Initial Stage Consultation Document" (ISCD): "This ISCD may serve to become the description of the "affected environment" in any resulting NEPA/CEQA documents, thus allowing future studies to more closely focus on project impacts, alternatives, and mitigation measures."[4] As further noted in the Applicant's "Final Application for License of Major Unconstructed Project, Lake Elsinore Advanced Pumped Storage Project, Federal Energy Regulatory Commission, Project Number 11858" (FLA) the information presented in the FLA will be used by the CEQA Lead Agency" in fulfillment of "Federal (NEPA) and State (CEQA) environmental obligations."[5] Specifically, Exhibit E (Environmental Report) in the FLA contains an extensive discussion of the existing environmental and State and Federal regulatory setting.[6] Both the ISCD and FLA are incorporated by reference herein.

The "Final Environmental Impact Statement for Hydropower License – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858" (FEIS) and "Final Environmental Impact Report/Environmental Impact Statement and Proposed Land Use Amendment – San Diego Gas & Electric Company Application for the Sunrise Powerlink Project, SCH No. 2006091071, DOI Control No. DES-07-58" (Sunrise FEIR/FEIS), inclusive of their environmental review records, provide additional supportable background information concerning the Project's existing environmental and regulatory setting.

As indicated in the FEIS, the EVMWD "has the opportunity to use this document, as appropriate, to satisfy its responsibilities under CEQA."[7] The information presented herein is not intended to conflict with that presented in the FEIS and/or Sunrise FEIR/FEIS with regard to the description of the TE/VS Interconnect and LEAPS or the description of the existing environmental and regulatory setting presented associated therewith or located therein.

Information concerning relevant laws, regulations, agreements, and other management direction applicable to the United States Department of Agriculture – Forest Service (USDA Forest Service) and germane to National Forest System (NFS) lands is contained in the USDA Forest

[4]/ Elsinore Valley Municipal Water District and The Nevada Hydro Company, Inc., Initial Stage Consultation Document – Lake Elsinore Advanced Pumped Storage Project, Federal Energy Regulatory Commission, Project Number 11858, April 2001, p. 21.

[5]/ Elsinore Valley Municipal Water District and The Nevada Hydro Company, Inc., Final Application for License of Major Unconstructed Project, Lake Elsinore Advanced Pumped Storage Project, Federal Energy Regulatory Commission, Project Number 11858, February 2004, p. E.1-1.

[6]/ As defined in Title 18, Section 380.2(f) of the Code of Federal Regulations (CFR), the "[e]nvironmental report or ER means that part of an application submitted to the [Federal Energy Regulatory] Commission by an applicant for authorization of a proposed action which includes information concerning the environment, the applicant's analysis of the environmental impact of the action, or alternatives to the action required by this or other applicable statutes or regulations."

[7]/ Federal Energy Regulatory Commission, Final Environmental Impact Statement for Hydropower License – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, FERC/EIS-0191F, January 2007, p. 1-10.

Service's 3-volume "Land Management Plan – Cleveland National Forest"[8] (Forest Plan) and 2-volume "Final Environmental Impact Statement for Revised Land Management Plans: Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest, R5-MB-085"[9] (Forest Plan FEIS).

Additional information concerning the existing environmental and regulatory setting is contained in the following documents: (1) "Final Program Environmental Impact Report, Riverside County General Plan Update, EIR No. 441, State Clearinghouse No. 2002051143"[10]; (2) "Final Program Environmental Impact Report – Lake Elsinore Stabilization and Enhancement Project, SCH No. 2001071042"[11]; (3) "Final Environmental Impact Report/ Environmental Impact Statement - Western Riverside County Multi-Species Habitat Conservation Plan, SCH No. 2001101108"[12]; (4) "Intra-Service Formal Section 7 Consultation/ Conference for Issuance of an Endangered Species Act Section 10(a)(1)(B) Permit (TE-088609-0) for the Western Riverside County Multiple Species Habitat Conservation Plan, Riverside County, California"[13]; (5) "Integrated Natural Resources Management Plan – Marine Corps Base and Marine Corps Air Station, Camp Pendleton"[14]; (6) "Final Fisheries Management Plan for Lake Elsinore, Riverside County, California"[15]; and (7) those documents incorporated herein by reference and made a part of this EIR, pursuant to the authorization contained in Section 15150 in Title 14 of the California Code of Regulations (State CEQA Guidelines).

Information concerning the existing environmental setting within and proximal to the SDG&E existing Talega-Escondido transmission line, at and near the Talega and Escondido Substations, and within the United States Marine Corps (USMC) Camp Joseph H. Pendleton (Camp Pendleton) is contained in the following additional environmental documents: (1) SDG&E's "Valley-Rainbow Interconnect Proponent's Environmental Assessment"[16]; (2) SDG&E's "Proponent's Environmental Assessment for Replacement of the SONGS 2 & 3 Steam Generators"[17]; and (3) the CPUC's "Final Environmental Impact Report – San Onofre Nuclear

[8]/ United States Department of Agriculture, Forest Service, Part 1 Southern California National Forests Visions: Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest, R5-MB-075, September 2005; United States Department of Agriculture, Forest Service, Land Management Plan: Part 2 – Cleveland National Forest Strategy, R5-MB-077, September 2005; and United States Department of Agriculture, Forest Service, Land Management Plan: Part 3 – Design Criteria for the Southern California National Forests, Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest, R5-MB-080, September 2005.

[9]/ United States Department of Agriculture, Forest Service, Final Environmental Impact Statement, Volume I - Land Management Plans: Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest, R5-MB-074A, September 2005; United States Forest Service, Final Environmental Impact Statement, Volume 2 (Appendices) - Revised Land Management Plans: Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest, R5-MB-074B, September 2005.

[10]/ County of Riverside, Final Program Environmental Impact Report, Riverside County General Plan Update, EIR No. 441, State Clearinghouse No. 2002051143, certified October 7, 2003.

[11]/ Lake Elsinore and San Jacinto Watershed Authority, Final Program Environmental Impact Report – Lake Elsinore Stabilization and Enhancement Project, SCH No. 2001071042, September 2005.

[12]/ County of Riverside and United States Fish and Wildlife Service, Final Environmental Impact Report/ Environmental Impact Statement - Western Riverside County Multi-Species Habitat Conservation Plan, SCH No. 2001101108, certified June 17, 2003.

[13]/ United States Fish and Wildlife Service, Intra-Service Formal Section 7 Consultation/ Conference for Issuance of an Endangered Species Act Section 10(a)(1)(B) Permit (TE-088609-0) for the Western Riverside County Multiple Species Habitat Conservation Plan, Riverside County, California, June 22, 2004.

[14]/ United States Marine Corps, Integrated Natural Resources Management Plan – Marine Corps Base and Marine Corps Air Station, Camp Pendleton, October 2001.

[15]/ Lake Elsinore and San Jacinto Watersheds Authority, Final Fisheries Management Plan for Lake Elsinore, Riverside County, California, August 2005.

[16]/ San Diego Gas & Electric Company (KEA Associates), Valley-Rainbow Interconnect Proponent's Environmental Assessment, March 2001.

[17]/ Southern California Edison (URS Corporation), Proponent's Environmental Assessment for Replacement of the SONGS 2 & 3 Steam Generators, February 2004.

Generating Station Steam Generator Replacement Project, SCH No. 2004101008."[18] Additional information concerning the environmental characteristics and the potential impacts associated with the operation of the State's electrical generation system is contained in the CEC's "2005 Environmental Performance Report of California's Electrical Generation System, Staff Report, CEC-700-2005-016," including its technical appendices. The following information supplement that presented in each of the above referenced documents.

4.3 Aesthetics

Since improvements and associated upgrades to Southern California Edision Company's (SCE) existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations, and existing Etiwanda Generating Station and San Diego Gas and Electric Company's (SDG&E) existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites, those locations are not further addressed herein. Additionally, since proposed underground facilities will not produce an apparent visual impact, underground Project facilities are not further addressed herein.

4.3.1 Aesthetics Environmental Setting[19]

The Lake Elsinore area lies on the eastern edge of the Elsinore Mountains, the southern extension of the Santa Ana Mountain range in southern California. These mountains rise above the coastal foothills east of the cities of Mission Viejo and San Juan Capistrano, reaching a peak of 3,500 feet (Elsinore Peak) near the Project and then abruptly descending to Lake Elsinore (long-term lake elevation between 1240-1249 feet above mean sea level [msl]), a depression in the geologic landscape between the Santa Ana-Elsinore coastal range and the inland hills (Figure 4.3.1-1). The landscape character of this area can be characterized by two general descriptions: The mountainous zone and the Lake Elsinore zone.

Aerial photographs of proposed new facility sites (Lake Switchyard, Lake Elsinore, Santa Rosa Substation, LEAPS Powerhouse, Decker Canyon Reservoir, and Case Springs Substation), as well as SDG&E's existing Talega Substation (33000 Avenida Pico, San Clemente, San Diego County) and Escondido Substation (2037 Mission Avenue, Escondido, San Diego County) and SCE's existing Valley Substation (Menifee Road and Highway 74, Romoland, Riverside County) and Serrano Substation (East Carver Lane, Orange, Orange County), are presented in Figure 4.3-1-2 (Aerial Photographs).

The "mountain zone," the majority of which consists of NFS lands, provide a natural area with limited development surrounded by densely populated, urbanized areas. The mountainous landscape of ridges cut by intermittent streams is covered mostly with chaparral vegetation, and the low-lying streambed areas are populated with riparian and oak woodland type communities. The short wet season followed by a lengthy warm and dry season dictate the colors and textures of the plants and hillsides within the mountainous zone.

[18]/ California Public Utilities Commission, Final Environmental Impact Report – San Onofre Nuclear Generating Station Steam Generator Replacement Project, SCH No. 2004101008, September 2005.

[19]/ The existing environment is dynamic and subject to change. The information presented herein is, to the best of the Applicant's knowledge, accurate as to the time of its writing. Future conditions may differ from those described herein.

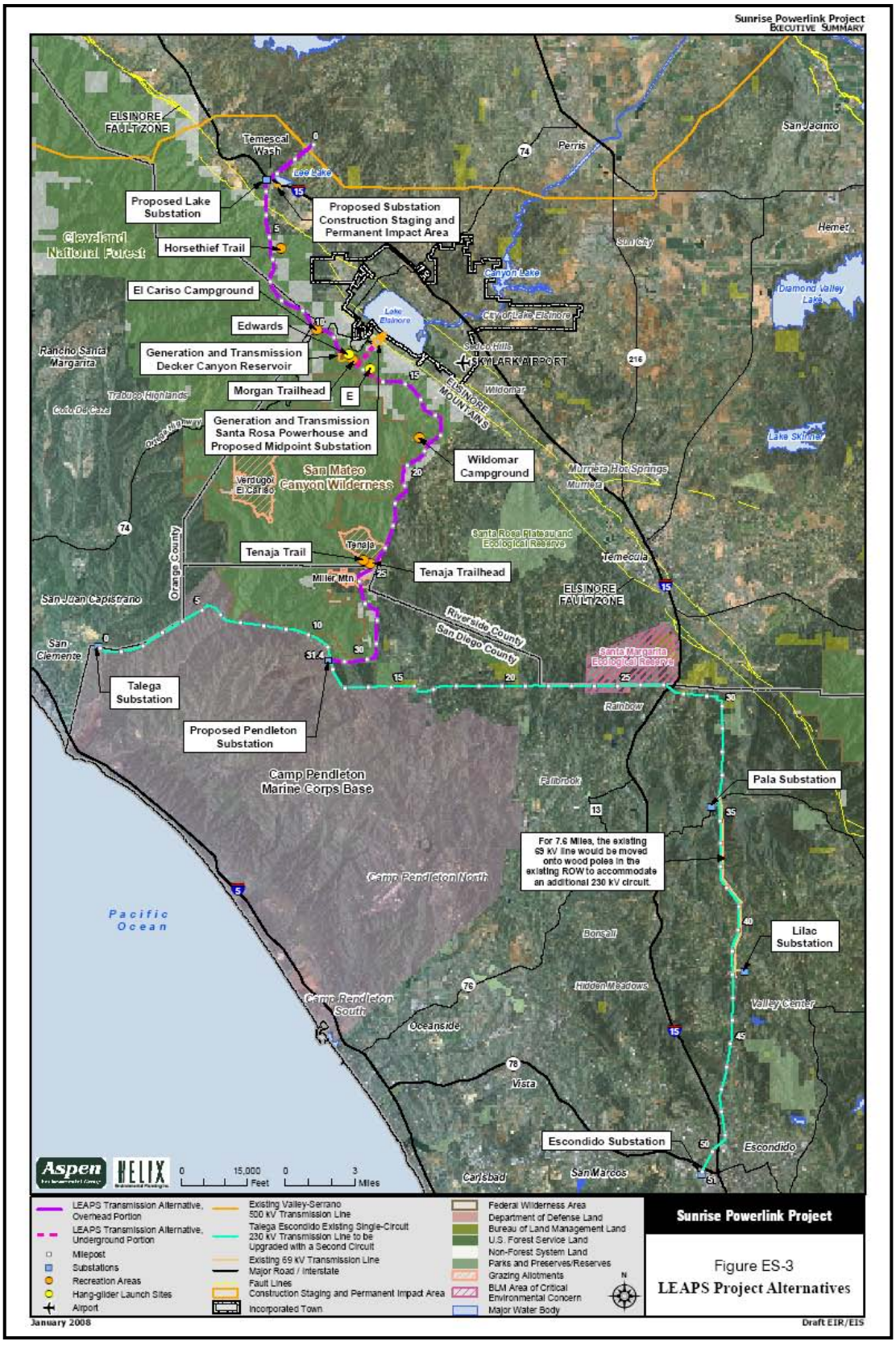

Figure 4.3.1-1. Regional Vicinity Map
Source: California Public Utilities Commission (Aspen Environmental Group)

Figure 4.3.1-2. Aerial Photographs (1 of 6)
Proposed Lake Switchyard and Vicinity
Source: Natural Resource Conservation Service

Figure 4.3.1-2. Aerial Photographs (2 of 6)
Proposed LEAPS Lower Reservoir (Lake Elsinore) and Vicinity
Source: Natural Resource Conservation Service

Figure 4.3.1-2. Aerial Photographs (3 of 6)
Proposed Santa Rosa Substation and LEAPS Powerhouse and Vicinity
Source: Natural Resource Conservation Service

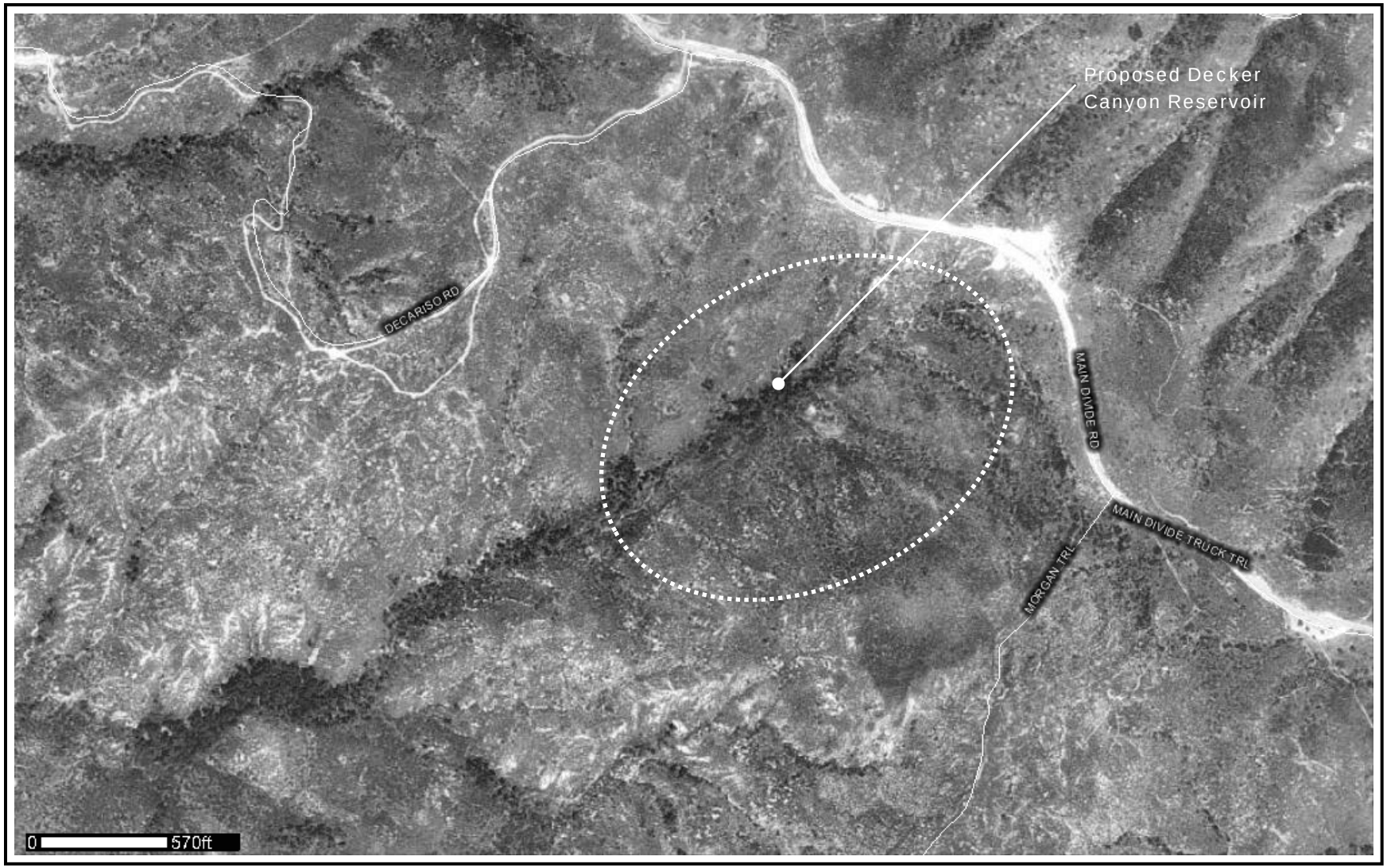

Figure 4.3.1-2. Aerial Photographs (4 of 6)
Proposed Decker Canyon Reservoir and Vicinity
Source: Natural Resource Conservation Service

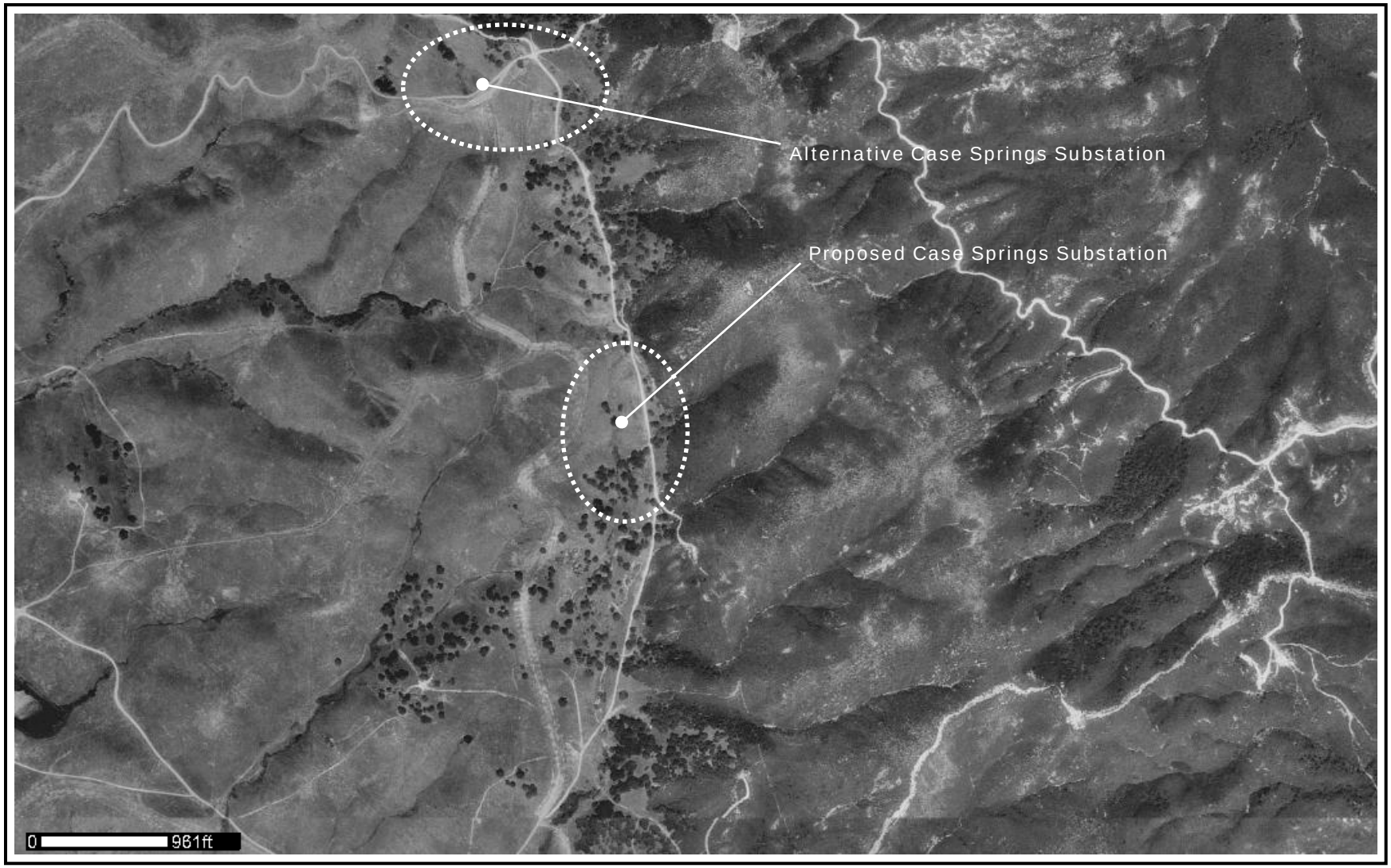

Figure 4.3.1-2. Aerial Photographs (5 of 6)
Proposed and Alternative Case Springs Substation and Vicinity
Source: Natural Resource Conservation Service

Figure 4.3.1-2. Aerial Photographs (6 of 6)
Talgega, Escondido, Serrano, and Valley Substations and Vicinities
Sources: SDG&E and Google Earth

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Existing residences located along and tributary to South Main Divide Road are generally hidden from public view. Throughout the mountainous zone, intermittent streams, occasional springs, exposed rock outcrops, spring wildflowers, pockets of oak-pine woodland, and dense chaparral are common. Colors in this area vary from tans, browns, golds, grays and dull greens in the summer to bright greens and patches of flowers in the late winter/early spring mixed with the sandstone hardscape. The proposed Lake-Case Springs transmission alignment and the proposed Decker Canyon Reservoirwould generally be within this zone.

The "lake zone" comprises the areas around Lake Elsinore, including the unincorporated area of Lakeland Village (Cleveland Ridge), situated along the I-15 Freeway corridor and between the I-15 Freeway to the north and east and the "mountain zone" to the south and west. The local landscape is characterized by residential, commercial, some light industrial and mining operations surrounding Lake Elsinore, interspersed with patches of non-native grasslands and bare ground. Light colored buildings, darker asphalt roadways, and planted landscapes are major elements in the urban color scheme and texture typical of southern California, although the overall color scheme highlights the neutral colors (e.g., beige, tan, sandstones, some greens, and interspersed red tile). The larger viewscape from this zone includes the east slope of the Santa Ana and Elsinore Mountains up to the ridgeline of the "mountain zone." The mountains are the dominant feature of the distant visual landscape while Lake Elsinore, where visible, is the dominant feature of this visual landscape. At times from the "lake zone," both the lake and mountains are visible, making for a striking aesthetic setting of the steep mountains descending into Lake Elsinore. The proposed Santa Rosa Substation, LEAPS Powerhouse, lower reservoir (afterbay) and subtransmission improvments would be within this zone.

USDA Forest Service Scenery Management System

The USDA Forest Service's "Scenery Management System" provides a framework for the inventory and analysis of the aesthetic values on NFS lands and is a tool for integrating the benefits, values, desires, and preferences regarding aesthetics and scenery for all levels of land management planning. Scenic Integrity Objectives (SIOs) have been designated for all areas of the National Forest (Figure 4.3.1-3). At the project level, National Forest activities are subject to review of the SIOs. SIOs are the objectives that define the minimum level to which landscapes are to be managed from an aesthetics standpoint. The Forest Plan assigns the following five SIOs to lands within the CNF: "Very High," "High," "Moderate," "Low," and "Very Low."

The SIOs that most directly apply to the Project area are described in Table 4.3.1-1 (Description of Scenic Integrity Objective Designations for National Forest Lands). The locations of the various SIO designations for lands within the Project area are shown in Figure 4.3.1-3 (Trabuco Ranger District Scenic Integrity Objectives) and Figure 4.3.1-4 (Trabuco Ranger District Scenic Integrity Objectives – Lake-Case Springs Transmission Alignment).

The USDA Forest Service's SIOs for those NFS lands upon which Project facilities are proposed are primarily designated "High." Segments of the proposed Lake-Case Springs transmission line traverses areas designed "Very High" and "Moderate."[20] Table 4.3.1-2 (Scenic Integrity Objective Designations within the Project Area) identifies the SIOs by Project facility.

[20]/ The following definitions are presented in the Forest Plan: (1) "Very High Scenic Integrity: " This classification generally provides for ecological changes only. This refers to landscapes where the valued (desired) landscape character is intact with only minute, if any, deviations.

Table 4.3.1-1. Description of Scenic Integrity Objective Designations for National Forest Lands

SIO Designation	Definition
Very High	This classification generally provides for ecological changes only. This refers to landscapes where the valued (desired) landscape character is intact with only minute, if any, deviations. The existing landscape character and sense of place is expressed at the highest possible level. The landscape is unaltered. This is synonymous with the Preservation Visual Quality Objective under the original Visual Management Plan.
High	This classification provides for conditions where human conditions are not visually evident. This refers to the valued (desired) landscape character "appears" intact. Deviations may be present but must repeat form, line, color, texture, pattern, and scale common to the characteristic landscape. The landscape appears unaltered. This is synonymous with the Retention Visual Quality Objective under the original Visual Management System.
Moderate	This classification refers to landscapes where the valued (desired) landscape characters "appears slightly altered." Noticeable deviations must remain subordinate to the landscape character being viewed. The landscape appears slightly altered. This is synonymous with the Partial Retention Visual Quality Objective under the original Visual Management System.
Low	This classification refers to landscapes where the valued (desired) landscape characters "appears moderately altered." Deviations begin to dominate the valued landscape character being viewed, but they borrow valued attributes such as size, shape, edge, effect, and pattern of natural openings, vegetative-type changes or architectural styles outside the landscape being viewed. Deviations must be shaped and blended with the natural terrain (landforms) so that elements such as unnatural edges, roads, landings, and structures do not dominate the composition. The landscape appears moderately altered. This is synonymous with the Modification Visual Quality Objective under the original Visual Management System.

Source: USDA Forest Service

Table 4.3.1-2. Scenic Integriy Objective Designations within the Project Area

Project Facilities	SIO Designation
Decker Canyon Reservoir	The SIO for Decker Canyon aea is "High." The San Mateo Canyon Wilderness is "Very High."
Lake-Case Springs Transmission Lines	Within the National Forest, the SIOs for those lands on which the Northern (Lake-Santa Rosa) segment of the proposed 500-kV transmission alignment would cross NFS lands are designated "High." Lands on which the Southern (Santa Rosa-Case Springs) segment of the proposed 500-kV transmission line would cross lands designated both "High" and "Moderate." Lands designated as "Moderate" represent about 2 to 3 percent of the right-of-way.
Santa Rosa Substation LEAPS Powerhouse	The proposed Santa Rosa Substation and LEAPS Powerhouse sites are located on private lands located with in the National Forest and are, therefore, outside the USDA Forest Service jurisdiction and with regards to SIOs.

Source: The Nevada Hydro Company

In addition to the SIOs, the Forest Plan emphasizes place-based programs and goals and considers visual character and quality of an area as key attributes. A portion of the Project would be located within "Elsinore Place," described in the Forest Plan as "one of the most visible landscapes on the national forest and is maintained as an undeveloped island in the rapidly developing southern Riverside County and a natural appearing urban backdrop to the Interstate 15 corridor. The valued landscape attributes to be preserved over time are the undeveloped quality and character of the urban backdrop, including the natural appearing skyline silhouette of the Santa Ana Mountains, and the scenic integrity of areas visible from the Interstate 15 and Ortega Highway corridors."

The existing landscape character and sense of place is expressed at the highest possible level. The landscape is unaltered. This is synonymous with the Preservation Visual Quality Objective under the original Visual Management System" (Part 3, p. 118); (2) "High Scenic Integrity: This classification provides for conditions where human activities are not visually evident. This refers to landscapes where the valued (desired) landscape character 'appears' intact. Deviations may be present but must repeat the form, line, color, texture, pattern, and scale common to the landscape character. The landscape appears unaltered. This is synonymous with the Retention Visual Quality Objective under the original Visual Management System" (Part 3, p. 98); and (3) "Moderate Scenic Integrity: The classification refers to landscapes where the valued (desired) landscape character 'appears slightly altered.' Noticeable deviations must remain subordinate to the landscape character being viewed. The landscape appears slightly altered. This is synonymous with the Partial Retention Visual Quality Objective under the original Visual Management System" (Part 3, p. 104).

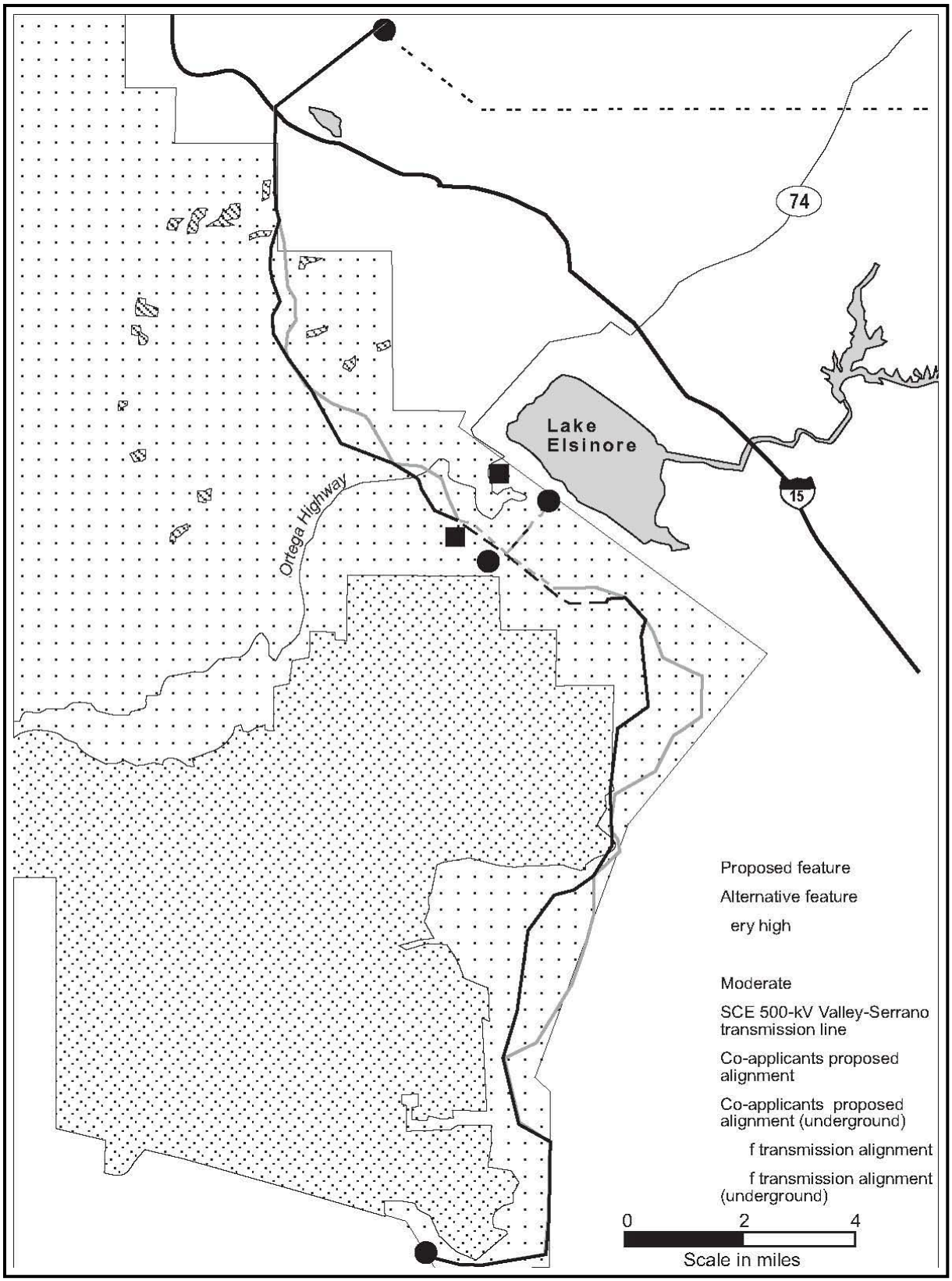

Figure 4.3.1-3. Trabuco Ranger District Scenic Integrity Objectives
Source: USDA Forest Service

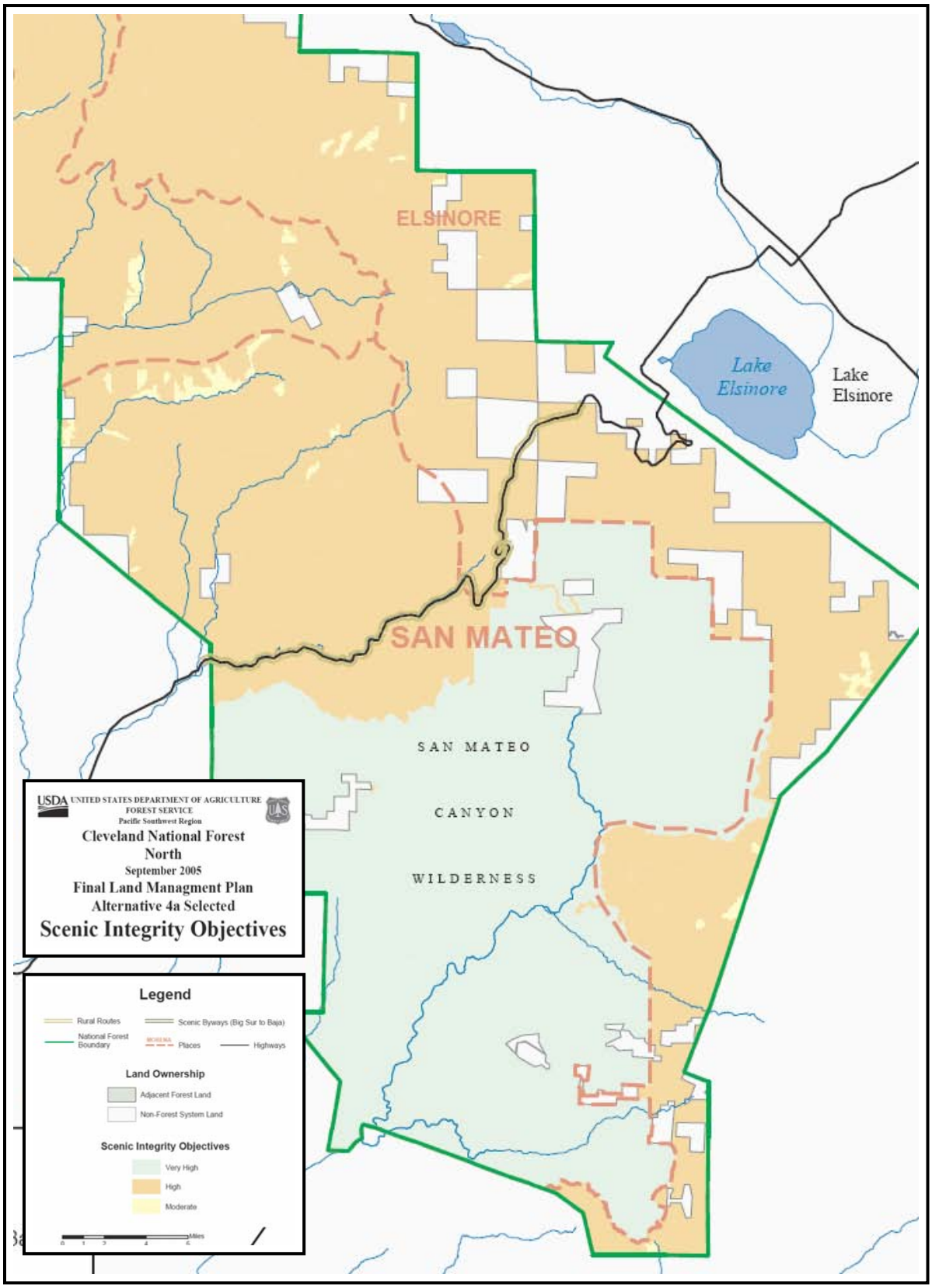

Figure 4.3.1-4. Trabuco Ranger District Scenic Integrity Objectives
Lake-Case Springs Transmission Alignment
Source: USDA Forest Service, as modified

SIOs constitute the "objectives that define the minimum level to which landscapes are to be managed from an aesthetic standpoint."[21] As further indicated in the Forest Plan, the following aesthetic management standards have been identified: (1) "Design management activities to meet the Scenic Integrity Objectives (SIOs) shown on the Scenic Integrity Objectives Map"; and (2) Scenic Integrity Objectives will be meet with the following exceptions: [a] Minor adjustments not to exceed a drop of one SIO level is allowable with the Forest Supervisor's approval; [b] Temporary drops of more than one SIO level may be made during and immediately following project implementation provided they do not exceed three years in duration."[22]

BLM Visual Resource Management System

Because a short portion (less than 3 percent of the total line length) of the proposed transmission alignment would cross public land managed by BLM, a separate set of visual resource objectives may be used to evaluate aesthetic resources on BLM lands. BLM's visual resource objectives are set forth in the "Visual Resource Management Program," which evaluates the quality of existing scenery by accounting for the distance from which scenery is viewed and peoples' sensitivity to changes in the landscape. The seven "key factors" used in the BLM rating procedure are landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. Table 4.3.1-3 (BLM Scenic Quality Scoring and Evaluation Criteria) identifies those factors and shows the assigned scores for the various areas of potential effect under the Project, as derived from the use of BLM's inventory/evaluation criteria.

Table 4.3.1-3 BLM Scenic Quality Scoring and Evaluation Criteria

BLM Indicator	Scoring and Evaluation Criteria		
Landform	5: High vertical relief (e.g., prominent cliffs, spires or massive rock outcrops) or severe surface variation or highly eroded formation including major badlands or dune systems, or detailed features, dominant and exceptionally striking and intriguing (e.g. glaciers).	3: Steep canyons, mesas, buttes, cinder cones and drumlins; or interesting erosional patterns or variety in size and shape of land forms, or detail features present and interesting though not dominant or exceptions.	1: Low rolling hills, foothills or flat valley bottoms. Interesting, detailed landscape features few or lacking.
Vegetation	5: A variety of vegetative types in interesting forms, textures, and patterns.	3: Some variety of vegetation, but only one or two types.	1: Little or no variety or contrast in vegetation.
Water	5: Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape.	3: Flowing or still, but not dominant in the landscape.	0: Absent or not noticeable.
Color	5: Rich color combinations, variety or vivid color; or pleasing contrast in the soil, rock, vegetation, water, or snow fields.	3: Some intensity or variety in colors and contrasts of the soil, rock and vegetation, but not a dominant element.	1: Subtle color variations, contrast, or interest, generally muted tones.
Adjacent Scenery	5: Adjacent scenery greatly enhances visual quality.	3: Adjacent scenery moderately enhances overall visual quality.	0: Adjacent scenery has little or no influence on overall visual quality.
Scarcity	6: One of a kind; or unusually memorable. Chance for exceptional wildlife or wildflower viewing.	2: Distinctive, though somewhat similar to others within the regions.	1: Interesting within its setting, but fairly common within the region.
Cultural Modifications	2: Free from aesthetically undesirable or discordant sights and influences or modifications add favorably to visual variety.	0: Scenic quality is somewhat depreciated by inharmonious intrusions, but not so extensively that they are entirely negated; or modifications add little or no visual variety to the area.	–4: Modifications are so extensive that scenic qualities are mostly nullified or substantially reduced.

Source: Bureau of Land Management

[21]/ United States Department of Agriculture, Forest Service, Land Management Plan – Part 3 Design Criteria for Southern California National Forests: Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest, R5-MB-080, p. 113.
[22]/ Op. Cit., Land Management Plan – Part 3 Design Criteria for Southern California National Forests: Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest, R5-MB-080, p. 6.

Existing Site-Specific Aesthetics

Proposed Project facility sites are individually described below.

- **Decker Canyon Reservoir Site and Construction Laydown Areas**. The proposed Decker Canyon Reservoir site is in the headwaters of the San Juan Creek Watershed.

  The view of Decker Canyon from South Main Divide road entirely comprises chaparral-chamise vegetation communities. The construction laydown area would be on the east side of South Main Divide Road in an area that is currently partially barren and used for the launching of hang gliders. Maximum viewable distances Decker Canyon from South Main Divide Road terminate at interior mountains higher than the view point in the San Mateo Wilderness about 0.5 mile away. A portion of the view from the top of Decker Canyon extends northwest toward the confluence of Decker and San Juan Creek Canyons about 5 miles away; however, vegetation, canyon topography, and at times, atmospheric haze largely obstructs the view. Views from the construction laydown area to the east overlook Lake Elsinore, the Interstate 15 corridor, and (depending on the amount of haze in the air) beyond to more mountain ridges on the horizon.

  The Forest Plan's SIO designates the proposed Decker Canyon Reservoir site and the construction laydown areas is "High" based on the naturally appearing landscape. Human-made alterations exist (e.g., South Main Divide Road, Morgan Trailhead, some residential houses on private in-holdings within the National Forest); however, the scale of these features is not out of context for the landscape, and the overall sense of the landscape, when viewed from South Main Divide Road, is that it is mostly unaltered.

- **Santa Rosa Substation and LEAPS Powerhouse**. The proposed Santa Rosa Substation, proposed LEAPS Powerhouse, and alternative Ortega Oaks Powerhouse sites are located at the base of the mountains within the CNF's Congressional boundary southwest of Grand Avenue in the unincorporated area of Lakeland Village (Riverside County). These parcels are private in-holdings and do not have SIO designations.

  The land uses along Grand Avenue dictate the aesthetic feel of the area, which includes single-family and multi-family residences, small commercial establishments, and vacant property. The parcel associated with the proposed Santa Rosa Substation and LEAPS Powerhouse consists primarily of non-native grasses with occasional shrubs, bare land, and numerous trails or dirt roads traversing the area. Unique features visible from this parcel (other than the neighboring residences) include the mountains to the southwest and southeast and partial views of Lake Elsinore, where visible, to the north.

  The general character of this parcel is considered open space within an urban environment. This characterization is derived from the parcel's fairly large size and lack of development; however, it is surrounded by the urbanized areas of Lakeland Village and is subject to informal recreation uses (numerous dirt trails and roads traversing the parcel and visual evidence of illegal dumping). The landscape and visual aesthetics of this site are not unusual, but they are accentuated by the parcel's proximity to the mountains and the striking backdrop they provide to all parcels along Grand Avenue.

The alternative Ortega Oaks Powerhouse site exhibit similar aesthetic qualities in that it constitutes a vacant parcel within the CNF's Congressional boundary, southwest of Grand Avenue in Lakeland Village; and possess generally the same vegetation, offer generally the same views of the mountains to the southeast and southwest and obstructed views of Lake Elsinore to the north, and is crossed by multiple dirt trails and roads. The alternative Ortega Oaks Powerhouse site has less visual appeal because dispersed recreational use has exposed bare soil and the site appears considerably disturbed. Ortega Oaks parcel shares road frontage with SR-74 and as such is also more visible to drivers on Ortega Highway.

Views of the foreground (0 to 0.5 miles) and middle ground (0.5 to 5 miles) to the southeast and southwest from the proposed Santa Rosa Substation and LEAPS Powerhouse site look directly at the base of the Santa Ana and Elsinore Mountains and up to the ridge line. Dependent upon the particular vantage point, the viewable distances to the north and east is generally obscured by residential influences and, except at higher elevations, are not more than 0 to 0.5 mile in total distance.

- **Transmission Alignment**. The majority of the Lake-Case Springs transmission alignment would be located within the CNF. The central portion of the proposed transmission alignment, as well as the southern segment of the Northern (Lake-Santa Rosa) transmission alignment and the northern segment of the Southern (Santa Rosa-Case Springs) transmission alignment, would parallel the northeastern side of the Santa Ana and Elsinore Mountains, an area of steep, chaparral vegetated slopes between the developed areas of the I-15 Freeway corridor (including Lakeland Village) and the mountain peaks.

  From a central portion above the proposed Santa Rosa Substation and LEAPS Powerhouse, the lines would extend north and south over undeveloped NFS lands. The aesthetic character of these lands is described above in the context of the "mountain zone." Overall, the NFS lands offer views of undeveloped natural landscapes, which are a welcome contrast to the surrounding residential developments located at the base of the mountains at Lake Elsinore.

  The Forest Plan's SIO designation for most of the NFS lands the proposed transmission alignments would cross is "High." The ridgeline and front slope (side facing Lake Elsinore and the I-15 Freeway) is almost entirely void of human developments that would contrast with the natural landscape character and the mountains appear as a natural backdrop to the urban areas around Lake Elsinore and along the I-15 Freeway corridor.

  A short segment of the proposed Northern (Lake-Santa Rosa) transmission alignment would cross BLM-administered lands located north of the I-15 Freeway near the small impoundment of Temescal Wash called Lee (Corona) Lake. The lands here are adjacent to the interstate and are generally steep hills with chaparral vegetation. Overall, the BLM scenic quality class of these lands within the proposed transmission alignment is "Class B" and subordinate in quality to the lands above Lake Elsinore.

Table 4.3.1-4 (Existing Scenic Quality based on BLM Visual Resource Management Inventory/Evaluation Criteria) presents a quantitative assessment of the proposed transmission alignment with regards to each of the seven BLM indicators.

Table 4.3.1-4. Existing Scenic Quality based on BLM Visual Resource Management Inventory/Evaluation Criteria

BLM Indicator	Transmission Alignment
Landform	1
Vegetation	3
Water	3
Color	1
Adjacent Scenery	3
Scarcity	1
Cultural Modifications	0
Total	12
Scenic Class Rating[1]	B

Notes:
1. Class A - 19 to 33 points; Category B - 12 to 18 points; and Cateogry C - 1 to 11 points

Source: The Nevada Hydro Company

Key Viewpoints Associated with the Project

Many of the features associated with the Project would be visible from public travelways that adjoin the Project site. Changes to the landscape would be most visible to the public who use South Main Divide Road, Ortega Highway, and Grand Avenue and neighboring communities. Other important areas with views of Project features would include the surface of Lake Elsinore, Wildomar Road, Morgan Trail, and the I-15 Freeway. With regards to the TE/VS Interconnect, Figure 5.1.1-2 (Existing View) through Figure 5.1.1-10 (Existing View) in Chapter 5 (Environmental Impact Assessment Summary) include photographs of Project sites before proposed construction. Figure 5.1.1-11 (Simulations) though Figure 5.1.1-19 (Simulation) contains photographs simulating views of the proposed transmission facilities. With regards to LEAPS, Figure 5.1.1-21 (Existing View) through Figure 5.1.1-24 (Existing View) include photographs of Project sites before proposed construction. Figure 5.1.1-25 (Simulations) though Figure 5.1.1-27 (Simulation) contains photographs simulating views of associated pumped storage facilities.

Presented below is a discussion of a number of key viewpoints.

- **South Main Divide and Wildomar Roads**. South Main Divide Road is a two-lane, paved, Riverside County-maintained road popular with scenic drivers and providing access to in-holdings and National Forest facilities. South Main Divide Road winds across the ridge of the mountains, allowing views of Lake Elsinore and beyond from various points along the roadway. Figure 5.11-5 (KVP L3 Existing View) and Figure 5.1.1-6 (KVP L4 Existing View) in Chapter 5 (Environmental Impact Assessment Summary) show the roads in proximity to the top of the ridgeline and views to the north and south. Where the views are limited by vegetation and local topography, the natural environment dominates the viewscape with residential driveways, gates, and fences interspersed.

Wildomar Road is a USDA Forest Service road that extends across NFS lands to the south of South Main Divide Road and provides access to the Wildomar Campground and Off-Highway Vehicle (OHV) Area. With the exception of communication towers on Elsinore Peak and the OHV use areas that exhibit disturbances to the vegetation, views from this road are dominated by the mostly naturally appearing landscape.

- **State Route 74**. Ortega Highway is a two-lane, paved, State highway connecting Riverside and Orange Counties. This heavily traveled route is popular for scenic driving as well as commuting and is eligible for designation as a State Scenic Highway. Travel speeds on Ortega Highway play a strong role in the ability of motorists to view details in the surroundings landscape as traffic flow is typically in the 45 to 55 mile per hour (mph) range (posted speed limits may be less). Further limiting the views from Ortega Highway, west of South Main Divide, are the numerous turns, vegetation, and steep canyon walls on both sides of the road as the highway nears the crest. East of South Main Divide Road, the landscape views open up as the highway descends the mountains with numerous vistas of Lake Elsinore and beyond.

- **Lake Elsinore**. Boaters on Lake Elsinore are afforded 360 degree views of the lake in the near ground and the mountains in in the distance (Figure 5.1.1-3 and Figure 5.1.1-4). Grand Avenue is in an area of existing urban (residential and commercial) development and carries a significant amount of local traffic near the proposed Santa Rosa Substation and LEAPS Powerhouse. Views from here are predominantly residential with the mountains rising in the background to the southwest and Lake Elsinore, when visible through open spaces between houses and vegetation, to the northeast.

- **I-15 Freeway**. The I-15 (Corona and Escondido) Freeway is a Federal interstate highway located less than 1 mile at its closest point (to the northeast of Lake Elsinore) and receives heavy commercial and non-commercial use. Similar to views from the water and eastern shore of Lake Elsinore, the most visible non-natural feature on the mountains (looking southwest) is the Ortega Highway road cut rising from the southwestern shoreline of Lake Elsinore across the mountain face. It is about 4.5 miles from the I-15 Freeway to the pass where Ortega Highway crosses the mountains. The distance from the I-15 Freeway to the Ortega Highway reduces the effect as the mountains are striking and dominant compared to Ortega Highway. Depending on where the observer is on the interstate and the season, the ability to identify non-natural details on the mountains from the I-15 Freeway is further reduced by local topography and atmospheric haze.

- **La Cresta**. The unincorporated community of La Cresta (Riverside County) is located southwest of the Wildomar Campground and OHV Area outside the National Forest boundary on a plateau situated below the more mountainous CNF and above the Lake Elsinore basin. Views relevant to the Project are to the northwest into the National Forest. With the exception of communication towers on Elsinore Peak and Wildomar Road, views into the National Forest are mostly naturally appearing.

With regards to lands within the corporate boundaries of the City of Lake Elsinore, as indicated in the City's "Background Report": "Scenic resources within and surrounding the City of Lake

Elsinore include the lake, CNF, rugged hills, mountains, ridgelines, rocky outcroppings, streams, vacant land with native vegetation, buildings of historic and cultural significance such as the cultural center, bathhouse and military academy, parts, and trails."[23] As further indicated in the City's "Background Reports": "For purposes of discussion, 15 landscape viewshed units have been identified in the Lake Elsinore area. . .Each of these areas has distinct viewsheds defined by man-made structures and physiographical features such as landform, water, or cultural features."[24]

The following brief description is provided with regards to each of the "landscape viewshed units" illustrated in Figure 4.3.1-5 (City of Lake Elsinore Landscape Viewshed Units): (1) Mainly vacant land with steep hillsides interspersed with development; unit is both within the City and Sphere of Influence (SOI); (2) Partially graded land due to mineral extraction; unit is half in the City and half in the SOI; (3) Mainly developed with residential, commercial, and recreational land uses; (4) Steep slopes mainly outside City boundaries, but within the SOI; includes portions of the CNF; this unit is mainly undeveloped, but has patches of residential, commercial, and recreational development; (5) Rolling hillsides characterize this unit; it is mainly residential with limited commercial use; (6) Unit is adjacent to the lake with a mix of residential, commercial, and public facilities; this unit is also the location of historic downtown Lake Elsinore; (7) Mainly within City boundaries, the unit is characterized by varying topography and rural development; (8) Majority of this unit is outside City boundaries, but within the SOI; area is developed with intermittent residential and commercial uses; (9) Unit is outside of the City but within SOI; residential community located along I-15 Freeway; (10) Located outside the City and on the edge of the SOI; characterized by rolling hills with limited residential development; (11) Located in the center of the SOI; mainly developed with residential and commercial uses; contains a public high school; (12) Location of the future Lake Elsinore Outlet stores; large portion to the east is vacant for future expansion; (13) Mainly manufacturing land located along I-15 Freeway; relatively flat topography; includes current location for the existing Lake Elsinore Outlet Mall; (14) This unit includes Lake Elsinore and surrounding floodplain; and (15) Characterized by steep slopes and limited development due to small lots and inadequate utilities; also known as County Club Heights.[25]

The City's "Background Report" includes the following discussion of LEAPS and the TE/VS Interconnect: "The Lake Elsinore Advanced Pumped Storage Project as proposed by EVMWD [Elsinore Valley Municipal Water District] has the potential to affect visual resources around the lake. The proposal includes filling up one of two canyons as a lake reservoir at the top of the Santa Ana mountain range, and includes an underground powerhouse at the bottom of the mountains. A two or three story building is proposed to be located on the top of the powerhouse. Transmission lines will be located at the base, but the path of the transmission lines is still to be determined. The pipes that carry the water will be tunneled through the mountain connecting the reservoir with the lake. This will likely not affect visual conditions because instead of trenching the pipes, a boring machine will be used to go through the mountain. Implementation of the project will likely affect the visual resources of the LEAPS project area, but Federal NEPA and State CEQA processes are still in motion and the final proposal is still to be determined."[26]

[23]/ City of Lake Elsinore (Mooney-Jones & Stokes), City of Lake Elsinore General Plan, Background Reports, Aesthetic and Visual Resources Background Report, January 2006, p. 9-3.
[24]/ Ibid., p. 9-3.
[25]/ Ibid., pp. 9-3 and 9-4.
[26]/ Ibid., p. 9-8.

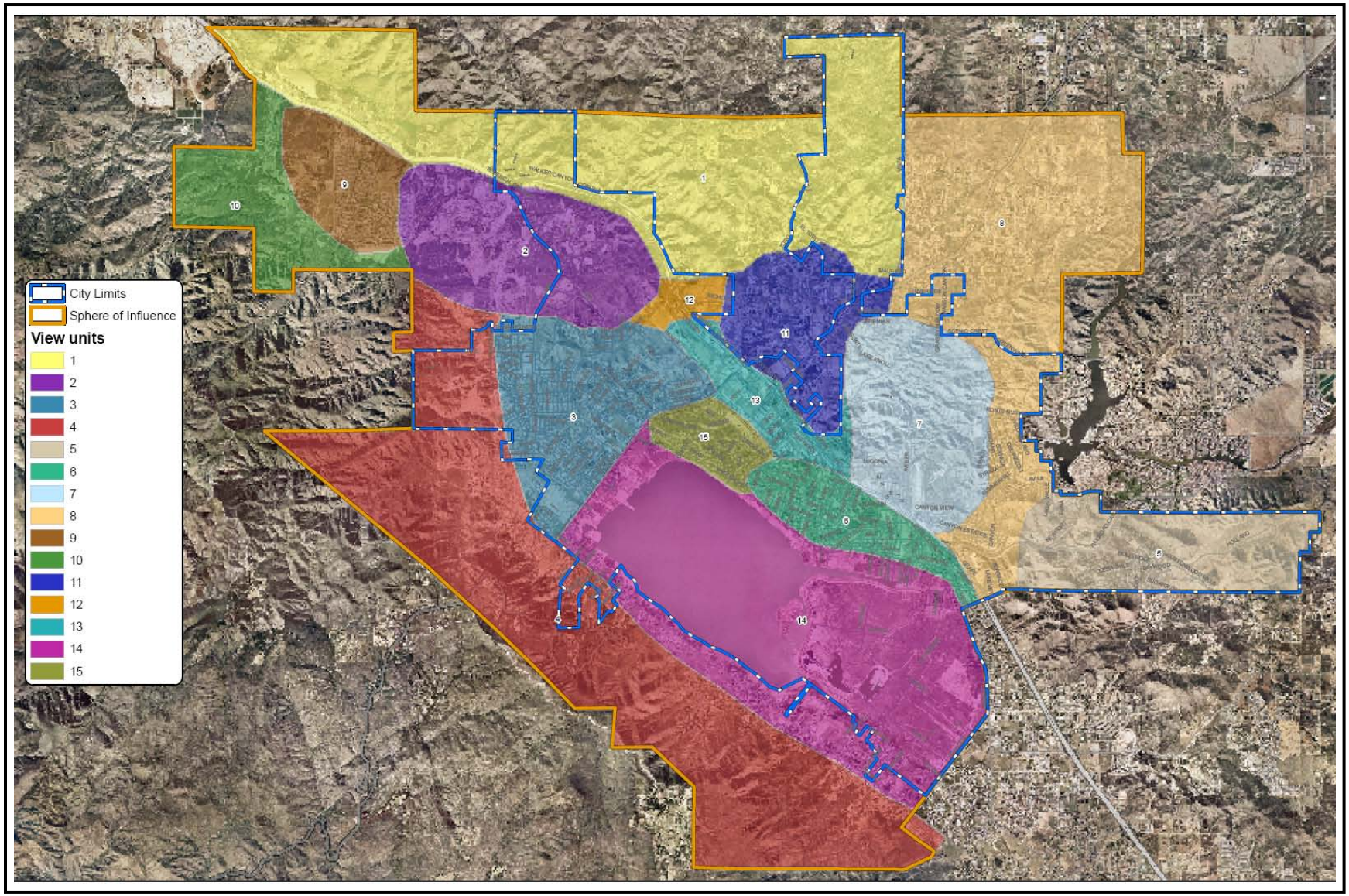

Figure 4.3.1-5. City of Lake Elsinore Landscape Viewshed Units
Source: City of Lake Elsinore (Mooney – Jones and Stokes)

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4.3.2 Aesthetics Regulatory Setting

The following information presents a general discussion of certain State and Federal statutes and regulations most applicable to an understanding of the Project's statutory and regulatory setting.

- California Public Resources Code. In accordance with Section 21000(b) of Public Resources Code (PRC), "[i]t is necessary to provide a high-quality environment that at all times is healthful and pleasing to the senses and intellect of man." Pursuant to Section 21001(b) of CEQA, it is the policy of the State to "[t]ake all actions necessary to provide the people of this State with clean air and water, enjoyment of aesthetics, natural, scenic, and historic environmental qualities, and freedom from excessive noise."

- California Street and Highway Code. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. These highways are identified in Section 263 of the California Streets and Highways Code (S&HC). The status of a State Scenic Highway changes from "eligible" to officially "designated" when the local jurisdiction adopts a scenic corridor protection program, applies to the California Department of Transportation (Caltrans) for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a scenic highway.

  Only that portion of SR-74 (Ortega Highway) between the west boundary of the San Bernardino National Forest (SBNF) westward to State Route-111 in the City of Palm Desert has been officially designated as a State Scenic Highway. SR-74 from the west boundary of the SBNF eastward to SR-1 is identified as an "eligible State Scenic Highway – Not Officially Designated." As indicated in Caltrans' "Guidelines for the Official Designation of Scenic Highways," "power lines" are identified as an "unsightly land use."[27] As indicated in the "County of Riverside Comprehensive General Plan" (Elsinore Area Plan), both the I-15 Freeway and SR-74 are designated as "State eligible scenic highways."[28] Neither the I-15 Freeway nor that portion of Ortega Highway located in the general Project area are designated as State Scenic Highways by Caltrans.

- California Public Utilities Code. The California Public Utilities Code (CPUC) prohibits new overhead utility distribution installation in scenic highway corridors and requires the CPUC to regulate approved work (Section 320). Section 320 does not apply to transmission towers, conductors, or related facilities designed to operate at high-side voltages of 50 kV or more, unless the utility designates them as distribution lines.

Riverside County Ordinance No. 655 restricts the permitted use of certain light fixtures emitting into the night sky undesirable light rays that may have a detrimental effect on astronomical observations. Ordinance No. 655 defines lighting sources, establishes the type and manner of installation and operation of lighting, and details lighting prohibitions.

[27]/ California Department of Transportation, Guidelines for the Official Designation of Scenic Highways, March 1996.
[28]/ County of Riverside, County of Riverside General Plan, Elsinore Area Plan, Figure 9, October 7, 2003.

4.4 Agricultural Resources

4.4.1 Agricultural Resources Environmental Setting

USDA Forest Service management plans include determinations concerning the capability and potential suitability of lands for producing forage for grazing animals (CFR 219.20). The Forest Service currently administers 28 grazing allotments within the CNF. Within the TRD, the Forest Service has initiated a separate NEPA review of the Verdugo and El Cariso livestock grazing allotments. Existing National Forest grazing allocations located in the general vicinity of the Project are shown in Figure 4.4.1-1 (Trabuco Ranger District – Existing Grazing Allocations).

The second Talega-Escondido 230-kV transmission circuit would be constructed on existing support structures already containing one 230-kV circuit. The proposed 69-kV subtransmission line will remain within an existing utility easement. Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations, and existing Etiwanda Generating Station and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. Additionally, proposed underground facilities do not have the potentially to directly impact agricultural resources. As such, with regards to those facility sites, agricultural resources are not further addressed herein.

Agricultural resources located within specific geographic areas are individually address below.

- **City of Lake Elsinore**. As indicated in the City's "Background Reports," according to the Southern California Association of Governments (SCAG), "the existing City of Lake Elsinore General Plan area encompasses approximately 24,815 acres of land, ranging from older urbanized areas to newer subdivisions to large tracts of agriculture and open space.[29] According to SCAG, 554 acres of land within the City are considered farmland of local importance; 827 acres are considered grazing land; and unique farmland accounts for 25 acres. Lands classified as Farmland of Local Importance are primarily located in the southeast area of the City of Elsinore (City), between the northeast edge of Lake Elsinore and the southern City limits, and in the Cottonwood Specific Plan area."[30] "Farmlands of significance" within the City and its Sphere of Influence (SOI) are illustrated in Figure 4.4.1-2 (City of Lake Elsinore – Farmlands of Significance).[31] The proposed Santa Rosa Substation and both the LEAPS and alternative Ortega Oaks Powerhouse sites are identified as "farmlands of local importance."

- **County of Riverside**. As indicated by the Western Riverside Council of Governments (WRCOG), from 1980-2002, the population of Riverside County increased by 963,000 people. From 2002-2020, the County is expected to add another 804,700 residents, reaching a population of 2.4 million people.[32] As reported by the California Department of Conservation (CDC): "Between 1990 and 2002, the Department of Conservation's

[29]/ In contrast, the Riverside County Local Agency Formation Commission's "Final Draft Municipal Service Review for the Western Riverside County Area" states that the City of Lake Elsinore encompasses an area of 24,823 acres (Source: Riverside County Local Agency Formation Commission, Final Draft Municipal Service Review for the Western Riverside County Area, May 2005, p. 4-1).
[30]/ Op. Cit., City of Lake Elsinore General Plan, Background Reports, Land Use and Recreation, p. 1-7.
[31]/ Ibid., Figure 1-4, p. 1-19.
[32]/ Western Riverside County Council of Governments, Workers Ahead: The Balance between Jobs and Housing in Western Riverside County, 2006, p. 14.

Farmland Mapping and Monitoring Program documents that Riverside County has had a net loss of nearly 70,000 acres of irrigated land, which is second only to the conversion of farmland in Kern County during that timeframe."[33] Referencing the "County of Riverside Comprehensive General Plan" (Riverside County General Plan): "The intent of the General Plan Agriculture Foundation Component and associated policies is to identify and preserve areas where agricultural uses are the long term desirable use. As shown on the Land Use Designation Key, the Agriculture Foundation Component consists of one area plan land use designation of the same name, Agriculture (AG). The Agriculture land use designation has been established to help conserve productive agricultural lands within the County. These include row crops, nurseries, citrus groves and vineyards, dairies, ranches, poultry and hog farms, and other agriculture-related uses."[34,35]

As indicated in the "Final Program Environmental Impact Report, Riverside County General Plan Update": "The proposed General Plan states that 180,178 acres in unincorporated Riverside County would be designated for agricultural uses under the "Agriculture" Foundation Component. The amount of land utilized for agricultural production currently totals 266,926 acres. Assuming all land designated for agricultural use was actively farmed at the time of build out, implementation of the proposed General Plan would result in the loss of 86,748 acres (32.5%) of agricultural land. As the total amount of land designated for agricultural uses under the proposed General Plan (180,178 acres) is less than the amount of agricultural land currently designated as Prime, Unique, and Statewide Important (212,005 acres), implementation of the proposed General Plan would result in a significant loss of Prime, Unique or Statewide Important farmland." As further indicated in the Riverside County General Plan, policies promoting the retention of agricultural lands "apply to properties designated as Agriculture on the General Plan and area plan land use maps."[36]

As determined by the Riverside County Board of Supervisors, based on the programmatic EIR, with regard to agricultural resources, the following unmitigatable environmental effect was identified: The proposed General Plan update will result in the conversion of prime farmlands, unique farmlands, farmland of statewide importance or land actively utilized for agricultural production to a variety of non-agricultural uses.[37] In Riverside County, as indicated in Figure 4.4.1-3 (Riverside County General Plan - Elsinore Area Plan), none of the proposed Project facilities are located upon or traverse lands designated as "Agriculture (AG)."

- **County of San Diego**. According to the California Department of Food and Agriculture, the gross value of San Diego County's agricultural production was nearly $1.3 billion in

[33]/ California Department of Conservation, California Farmland Conservancy Program – Proposition 12 Bond Fund Report, September 2006, p. 6.
[34]/ Op. Cit., Riverside County General Plan, Land Use Element, Agriculture.
[35]/ The County of Riverside's "Agriculture Foundation Amendment Cycle" allow up to seven percent of all lands designated as "Agriculture" in the Riverside County General Plan to change to other foundation component and land use designations during each 2.5-year cycle from the date of adoption of the Riverside County Genera Plan.
[36]/ Op. Cit., Final Program Environmental Impact Report, Riverside County General Plan Update, EIR No. 441, State Clearinghouse No. 2002051143, Section 4.2.2.
[37]/ Op. Cit, CEQA Findings of Fact and Statement of Overriding Considerations of the Board of Supervisors of Riverside County for the 2003 Riverside County General Plan, October 7, 2003, Findings of Fact for Riverside General Plan Impacts and Mitigation Measures, Environmental Impact 4.1.2.

2002, ranking it eighth among California's 58 counties. The CDC's Farmland Mapping and Monitoring Program (FMMP) documents land-use conversion on 45.8 million acres of California's private and public land every two years. In San Diego County, between 2000 and 2002, 8,807 acres were urbanized and, since the 1990 FMMP survey, the County of San Diego gained nearly 45,000 urban acres. The net loss of farm and grazing land was more than 34,000 acres between 1990-2002. Of those, nearly 14,000 acres were considered "unique farmland" due to their ability to grow specialty crops (e.g., citrus and avocados). In addition, cities within San Diego County reported that nearly 10,400 acres were committed to future non-agricultural use due to the approval of subdivision maps, the sale of infrastructure bonds, or other permanent commitments. Agricultural land in San Diego will continue to face development pressure in the foreseeable future.[38]

4.4.2 Agricultural Resources Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's regulatory setting.

- Farmland Policy Protection Act of 1981. The Farmland Policy Protection Act (17 U.S.C. 4201-4209) (FPPA) requires that, before taking or approving any federal action that would result in conversion of farmlands[39] to nonagricultural uses, the federal agency must examine the effects of the action using the criteria set forth in the act. If there are adverse effects on farmland, the agency must consider alternatives that would lessen those effects.

  Under the FPPA, farmlands include "Prime Farmland," "Farmland of Statewide Importance," "Unique Farmland," and "Farmland of Local Importance." A detailed explanation of those classifications is presented in the CDC's "A Guide to the Farmland Mapping and Mapping Program."[40,41]

  The CDC is charged with developing programs for the protection the State's agricultural resources. Based on data from the Natural Resources Conservation Service (NRCS), the CDC developed a Farmland Mapping and Monitoring Program (FMMP) classifying different agricultural soil types according to their ability to sustain agricultural crops.

[38]/ California Department of Conservation, San Diego County Losses Farmland, NR 2004-23, July 8, 2004 (http://www.consrv.ca.gov/index/news/2004%20News%20Releases/NR2004-23_San_Diego_FMMP.htm).

[39]/ As defined, "'farmland' includes all land defined as follows: (A) prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion, as determined by the Secretary [or Agriculture]. Prime farmland includes land that possesses the above characteristics but is being used currently to produce livestock and timber. It does not include land already in or committed to urban development or water storage; (B) unique farmland is land other than prime farmland that is used for production of specific high-value food and fiber crops, as determined by the Secretary. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of specific crops when treated and managed according to acceptable farming methods. Examples of such crops include citrus, tree nuts, olives, cranberries, fruits, and vegetables; and (C) farmland, other than prime or unique farmland, that is of statewide or local importance for the production of food, feed, fiber, forage, or oilseed crops, as determined by the appropriate State or unit of local government agency or agencies, and that the Secretary determines should be considered as farmland for the purposes of this chapter" (17 U.S.C. 4201[c]).

[40]/ California Department of Conservation, A Guide to the Farmland Mapping and Mapping Program, 2004 Edition, 2004.

[41]/ Projects that are not subject to the FPPA include projects on land already developed for urban use, land used for water storage, and land used for the construction of on-farm structures needed for farm operations.

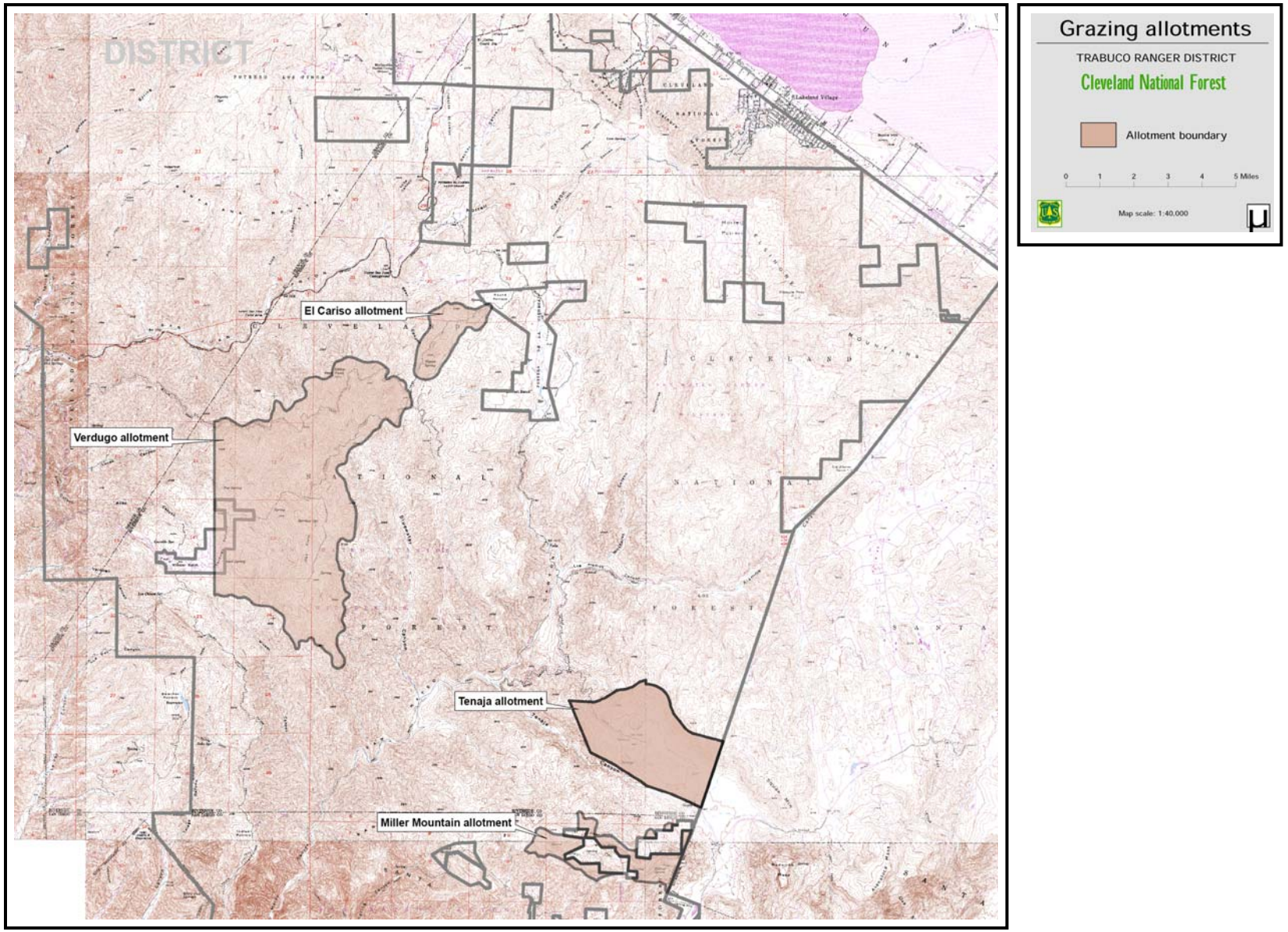
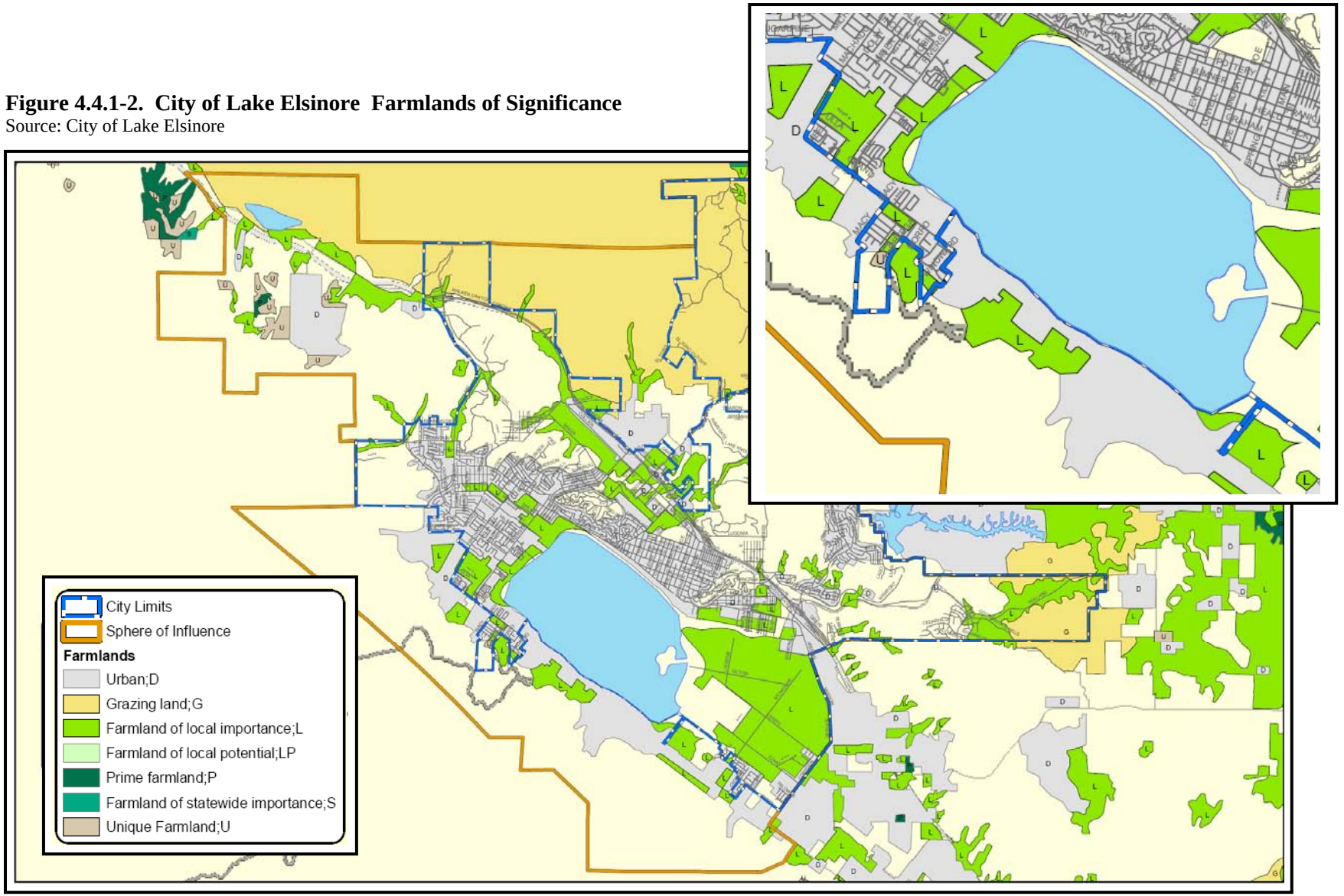


Figure 4.4.1-1. Trabuco Ranger District Existing Grazing Allocations
Source: USDA Forest Service

Figure 4.4.1-2. City of Lake Elsinore Farmlands of Significance
Source: City of Lake Elsinore



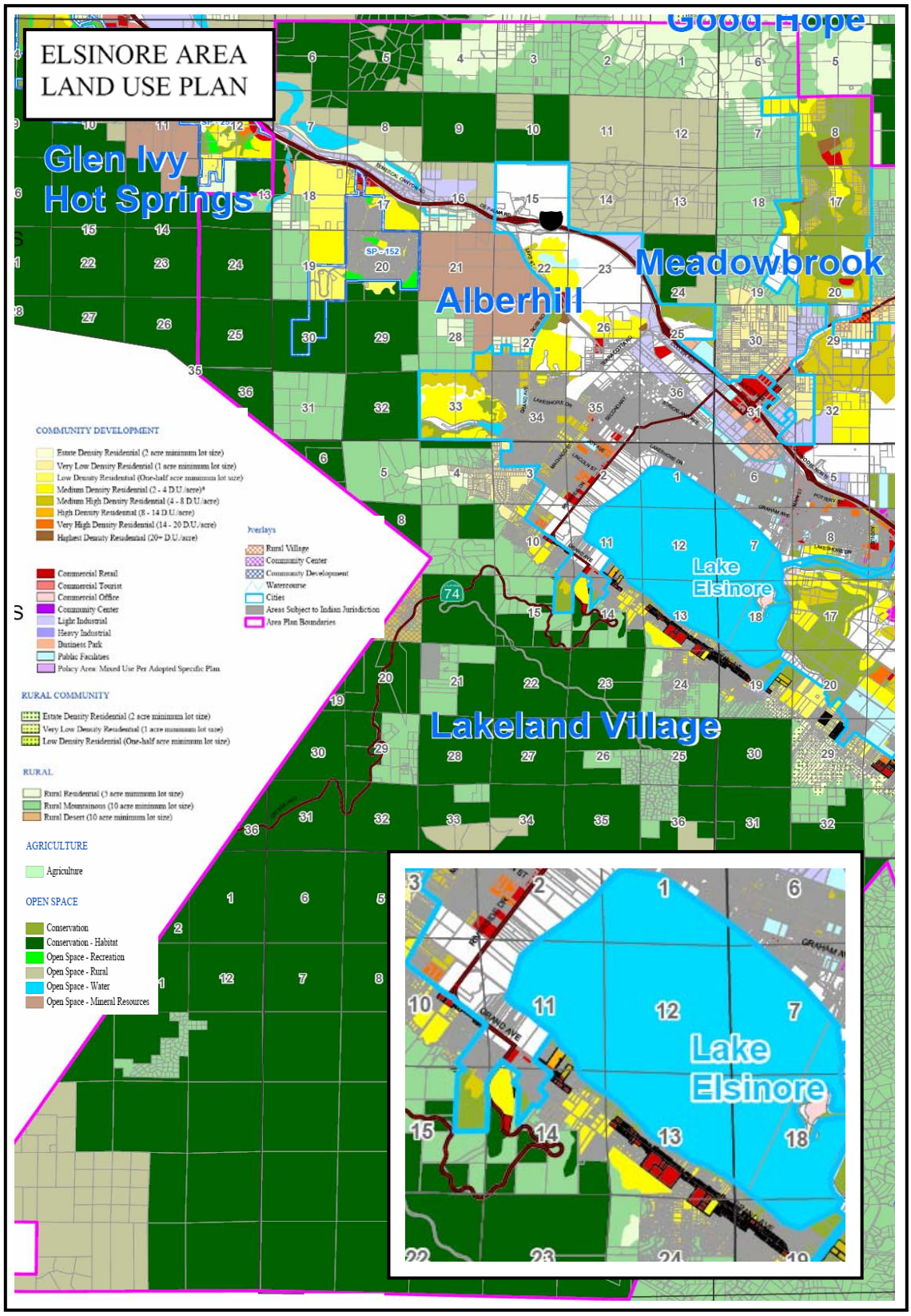


Figure 4.4.1-3. Riverside County General Plan Elsinore Area Plan
Source: County of Riverside

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The FMMP's "Important Farmland Series maps" and the advisory guidelines for the FMMP identify five agricultural-related categories: Prime Farmlands, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land.[42] California's prime and Statewide soils are identified in the CDC's "Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance."[43] The CDC has published those soil mapping units that meet the criteria for Prime Farmland and Farmland of Statewide Importance for both Riverside and San Diego Counties.[44]

As defined by the CDC, "Farmland of Local Importance" is defined as land of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee. For Riverside County, the definitions of this category include; 1) soils that would be classified as Prime and Statewide but lack available irrigation water, 2) lands planted to dryland cops of barley, oats, and wheat, 3) lands producing major crops for Riverside County but that are not listed as unique crops. (Note: these crops are identified as returning one million or more dollars on the 1980 Riverside County Agriculture Crop Report. Crops identified are permanent pasture (irrigated), summer squash, okra, eggplant, radishes, and watermelons. Dairylands include corrals, pasture, milking facilities, hay storage areas and manure storage areas if accompanied with permanent pasture or hayland of 10 acres or more), 4) lands identified by city or county ordinance as Agricultural Zones or Contracts, which include Riverside City 'Proposition R' lands, 5) lands planted to jojoba which are under cultivation and are of producing age. For San Diego County, the definitions of this category include: "Lands that meet all the characteristics of Prime and Statewide, with the exception of irrigation. This category includes farmlands not covered by the above categories but which are of significant economic importance to the county. They have a history of good production for locally adapted crops. The soils are grouped in types that are suited for truck crops and soils suited for orchard crops."[45]

- United States Department of Agriculture Regulation 9500-3. It is the policy of the Department of Agriculture (USDA) to assure that USDA programs discourage the unwarranted conversion of prime and unique farmlands, farmlands of statewide or local importance, and prime rangelands to other uses; the unwarranted alteration of wetlands and floodplains; and the unwarranted expansion of the peripheral boundaries of existing settlements; and to manage its land-use programs and lands to demonstrate leadership in

[42]/ "Prime farmlands" are those lands with the best combination of physical and chemical features for the long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yield. The land must have been used for the production of irrigated crops at some time during the four years prior to the mapping date. "Farmland of Statewide importance" are those lands with a good combination of physical and chemical features but with minor shortcomings, such as greater slopes or with less ability to hold and store moisture. The land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date (Source: California Department of Conservation, California Farmland Conversion Report 2000-2002, 2004, p. 5).

[43]/ California Department of Conservation, Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance, Riverside County, updated August 23, 2005; California Department of Conservation, Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance, San Diego County, updated June 5, 2006; California Department of Conservation, Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance, Orange County, updated July 6, 2004.

[44]/ California Department of Conservation, Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance – Riverside County, Farmland Mapping and Monitoring Program, updated August 23, 2005; California Department of Conservation, Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance – San Diego County, Farmland Mapping and Monitoring Program, updated June 5, 2006.

[45]/ California Department of Conservation, California Farmland Conversion Report: 2000-2002, 2004, pp. 83-84.

meeting short-range and long-range needs for growth and development while assuring adequate supplies of needed food, fiber, and forest products.[46]

- California Government Code. The California Land Conservation Act (Williamson Act), codified in Sections 51200-51295 of the CGC, provides for lower property taxes for lands maintained in agricultural and certain open space uses. The act enables private landowners to enter into contracts the county or the city to restrict land use to those compatible with agriculture, wildlife habitat, scenic corridors, recreational use or open space. The minimum term for a Williamson Act contract is ten years, with automatic renewal at the end of each term. Williamson Act lands include both "prime agricultural lands" (Section 51201, CGC) and "non-prime agricultural and" (Section 16143, CGC). As illustrated in Figure 4.4.2-1 (Williamson Act Contract Lands), none of Project sites are under Williamson Act contract.

  As further specified, in part, in Section 65561 of the CGC, it is the policy of the State that "the preservation of open-space land, as defined in this article, is necessary not only for the maintenance of the economy of the State, but also for the assurance of the continued availability of land for the production of food and fiber." As further specified in Section 65570 of the CGC, the Director of the California Department of Conservation may establish rules and regulations and require reports from local officials for the preparation of an agricultural lands inventory. As illustrated in Figure 4.4.2-2 (Important Farmland Maps [2004]), excluding National Forest lands, certain Project facilities may be located upon or in close proximity to areas designated as "Important Farmland" under the FMMP. Specifically, the Santa Rosa Substation and LEAPS Powerhouse sites are identified as "Farmlands of Local Importance."

4.5 Air Quality

4.5.1 Air Quality Environmental Setting

According to the California Air Resources Board (CARB), air pollution is one of the State's most serious problems. CARB, as part of the California Environmental Protection Agency (Cal/EPA) is the state board responsible for achieving and maintaining healthful air in California. Local air districts along with the United States Environmental Protection Agency (USEPA) also share this responsibility. The reasons for the State's air quality problems include, but may not be limited to, the following: (1) a large population (approximately 37 million and growing), which translates into a high number of vehicle miles traveled and associated vehicle emissions; (2) a geography with the most heavily populated areas of the state being valleys or basins hemmed in by mountains; and (3) a climate of hot, stagnant summer air that traps air pollutants in heavily populated basins and valleys. High temperatures catalyze photochemical production of ozone from precursor air pollutants, and ozone is an unhealthful constituent of smog. Sources of air emissions in California include stationary sources (e.g., commercial facility operations), area-wide sources (e.g., fugitive dust, residential fireplaces), mobile sources (e.g., on-road vehicles and trucks, aircraft, boats, trains), and natural sources (e.g., biogenic and geogenic hydrocarbons, natural windblown dust, wildfires).

[46]/ United States Department of Agriculture, USDA Environmental Compliance Land Use Policy, Department Regulation 9500-3, March 22, 1983.

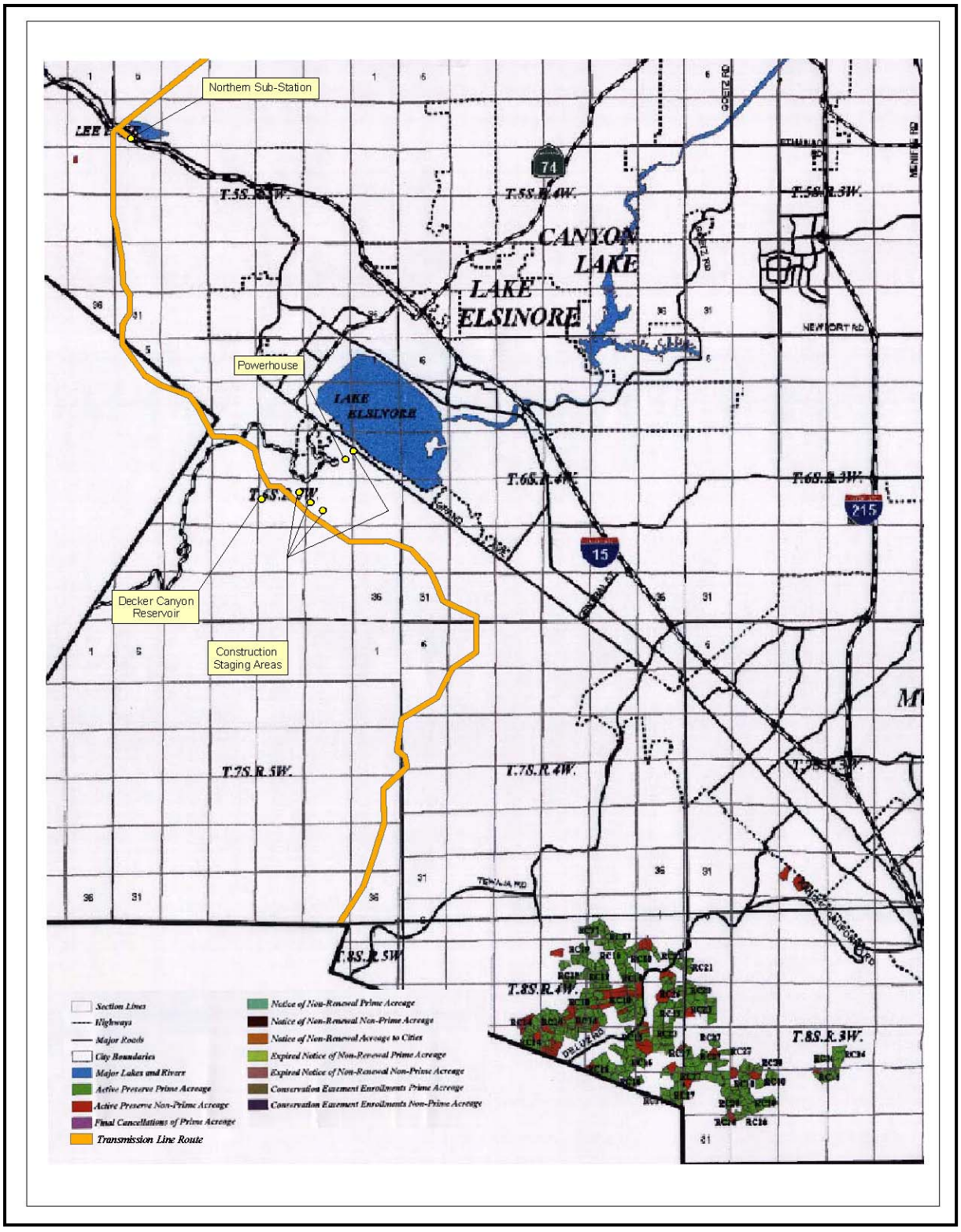

Figure 4.4.2-1. Williamson Act Contract Lands in Western Riverside County (1 of 3)
Source: California Department of Conservation

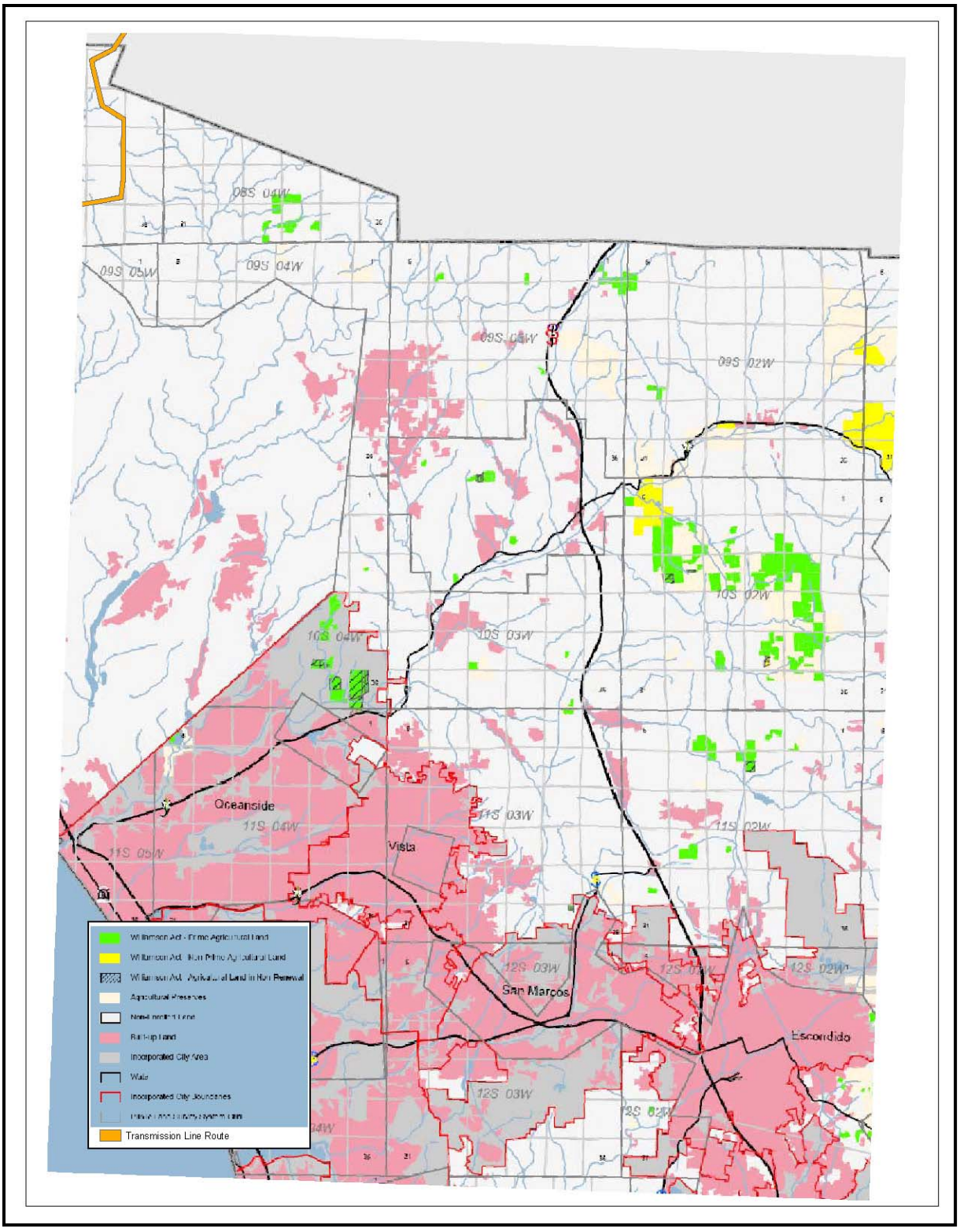

Figure 4.4.2-1. Williamson Act Contracts Lands in Northern San Diego County (2 of 3)
Source: California Department of Conservation

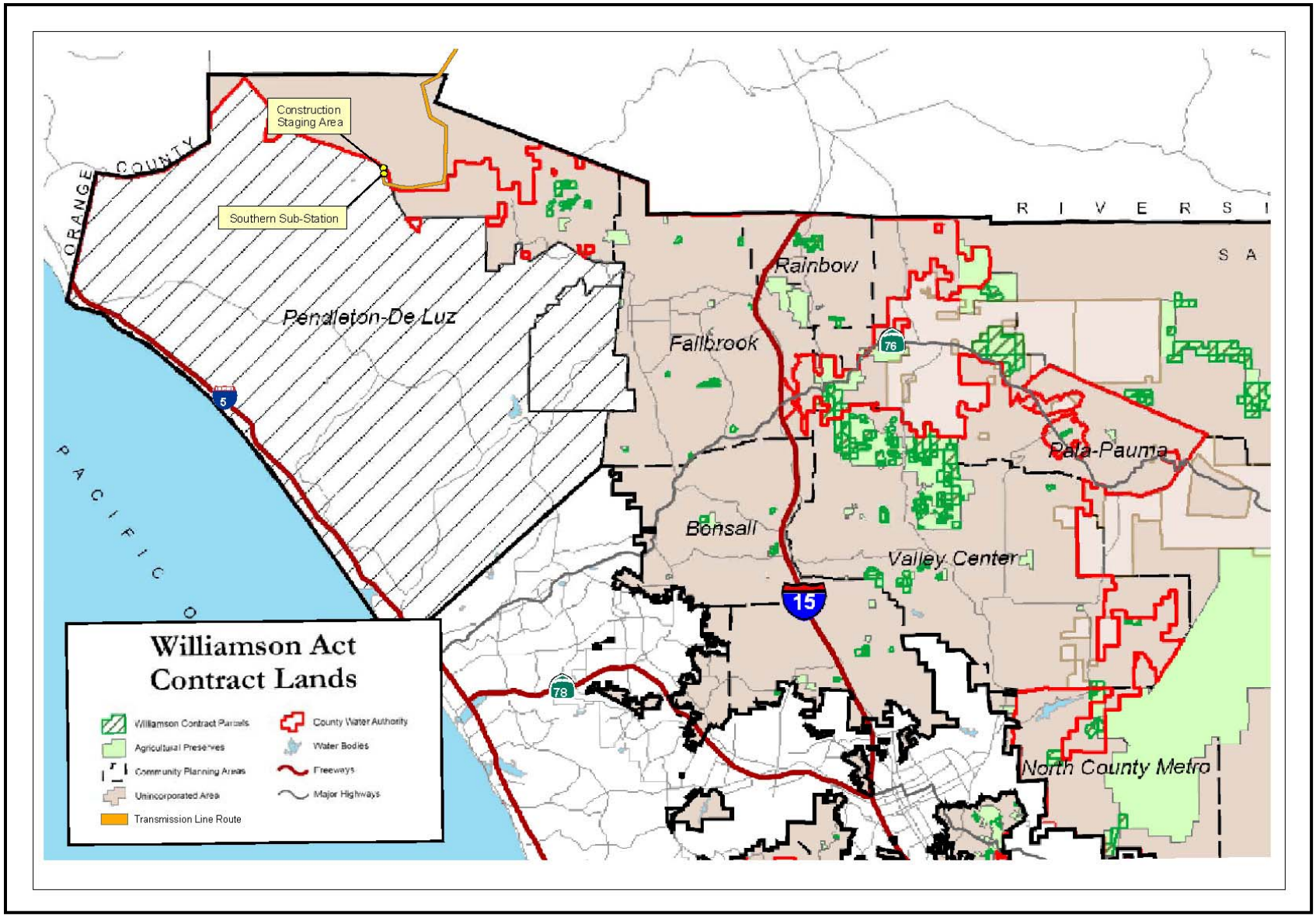

Figure 4.4.2-1. Williamson Act Contracts Lands in Northern San Diego County (3 of 3)
Source: County of San Diego

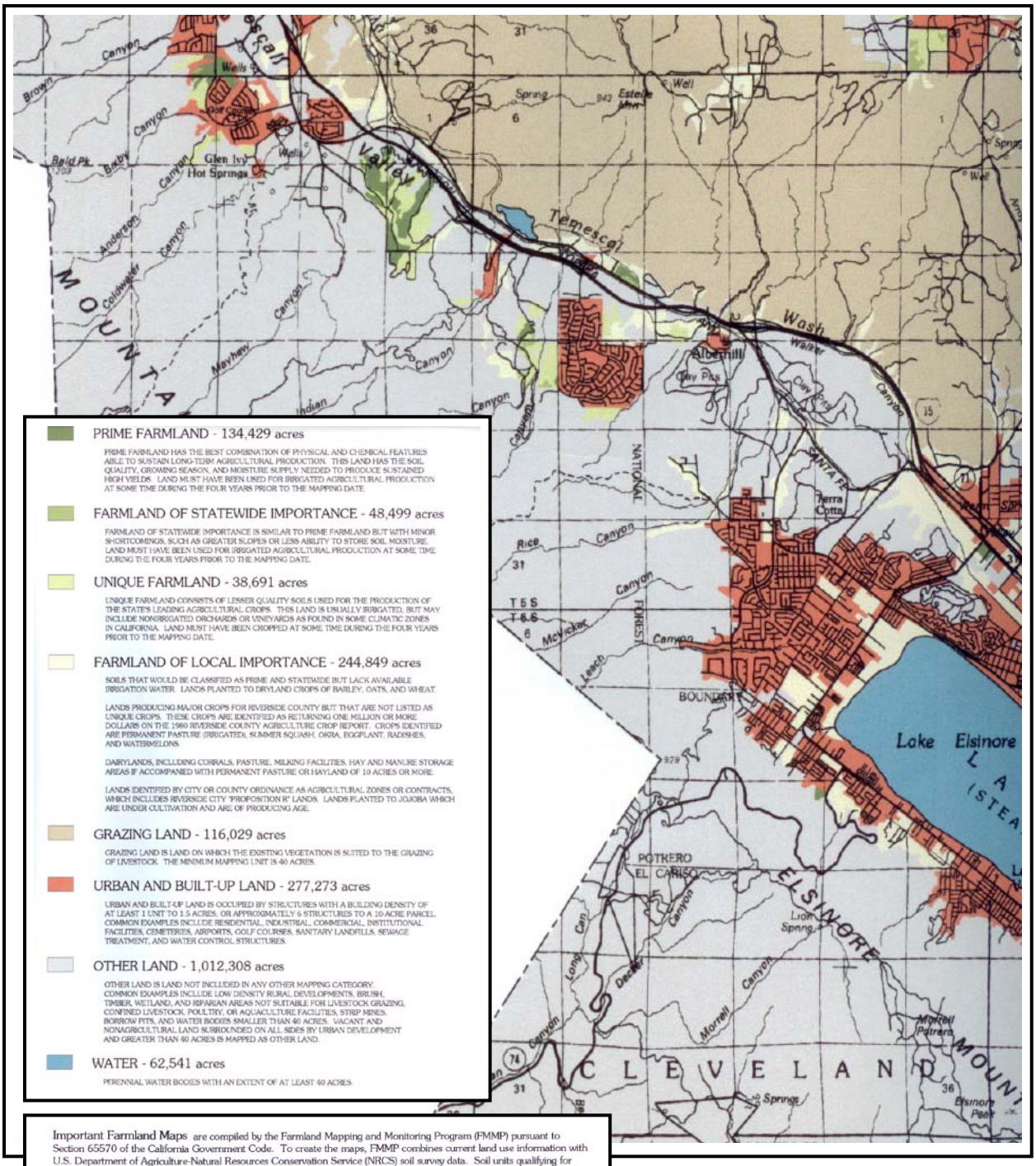

Figure 4.4.2-2. Riverside County Important Farmland (2004) (1 of 4)
Source: California Department of Conservation

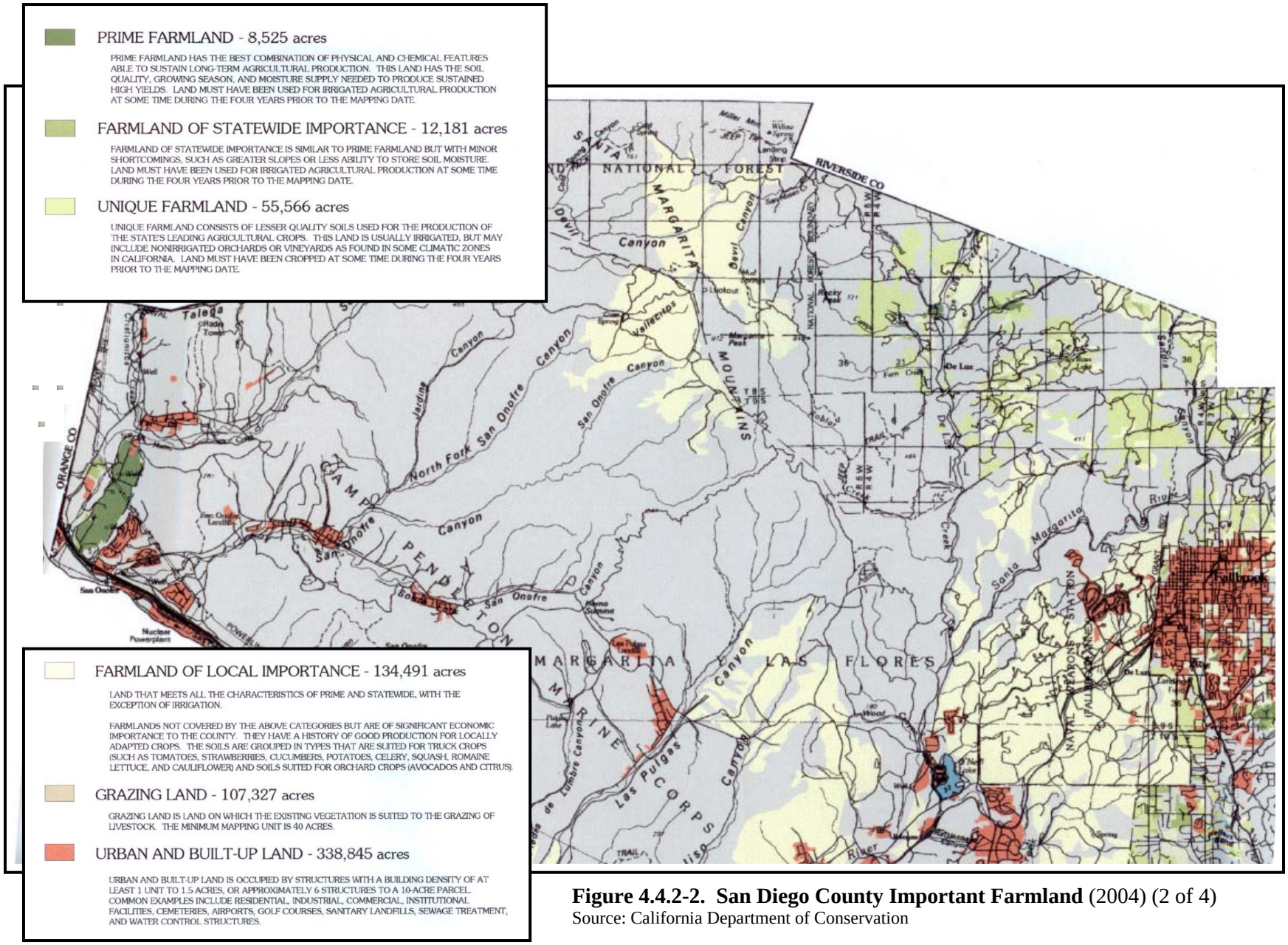

Figure 4.4.2-2. San Diego County Important Farmland (2004) (2 of 4)
Source: California Department of Conservation

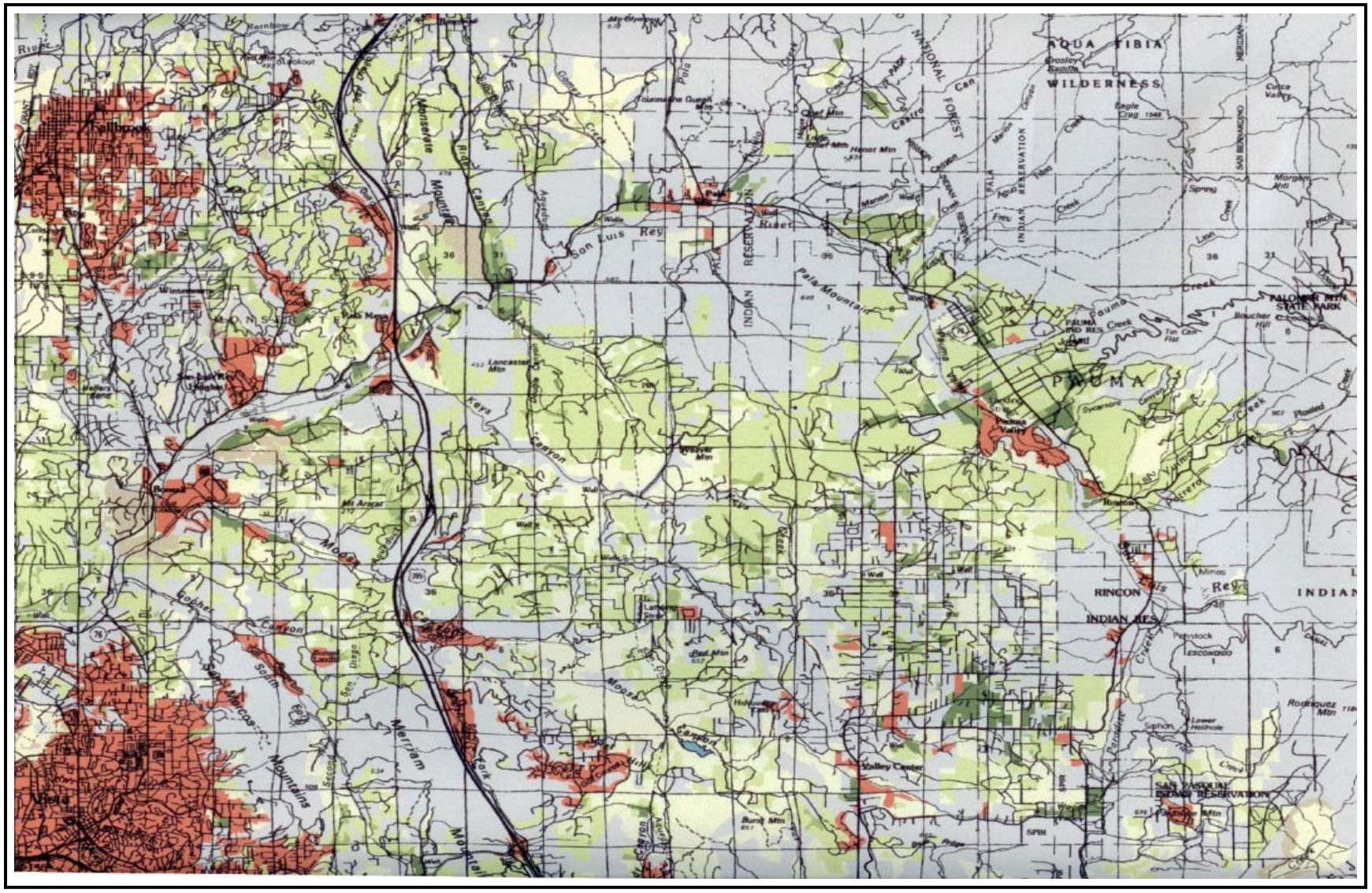

Figure 4.4.2-2. San Diego County Important Farmland (2004) (3 of 4)
Source: California Department of Conservation

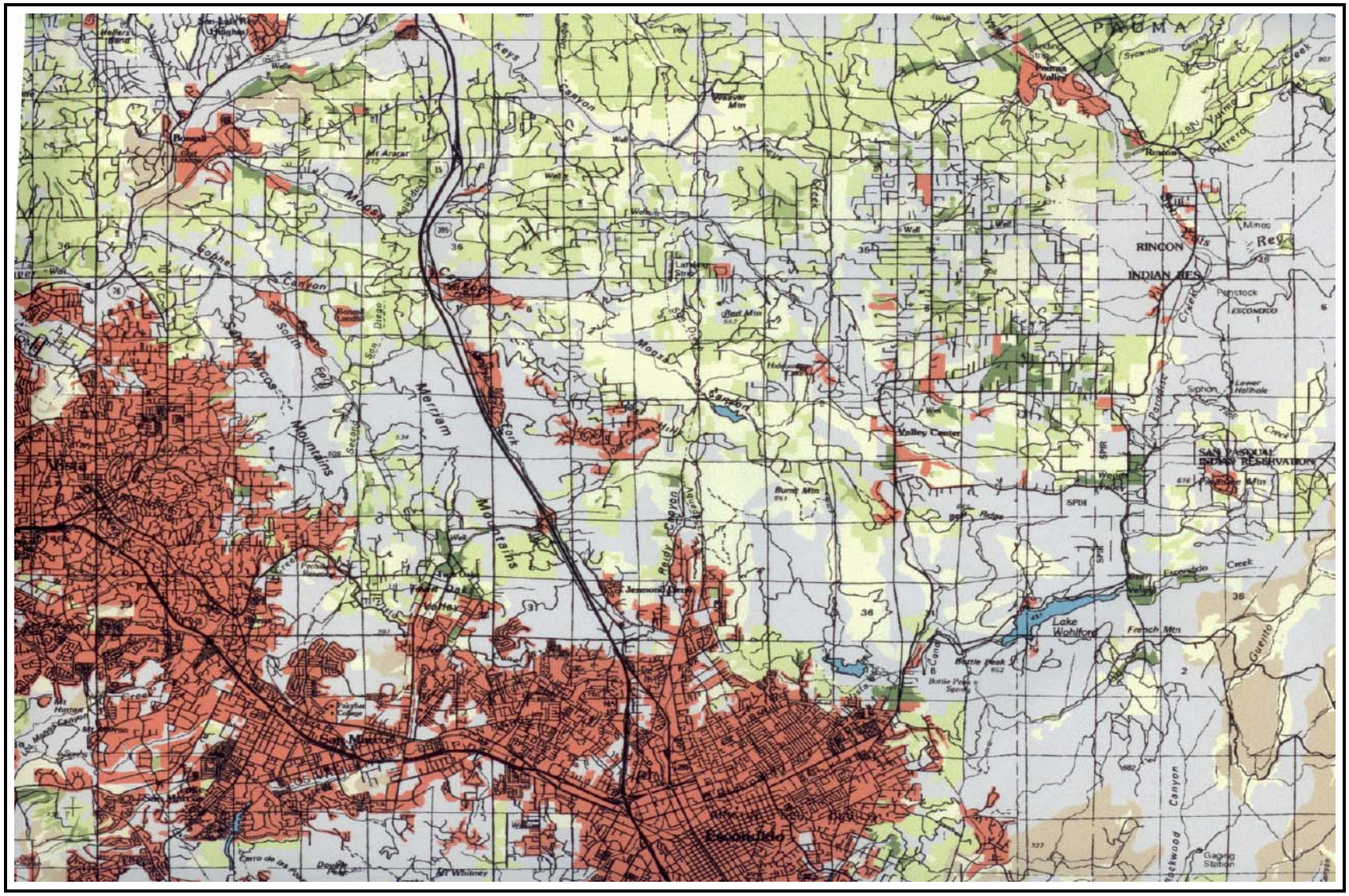

Figure 4.4.2-2. San Diego County Important Farmland (2004) (4 of 4)
Source: California Department of Conservation

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To maintain acceptable ambient air quality and protect public health, both California and the Federal governments have adopted ambient air quality standards for criteria or indicator air pollutants. An ambient air quality standard establishes the concentration above which the pollutant is known to cause adverse health effects to sensitive groups within the population such as children and the elderly. The goal is for localized project effects not to cause or contribute to an exceedance of the standards. Ambient air quality standards are classified as either "primary" or "secondary" standards. Primary standards define levels of air quality, including an adequate margin of safety, necessary to protect the public health. National secondary ambient air quality standards define levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. The criteria pollutants for which standards have been established are carbon monoxide, lead, ozone, nitrogen dioxide, particulate matter (PM_{10} and $PM_{2.5}$) and sulfur dioxide. Brief descriptions for the three criteria pollutants that appear most relevance to the Project are provided below.

- **Carbon Monoxide**. Carbon monoxide (CO) is a colorless, odorless gas that is directly emitted as a byproduct of combustion. The principal sources of carbon monoxide emissions are motor vehicles, and the highest concentrations of this gas occur under cold, stagnant weather conditions. Carbon monoxide is harmful because it is absorbed through the lungs into the blood stream and reduces the ability of the blood to transport oxygen. As a result, the blood supply to the heart, lungs and other tissues is reduced, with potentially critical consequences for the sick and elderly.

- **Particulate Matter** (PM_{10} and $PM_{2.5}$). Particulate matter is a mixture of different substances including metals, carbon, nitrates, sulfates, organic compounds, and complex mixtures such as diesel exhaust and soil. Particulate matter has been classified as either PM_{10} or $PM_{2.5}$ material. PM_{10} particulates, which have an aerodynamic diameter of 10 microns or smaller, are referred to as "respirable" material because they are small enough to penetrate into inner regions of the lungs where they can be harmful to human health. $PM_{2.5}$ particulate matter, which is even finer (aerodynamic diameter of 2.5 microns or smaller), can deposit deeper in the lungs when inhaled. Exposure to particulate matter aggravates respiratory illnesses and is especially harmful to people with pre-existing heart and lung diseases. Particulate matter (including PM_{10} and $PM_{2.5}$) can either be directly emitted (e.g., dust or soot) or formed in the atmosphere from precursor gaseous emissions, including nitrogen oxides, sulfur oxides and ammonia.

  Based on USEPA estimates, the largest contributor to PM_{10} levels nationwide is fugitive dust, which accounts for 89 percent of the total particulate matter. The USEPA also estimates that approximately 14 percent of fugitive dust is attributable to construction activities and 9 percent to re-suspension on paved roads.

- **Ozone**. Ozone (O_3) is a colorless, odorless gas that constitutes the main component of urban smog. Ozone is not directly emitted as a pollutant, but is formed when precursor hydrocarbon and nitrogen oxides emissions react photochemically in the presence of sunlight. Stagnant air or low wind speeds and warm temperatures provide optimum conditions for O_3 formation. Ozone irritates the lungs and damages the respiratory system.

For most of the criteria air pollutants, State standards are more stringent than the Federal standard because of inferences from different health effects studies and incorporation of a higher margin of safety to protect sensitive individuals. State and Federal ambient air quality standards for criteria pollutants are presented in Table 4.5.1-1 (California and Federal Ambient Air Quality Standards.

Table 4.5.1-1. California and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary	Secondary
Ozone (O_3)	1 hour 8 hour	0.09 ppm (180 µg/m^3)	0.12 ppm (235 µg/m^3) 0.08 ppm (157 µg/m^3)	Same as primary standard
Respirable Particulates (PM_{10})	24 hour Annual mean	50 µg/m^3 20 µg/m^3	150 µg/m^3 50 µg/m^3	Same as primary standard
Fine Particulates ($PM_{2.5}$)	24 hour Annual mean	No standard 12 µg/m^3	65 µg/m^3 15 µg/m^3	Same as primary standard
Carbon Monoxide (CO)	8 hour 1 hour	9 ppm (10 mg/m^3) 20 µg/m^3 (23 mg/m^3)	9 ppm (10 mg/m^3) 35 µg/m^3 (40 mg/m^3)	None
Nitrogen Dioxide (NO_2)	Annual mean 1 hour	0.25 ppm (470 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
Sulfur Dioxide (SO_2)	Annual mean 24 hour	0.04 ppm (105 µg/m^3)	0.03 ppm (80 µg/m^3) 0.14 ppm (365 µg/m^3)	
	3 hour 1 hour	0.25 ppm (655 µg/m^3)		0.5ppm (1,300 µg/m^3)

Source: California Air Resources Board

In addition to the criteria pollutants, CARB monitors the emissions of 10 toxic air contaminants (TACs) that have been identified to pose the greatest outdoor ambient public health risks. These air contaminants are acetaldehyde, benzene, 1.3-butadiene, carbon tetrachloride, hexavalent chromium, paradichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter. The California Health and Safety Code defines a toxic air contaminant as an air pollutant that may cause or contribute to an increase in mortality or in serious illness or that may pose a present or potential hazard to human health. The 10 TACs are all carcinogenic. Unlike the criteria pollutants for which adverse health effects are not expected to occur below the ambient air quality standards (i.e., concentrations), there is no threshold concentration that does not pose health risks for any of the ten toxic air contaminants. Of the 10 TACs, CARB considers diesel particulate matter (PM) to pose the greatest health risks. Diesel PMs is not a single substance, but a complex mix of hundreds of substances emitted by diesel-fueled internal combustion engines and influenced by engine/fuel type and operating characteristics.

Because there are no standards for toxic air contaminants, CARB is charged with the responsibility for identifying substances as toxic air contaminants, setting priorities for control, and promoting alternative processes/materials. Table 4.5.1-2 (California Toxic Air Contaminants Unit Risk Factors) presents a summary of the unit cancer risk factors associated with the 10 toxic air contaminants. A unit risk factor is expressed as the probability (cases per million people) of contracting cancer as a result of constant exposure to ambient concentration of 1 µg/m^3 over a 70-year lifetime.

Table 4.5.1-2. California Toxic Air Contaminants Unit Risk Factors

Toxic Air Contaminant	Unit Risk per Million People[1]
Acetaldehyde	2.7
Benzene	29
1,3-Butadiene	170
Carbon Tetrachloride	42
Chromium, Hexavalent	150,000
Para-Dichlorobenzene	11
Formaldehyde	6
Methylene Chloride	1
Perchloroethylene	5.9
Diesel Particulate Matter	300

Note:
1. The unit risk represents the number of excess cancer cases per million people continuously exposed to 1 $\mu g/m^3$ of the toxic air contaminants over a 70-year lifetime.

Source: California Air Resources Board

With regards to climate change attributable to carbon dioxide emissions, in a recent article published in the Proceedings of the National Academy of Sciences of the United States of America, the authors reported that the "severity of damaging human-induced climate change depends not onoy on the magnitude of the chage but also on the potential for irreversibility. This paper shows that the climate change that takes place due to increases in carbon dioxide concentrations is largely irreversible for 1,000 years after emissions stop. Following cessation of emissions, removal of atmospheric carbon dioxide decreases radtiative forcing, but is largely compensated by slower loss of heat to the oceans, so that atmospheric temperatures do not drop significantly for at least 1,000 years.. Among illustrative irreversible impacts that should be expected if atmospheric carbon dioxide concentrations increase from current levels near 385 parts per million by volume (ppmv) to a peak of 450-600 ppmv over the coming century are irreversible dry-season rainfall reductions in several regions comparable to those of the 'dust bowl' era and inexorable sea level rise."[47]

4.5.2 Air Quality Regulatory Setting

- **Existing Air Quality**. To better manage common air quality problems, California is divided into 15 air basins, each of which is associated with an Air Quality Management District (AQMD). According to CARB, an air basin generally follows political boundary lines and is defined to include both source areas and receptor areas. Because air masses can move freely from basin to basin, interbasin transport of pollutants is unavoidable. The Project area is located within Riverside, Orange, San Diego, and San Bernardino Counties. The Project is located principally within the South Coast Air Basin (SCAB); however, that portion of the Project located in San Diego County is located within the San Diego Air Basin (SDAB).

- **State and National Area Designations**. Both State and Federal governments use ambient air monitoring data to classify areas according to their attainment status with respect to the criteria pollutants. The designations are used to identify areas with air

[47]/ Solomon, Susan, Plattern, Gian-Kasper, Knutti, Reto, and Friedlingstein, Pierre, Irreversible Climate Change due to Carbon Dioxide Emissions, Proceedings of the National Academy of Sciences of the United States of America, Vol. 106, No. 6, February 10, 2009, p. 1704.

quality problems and help determine whether a project's emissions would be considered significant under NEPA and CEQA assessments. The three basic designation categories are: (1) "Attainment" indicates that ambient air quality is not in violation of the established standard for the specific criteria pollutant; (2) "Non-Attainment" indicates that the ambient air quality violates the ambient air quality standard for the specific air pollutant; and (3) "Unclassified" indicates that there is currently insufficient data for determining attainment or non-attainment. In addition to the above three designations, the State includes a subcategory of the non-attainment designation. The designation "Non-Attainment-Transitional" is given to non-attainment areas that are making progress and nearing attainment.

Overall, based on CARB's 2004 monitoring data, the air basins within the Project area are in attainment for nitrogen dioxide and sulfur dioxide, non-attainment for ozone and PM_{10}, and mixed classification for carbon monoxide and $PM_{2.5}$. The State attainment classifications for the criteria pollutants and "visibility reducing particulates" for the component air basins are summarized in Table 4.5.2-1 (California State Area Designations for Criteria Air Pollutants).

Table 4.5.2-1. California State Area Designations for Criteria Air Pollutants[1]

Component Air Basin	CO	PM_{10}	$PM_{2.5}$	O_3	NO_2	SO_2	VRP
South Coast Air Basin (Riverside County)	A	N	N	N	A	A	U
South Coast Air Basin (Orange County)	A	N	N	N	A	A	U
Salton Sea Air Basin (Riverside County)	A	N	N	N	A	A	U
Mojave Desert Air Basin (Riverside County)	U	N	N	N	A	A	U
San Diego Air Basin (San Diego County)	Ta	N	A	N	A	A	U

Notes:
1. A – attainment; CO – carbon monoxide; N – non-attainment; NO_2 – nitrogen dioxide; O_3 –ozone; $PM_{2.5}$ – fine particulate matter; PM_{10} – respirable particulate matter; SO_2 – Sulfur dioxide; T – non-attainment-transitional; U – unclassified; VRP – visibility reducing; articulates; CO monitoring for San Diego Air Basin stopped in 1992.

Source: California Air Resources Control Board

The 1990 amendments to the Federal Clean Air Act (CAA) require Federal agencies to conform to applicable State Implementation Plans (SIPs) in non-attainment areas. SIPS are state air quality regulations that provide for the implementation, maintenance, and enforcement of the National Ambient Air Quality Standards (NAAQS) and include emission limitations and control measures to attain and maintain the standards. Federal agencies are required to determine if proposed actions conform to the applicable SIP.

The USEPA has developed two conformity regulations for transportation and non-transportation projects. Transportation projects are governed by the "transportation conformity" regulations (40 CFR Parts 51 and 93). Non-transportation projects are governed by the "general conformity" regulations (40 CFR Parts 6, 51, and 93) described in the final rule for Determining Conformity of General Federal Actions to State or Federal Implementation Plans. Since the Project is a non-transportation project, only the general conformity rule applies.

- **Local Emissions and Air Quality Regulations**. The Project is located principally within Riverside County and in the SCAB, although the proposed transmission lines and

other network upgrades may extend into Orange, San Bernardino, and San Diego Counties. Besides SCAB, Riverside County also includes portions of Mojave Desert Air Basin and Salton Sea Air Basin. The SCAB encompasses the State's largest metropolitan region. Because of the geography (surrounding mountainous terrain), warm climate, and stagnant air conditions, the SCAB area is particularly prone to air quality problems. To ensure continued progress toward clean air and compliance with State and Federal requirements, the South Coast Air Quality Management District (SCAQMD) in conjunction with CARB and SCAG develops and updates AQMPs that contain tactics and strategies for reducing air pollutant emissions.

The AQMP proposes policies and measures to achieve Federal and State standards for healthful air in the SCAG and those portions of the Salton Sea Air Basin that are under SCAQMD's jurisdiction (i.e., Coachella Valley). Relevant rules and regulations incorporated in the AQMP include: (1) Rule 402 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site; (2) Rule 403 requires use of best available technologies to reduce the amount of particulate matter (dust) entrained in ambient air as a result of anthropogenic (e.g., construction) activities; and (3) Rule 1402 limits asbestos emissions from building demolition or renovation activities.

The Mojave Desert AQMD pertinent air quality rules are similar to the SCAQMD rules. Both Mojave Desert AQMD Rules 402 and 403 address nuisance dust suppression. Mojave Desert AQMD Rule 403.2 (Fugitive Dust Control for Mojave Desert Planning Area) is intended to ensure that the National Ambient Air Quality Standards for PM_{10} will not be exceeded due to anthropogenic sources of fugitive dust within the Mojave Desert Planning Area and to implement the control measures contained in the Mojave Desert Planning Area Federal PM_{10} Attainment Area. Similarly, the San Diego Air Pollution Control District Rule 51 (Nuisance) regulates the discharge of nuisance air contaminants including dust. It should be noted that the Riverside County portion of Salton Sea Air Basin is under the jurisdiction of SCAQMD. Orange County is under SCAB and is subject to SCAQMD rules and regulations.

4.6 Biological Resources

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations, and existing Etiwanda Generating Station, and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. Additionally, proposed underground facilities do not have the potentially to directly impact biological resources. As such, with regards to those facility sites, biological resources are not further addressed herein.

4.6.1 Biological Resources Environmental Setting

With regard to the impacts on climate change on the plant's ecosystems, the United Nation's Intergovernmental Panel on Climate Change (IPCC) reported: "Approximately 20-30% of the plant and animal species assessed so far are likely to be at increased risk of extinction if increases in global average temperatures exceed 1.5 to 2.5°C. For increases in global average

temperature exceeding 1.5-2.5°C and in concomitant atmospheric carbon concentrations, there are projected to be major changes in ecosystem structure and function, species' ecological interactions, and species' geographic ranges, with predominantly negative consequences for biodiversity, and ecosystem goods and services."[48]

The Project is located in the "Southern and Central California Chaparral and Oak Woodlands" and "Southern California Mountains" ecoregions.[49] Both ecoregions have a Mediterranean climate of hot, dry summers and moist, cool winters. Both ecoregions support or are dominated by relatively dense chaparral and oak woodlands.

In order to assess the Project's existing environmental setting, extensive, multi-year general and focused species-specific botanical and zoological surveys have been conducted, referenced in the FEIS, and summarized in Table 4.6.1-1 (Summary of Biological Resource Surveys, Quantities, and Year Performed).[50]

Table 4.6.1-1 Summary of Biological Resource Surveys, Quantities, and Year Performed

Survey Type	Survey Year						
	2001	2002	2003	2004	2005	2006	2007
General Biological Surveys	6	-	2	2	2	2	-
Special Status Plant Surveys	4	1	4	4	4	4	-
USFWS Protocol Surveys							
Coastal California Gnatcatcher	8	6	8	6	6	6	-
Least Bell's Vireo	8	8	8	8	8	8	-
Southwestern Willow Flycatcher	5	5	5	5	5	5	-
Spotted Owl	6	-	-	6	6	-	-
Arroyo Toad	6	-	-	6	6	6	-
Red-Legged Frog	4	-	4	4	-	-	-

Notes:
1. As reported in National Wildland Fire Outlook" (National Interagency Fire Center, May 1, 2007), the general Project area is experiencing a severe or exceptional drought. As indicated therein: "Below normal precipitation has occurred since October 2006" and the "lower third of the State has received less than 50% of normal precipitation since October 2006, with some areas on track for record setting dryness." Based on the presence of less-than-optimal site conditions, no field surveys were conducted in 2007.

Source Michael Brandman Associates

Biological surveys were conducted in all accessible areas proposed for the Project's major elements. Along the transmission line route, the survey areas included a minimum 500-foot wide band roughly centered on the proposed transmission alignments. Focused surveys were conducted only in accessible areas that provided suitable habitat as recommended by regulatory agencies including the USDA Forest Service, United States Fish and Wildlife Service (USFWS), and California Department of Fish and Game (CDFG).

[48]/ Intergovernmental Panel on Climate Change, Climate Change 2007: Climate Change Impacts, Adaptation and Vulnerability, Summary for Policymakers, Fourth Assessment Report, 2007, p. 8.

[49]/ Ecoregions delineate areas that have a general similarity in their ecosystems and in the types, qualities, and quantities of their environmental resources. They area based on unique combinations of geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology. Ecosystems are defined as areas having relative homogeneity in their ecological systems and their components. Factors associated with spatial differences in the quality and quantity of ecosystem components (including soils, vegetation, climate, geology, and physiography) are relatively homogeneous within an ecoregion (Source: Bureau of Land Management, Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States, June 2005, Appendix F).

[50]/ Michael Brandman Associates, Summary of 2006 Focused Survey Results for the Lake Elsinore Advanced Pumped Storage and Talega-Escondido – Valley/Serrano Interconnect Projects, Riverside and San Diego, California, August 31, 2006.

The Project is located across a broad area that encompasses the eastern portions of the Santa Ana and Elsinore Mountains, Lake Elsinore, and surrounding areas in southwestern Riverside County and northwestern San Diego County. Portions of the Project occur at the higher elevations of the Santa Ana and Elsinore Mountains within the CNF in areas that are relatively undisturbed. Those portions of the Project that are adjacent to Lake Elsinore, on the valley floor, are mostly developed or are heavily disturbed. There are numerous unimproved dirt roads and trails throughout area allowing relatively easy access to both the lower and upper reservoir sites, all powerhouse facilities, and transmission alignment. Land uses in the general Project vicinity include passive recreation in the CNF, along with residential and commercial development at lower elevations around Lake Elsinore.

Excluding the Talega-Escondido 69/230-kV transmission line, the Project locations are depicted, in part, on the United States Geological Survey (USGS) topographic maps for Alberhill, Fallbrook, Lake Elsinore, Lake Matthews, Margarita Peak, and Wildomar.

Focusing primarily on those portions of the Project located in Riverside County, presented below are separate discussions of existing topographic features, soil, existing plant communities, general wildlife, critical habitats, sensitive biological resources, natural communities, wildlife species, and regional habitat conservation plans.

- **Topographic features and soils**. The Project sites contain several distinct regional topographic features, including the eastern slopes of the Santa Ana and Elsinore Mountains, the Perris Uplands, and the Elsinore-Temecula Trough. The Project sites contain gently rolling hills at the lower elevations and steeper slopes at upper elevations, ranging in elevation from 1200 to 3400-feet above mean sea level (msl). The proposed Decker Canyon Reservoir and portions of the transmission alignment cross the northeast-facing slopes of the Santa Ana and Elsinore Mountains. The proposed Santa Rosa Substation and LEAPS Powerhouse and most of the Northern (Lake-Santa Rosa) segment of the transmission line occurs within the Elsinore-Temecula Trough, which runs along the northeast toe of the Santa Ana and Elsinore Mountains. Portions of the transmission lines also occur within the Perris upland area. The 39,540-acre San Mateo Canyon Wilderness area is located to the south of the proposed Decker Canyon Reservoir.

  Soils are typical of the southern California coastal plain and mountains and include 28 soil series. Descriptions and mapping of the numerous soil complexes are presented in soil survey reports conducted in Riverside, Orange, and San Diego Counties by the USDA (1978, 1971, and 1973, respectively).

  The proposed Lake-Case Springs transmission lines cross over an estimated 60 USGS-depicted blue-line (jurisdictional) drainages. Most of these drainages are considered ephemeral and do not exhibit any riparian habitat (dependent on streams or other water bodies). The transmission line routes cross two major watercourses containing flowing water during the general biological surveys (Los Alamos Creek and Temescal Wash). The proposed transmission line route crosses Temescal Wash southeast of the intersection of I-15 Freeway and Indian Truck Trail. This watercourse which lies north of Lee (Corona) Lake contains consistent flowing water during the winter and spring seasons. The proposed transmission alignment crosses Los Alamos Creek, a tributary of

San Mateo Creek. Los Alamos Creek has consistent flowing water during the winter and spring seasons but flows are intermittent during the summer months depending on the amount of rainfall received in the area.

- **Plant communities**. A portion of the Project occur on undeveloped land within the CNF. The most prevalent community is chamise chaparral with patches of non-native grassland found on mesas and gentler slopes at higher elevations west of the Santa Rosa Plateau area. The upper reservoir site occurs within natural chamise-dominated chaparral plant community and coast live oak riparian woodland. The underground high-head water conductor (penstock) system cross through areas dominated by dense chamise chaparral above 1600 to 1800-feet above msl and coastal sage scrub habitat below. The proposed Santa Rosa Substation and LEAPS Powerhouse and associated facilities will be located primarily within non-native grasslands. The low-head water conductor (tailrace) system would cross through developed areas, non-native grasslands, and then extend into Lake Elsinore. The Northern (Lake-Santa Rosa) segment of the proposed transmission line traverses a variety of plant communities with the lower elevation portion of that alignment being dominated by non-native grasslands and previously disturbed areas. The plant communities that are located along the Southern (Santa Rosa-Case Springs) segment of the proposed transmission line are dominated by dense chamise chaparral.

For the purpose of this assessment, a 500-foot wide study area, roughly centered on the proposed transmission alignment, was examined. The identified plant communities located within that study area are individually described below and summarized in Table 4.6.1-2 (Plant Communities – Approximate Acreage in the Study Area)[51]. The study area was examined for planning purposes only and is not intended to be equivalent to the Project's potential area of disturbance.

Table 4.6.1-2. Plant Communities – Approximate Acreage in the Study Area

Vegetation Community	Estimated Acreage (acres)		Pecentage (%)	
	TNHC[1]	FERC[2]	TNHC	FERC
Agriculture	46.3	-	1	-
Chamise Chaparral	3,114.6	3,304	60	39
Coastal Sage Scrub	173.4	173	3	2
Urban/Developed	498.4	500	10	6
Disturbed	375.2	310	7	4
Non-Native Grassland	651.5	819	13	10
Open Water	97.6	3,143	2	37
Coast Live Oak Riparian Forest[3]	46.1	175	<1	2
Southern Sycamore Adler Riparian Forest[3]	84.8	84	2	1
Southern Willow Scrub[3]	25.7	26	<1	<1
Total	5,113.6	8,578	100	100

Notes:
1. Michael Brandman Associates (2004)
2. Federal Energy Regulatory Commission (2007)
3. Identified as a sensitive natural community by the CNDDB

Source: Michael Brandman Associates

[51]/ Michael Brandman Associates, Final Biological Resource Study – Lake Elsinore Advanced Pumped Storage Project, Riverside County California, August 2003, p. 3-10.

◊ **Chamise chaparral**. Chamise chaparral is a natural plant community that is one of the most prevalent chaparral types in southern California. It is dominated by chamise (*Adenostoma fasciculatum*) and is typically associated with north-facing slopes at lower elevations, although at higher elevations (>2,000-feet above msl) it occurs on both north and south-facing slopes. The community is typically found on xeric slopes and ridges with shallow soils and mature stands are usually dense with little herbaceous understory. Typically, the area below the shrub layer is bare ground or a layer of leaf litter. Shrub heights vary from 4 to 8 feet tall.

Chamise chaparral occur throughout most of the proposed 500-kV transmission line. In addition to chamise, other common species associated with the community include manzanita (*Arctostaphylus spp*.), laurel sumac (*Molosma laurina*), ceanothus (Ceanothus spp.), scrub oak (*Quercus berberidifolia*), toyon (*Heteromeles arbutifolia*), sugar bush (*Rhus ovata*), and mountain mahogany (*Cercocarpus betuloides*). Chamise chaparral occurs off the valley floor at higher elevations (>1,500-feet above msl) within the Santa Ana Mountains. There is no chaparral habitat within the Elsinore-Temecula Trough or in the Perris Upland portion of the Project area.

◊ **Coastal sage scrub**. Coastal sage scrub occurs throughout southern California although it is generally considered sensitive by the regulatory agencies. This community consists of herbaceous plants and woody shrubs from 1-5 feet in height, that form a relatively open canopy. It is generally found in more arid environments than similar shrub communities such as chaparral. Typical vegetation consists of low-growing shrubs with patches of bare ground beneath the shrubs. It has been incorporated into the California sagebrush series described by Sawyer and Keeler-Wolf.

Coastal sage scrub mainly occurs in the northern portion of the general Project area, north and northwest of Lake Elsinore, and along the base of the foothills of the Santa Ana Mountains. Common species characteristic of this community include California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), California buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), and California bush sunflower (*Encelia californica*). Coastal sage scrub, as a habitat type, is limited to the northern portion of the Project area, below an elevation limit of approximately 2000-feet above msl.

◊ **Non-native grassland**. Non-native grassland, a prevalent community throughout California, is characterized by a dense to sparse cover of non-native, annual grasses often associated with numerous weedy species as well as some native annual forbs (wildflowers), especially in years of plentiful rain. Seed germination occurs with the onset of winter rains. Some plant growth occurs in winter, but most growth and flowering occurs in the spring. Plants then die in the summer, and persist as seeds in the uppermost layers of soil until the next rainy season. Dominant plant genera typically found within non-native grasslands include bromes (*Bromus spp.*), wild oats (*Avena spp*.), fescues (*Vulpia spp*.), and barleys (*Hordeum spp*.).

Non-native grassland is the second most dominant vegetation community and is prevalent within three particular areas of the Project's sites. The largest acreage of grassland habitat is located along the Northern (Lake-Santa Rosa) segment of the proposed transmission line. The second area is located around Lake Elsinore and is typically associated with existing development and previous disturbance. The third area is located east of Redonda Mesa and Squaw Mountain near the Riverside-San Diego boundary in an area heavily grazed by cattle. Common characteristic species observed included slender oats (Avena barbata), red brome (Bromus rubens), hare barley (Hordeum vulgare), and telegraph weed (Heterotheca grandiflora).

◊ **Southern coast live oak woodland and riparian forest**. Southern coast live oak woodlands and riparian forests are broad-leaved communities dominated by coast live oaks (*Quercus agrifolia*). Woodlands are typically associated with ephemeral drainage features or north-facing slopes in southern California, with riparian forests found in wetter drainages. The communities vary in canopy coverage from closed to partially open and the understory of the community generally contains thick leaf litter with mostly no shrub layer. Evergreen coast live oak trees can reach 30 to 80 feet in height and usually occur on north-facing slopes or south-facing slopes within shaded ravines. The communities are incorporated into the coast live oak series described by Sawyer and Keeler-Wolf.

Southern coast live oak woodlands and riparian forests occur in three main locations. They are present along the Northern (Lake-Santa Rosa) segment of the proposed transmission line; within the areas of the upper reservoirs; and along the Southern (Santa Rosa-Case Springs) segment of the proposed transmission line east of Redonda Mesa and Squaw Mountain near the Riverside-San Diego boundary, adjacent to non-native grassland habitat. Dominant plant species present include coast live oak and scattered California black walnut trees (J*uglans californica*). The understory is comprised of toyon, laurel sumac, poison oak (*Toxicodendron diversilobum*), and Mexican elderberry (*Sambucus mexicanus*). The herbaceous layer typically contains non-native species, such as ripgut brome (*Bromus diandrus*) and horehound (*Marrubium vulgare*).

◊ **Southern sycamore-alder riparian woodland**. Southern sycamore-alder riparian woodland occurs throughout drainage courses of southern California that contain available surface and/or sub-surface water flows. This habitat-type is a tall, winter-deciduous riparian community dominated by western sycamore (*Platanus racemosa*) and white alder (*Alnus rhombifolia*). Its canopy is usually open with an understory containing scattered stands of shrubby thickets. Southern sycamore-alder riparian woodland occur in several linear drainage courses at various locations. It occupies small areas along drainages located along the proposed transmission alignment. Common species present within the community include western sycamore, alder, mugwort (*Artemisia douglasiana*), California blackberry (*Rubus ursinus*), poison oak, Mexican elderberry, and stinging nettle (*Urtica dioca*).

◊ **Southern willow scrub**. Southern willow scrub is characterized by dense, broad-leafed, winter-deciduous riparian thickets that are dominated by several species of willows. Scattered emergent Fremont cottonwood (Populus fremontii) and western sycamore are also associated within this community. Most stands are too dense to allow understory development. Southern willow scrub is typically found on loose, sandy, or fine gravelly alluvium deposits near stream channels during flood flows. This early seral community type requires repeated flooding to prevent succession to southern cottonwood-sycamore riparian forest. Southern willow scrub is listed as a sensitive plant community by the CDFG. Southern willow scrub occupies a very small portion of the Project area and is specifically associated with a tributary drainage feature located immediately north of Lake Elsinore. Characteristic species within the community include black willow (Salix goodingii), arroyo willow (Salix lasiolepis), red willow (Salix laevigata), and mule fat (Baccharis salicifolia).

◊ **Agriculture**. Agricultural areas are regularly managed or cultivated and are not considered a natural plant community. Vegetation varies depending on agricultural use or crops planted but, generally, agricultural areas contain minimal native vegetation, except common ruderal (weedy) species. In areas that are not actively cultivated and in interstitial or marginal areas, the ground may be frequently disked or simply left fallow. Plant species found in such disturbed areas include telegraph weed, black mustard (*Brassica nigra*), and Russian thistle (*Salsola tragus*). In Riverside County, the Project area contain only one agricultural use, consisting of a 46.3-acre parcel north of Lake Elsinore at the intersection of Riverside Drive and Collier Avenue.

◊ **Urban/developed**. Urban/developed areas include pavement, concrete, buildings and structures, bridges, and permanent flood control measures. In developed areas, native plant species have been replaced by structures, landscaping, and maintained cleared, open space. Urban/developed areas are mainly found in the vicinity of Lake Elsinore. Landscaped areas are common in suburban residential landscapes and contain ornamental plant species, such as oleander (*Nerium oleander*) and tree-of-heaven (*Ailanthus altissima*), that are artificially manicured and irrigated. This type of vegetation provides fragmented low-value habitat for native wildlife species and is subject to noise and disturbance from traffic and other human activities.

◊ **Disturbed**. Numerous disturbed areas are scattered throughout the Project area. These areas have typically been recently cleared for various land uses, such as dirt access roads. In some areas native vegetation is slowly returning.

◊ **Open water**. Open water areas include Lake Elsinore and Lee (Corona) Lake. These areas are typically inundated with water year round and do not contain any surface vegetation. Although not a vegetation community, open water is a natural habitat for many fish and waterfowl, as well as a year-round source of water for other wildlife species. The edges of open water areas vary from unvegetated

banks to shores containing species typical of riparian or freshwater marsh communities, such as willow (*Salix spp*.) and cattail (*Typha spp*.).

- **General wildlife**. Many of the species that occur in the Project area can be found in several different plant communities. In general, more complex plant communities support more wildlife species than less complex communities. Following are discussions of wildlife species that typically occur on the Project sites, segregated by taxonomic group. Representative examples of each taxonomic group observed are provided.

  ◊ **Invertebrates**. Invertebrate activity was considered moderate during the biological and focused surveys due to weather conditions that were typically favorable. Sixteen different butterfly species were observed as well as several species of flesh flies, grasshoppers, and dragonflies.

  ◊ **Amphibians**. Terrestrial species may or may not require standing water for reproduction and avoid desiccation by burrowing underground, within crevices in trees, rocks, and logs, and under stones and surface litter during the day and dry seasons. Due to their secretive nature, terrestrial amphibians are rarely observed. Aquatic amphibians are dependent on standing or flowing water for reproduction. Such habitats include fresh water marshes and open water (lakes, reservoirs, permanent and temporary pools and ponds, and perennial streams). The Project area has the potential to support a variety of amphibians in the moister woodland areas and canyon bottoms. Lake Elsinore as well as perennial and intermittent drainage features are considered suitable habitat for breeding amphibians. No vernal pools were observed on the sites during biological surveys; however, they may be nonetheless present in the general vicinity of the Project. Five amphibian species were observed during the field surveys: California chorus frog (*Pseudacris cadaverina*), canyon treefrog (*Hyla arenicolor*), Pacific chorus frog (*Pseudacris regilla*), Coast Range newt (*Taricha torosa torosa*), and western toad (*Bufo boreas*).

  ◊ **Reptiles**. The Project sites have many essential reptilian habitat characteristics (disturbed open habitat with adjacent vegetation coverage) and have the potential to support a wide variety of species. Nine reptile species were observed within the Project area: western fence lizard (*Sceloporus occidentalis*), Coast (San Diego) horned lizard (*Phrynosoma coronatum blainvillii*), side-blotched lizard (*Uta stansburiana*), coastal western whiptail (*Aspidoscelis tigris tigris*), orange-throated whiptail (*Aspidoscelis hyperythra*), northern red-diamond rattlesnake (*Crotalus ruber ruber*), rosy boa (*Charina trivirgata*), gopher snake (*Pituophis melanoleucus*), and striped racer (*Masticophis lateralis*).

  ◊ **Birds**. Scrubland and riparian habitats provide foraging and cover for year-round and seasonal avian residents and for migratory songbirds. In addition, there are several canyons and washes within the vicinity of the sites, as well as Lake Elsinore, that may provide a steady water supply for migratory birds. Several common avian species were observed during the biological and focused surveys. California towhee (*Pipilo crissalis*) and Bewick's wren (*Thryomanes bewickii*)

were the most common species observed in coastal sage scrub. Western scrub-jays (*Aphelocoma californica*), bushtits (*Psaltriparus minimus*), and wrentits (*Chamaea fasciata*) were common in chaparral habitat. The oak woodland and southern willow scrub contained Nuttall's woodpecker (*Picoides nuttallii*), ruby-crowned kinglets (*Regulus calendula*), and yellow-rumped warblers (*Dendroica coronata*). The non-native grassland contained species such as western meadowlarks (*Sturnella neglecta*), song sparrows (*Melospiza melodia*), and western kingbirds (*Tyrannus verticalis*).

Many of the habitats (e.g., coastal sage scrub and non-native grassland) within the Project area provide optimal foraging opportunities for raptors and there are several perching locations within the surrounding areas. Evidence of nesting raptors occurred sporadically throughout the Project's sites. It is, therefore, likely that raptors nest within at least some portions of the Project area. Raptor species observed during surveys included red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperi*), American kestrel (*Falco sparverius*), great-horned owl (*Bubo virginianus*), barn owl (*Tyto alba*), California spotted owl (*Strix occidentalis occidentalis*), turkey vulture (*Cathartes aura*), and western screech owl (*Otus kennicottii*).

Lake Elsinore is a major body of water within the migratory flight pathway for numerous migratory bird species. Lake Elsinore and the surrounding areas provide suitable habitat for migration stop-overs and a refueling stop for migrant birds. Additionally, the area provides breeding habitat for several migrant bird species. However, because food productivity is low compared to other nearby lakes (Skinner, Mathews, Hemet), fewer birds use Lake Elsinore for migration stop-overs as compared to high productivity lakes such as the Salton Sea.

◊ **Mammals**. The diversity of habitats within the Project area is anticipated to support a variety of mammals. In most cases, mammal presence was deduced by diagnostic signs (track, scat, burrows). Mammal species observed or otherwise detected included Audubon's cottontail (*Sylvilagus audubonii*), dusky-footed woodrat (*Neotoma fuscipes*), California ground squirrel (Spermophilus beecheyi), mule deer (*Odocoileus hemionus*), opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and coyote (*Canis latrans*). Other large mammal species expected within the Project area, more specifically related to the transmission alignment, include mountain lion (*Felis concolor*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and long-tailed weasel (*Mustela frenata*).

◊ **Fish**. A detailed description of the fish found in Lake Elsinore is contained in the Lake Elsinore & San Jacinto Watershed Authority's "Final Fisheries Management Plan for Lake Elsinore, Riverside County, California."

- **Critical habitats**. Critical habitat is defined in Section 3 of the Federal Endangered Species Act (FESA) as: (1) the specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the FESA, on which are found those physical or biological features (a) essential to the conservation of the species and (b) that

may require special management considerations or protection; and (2) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. Critical habitat receives protection under Section 7 of the FESA through prohibition against destruction or adverse modification of critical habitat with regard to actions carried out, funded, or authorized by a Federal agency. Section 7 also requires conferences on Federal actions that are likely to result in the destruction or adverse modification of proposed critical habitat. Critical habitat designated (CHD) areas within the general vicinity of the projects are described below and and in Appendix C (Response to USFWS Comments Regarding Section 7 Consultation). As indicated, specific components of the Project are located within or in close proximity to designated critical habitat area for the Quino checkerspot butterfly, coastal California gnatcatcher (proposed), least Bell's vireo, southern willow flycatcher, and Munz's onion.[52]

◊ **Quino checkerspot butterfly**. Critical habitat for the Quino checkerspot butterfly (*Euphydryas editha quino*) (QCB) was established on April 15, 2002 (67 FR 18355-18395), totaling 171,605 acres in Riverside and San Diego Counties. As illustrated, in part, in Figure 4.6.1-1 (Critical Habitat Designations for the Quino Checkerspot Butterfly), areas located north of the I-15 (Corona and Escondido) Freeway, north of Lee (Corona) Lake are located within "Unit 1 – Lake Mathews Unit." Unit 1 encompasses about 14,250 acres within the northwestern portion of the County and occurs within the Northwest Riverside Recovery Unit described in the recovery plan.[53] All habitat identified as essential in this recovery unit is being designated as critical habitat, except the habitat within the "Lake Mathews Multi-Species Habitat Conservation Plan" (Lake Mathews MSHCP), which is excluded under Section 4(b)(2) of the FESA. About 540 acres of this unit is comprised of Federal lands, approximately 6,565 acres is State or local government land, and the remaining 7,145 acres is private land.

This unit is divided into two subunits: Harford Springs and Lake Mathews/Estelle Mountain Reserve. The Lake Mathews/Estelle Mountain Reserve subunit, which is about 6,050 acres in size, is currently not known to be occupied but is considered essential to the conservation of the species. This subunit contains the Lake Mathews population site. Quino checkerspot butterflies were last observed at the southern margin of Lake Mathews in 1982.

Essential habitat for the butterfly exists in the vicinity of Lake Mathews and within the Lake Mathews/Estelle Mountain Reserve established for the Stephens' kangaroo rat, located south of Lake Mathews.

[52]/ Critical habitat has also been established for a number of other species that have the potential to exist in the general area, including the Riverside fairy shrimp (66 FR 29384) and Santa Ana sucker (69 FR 8839). Critical habitat designation for other species, including the San Diego fairy shrimp (*Branchinecta sandiegonensis*) and tidewater goby (*Eucyclogobius newberryi*), has been proposed and is currently under consideration.

[53]/ United States Fish and Wildlife Service, Recovery Plan for the Quino Checkerspot Butterfly (Euphydryas editha quino), August 11, 2003.

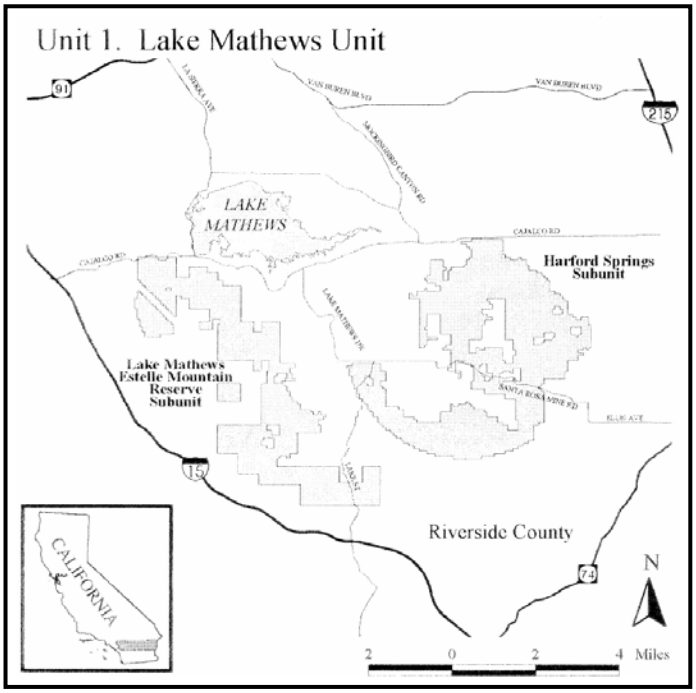

Figure 4.6.1-1. Critical Habitat Designations for the Quino Checkerspot Butterfly
Source: United States Fish and Wildlife Service

◊ **Coastal California gnatcatcher**. Critical habitat for the coastal California gnatcatcher (CGN) was designated on October 24, 2000 (65 FR 63680) and includes 513,650 acres of Federal, State, local, and private lands in Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties. Several lawsuits were subsequently filed challenging various aspects of the critical habitat designation, including the adequacy of the economic analysis. On June 11, 2002, the court granted the USFWS' request for a remand of the critical habitat designation (CHD) to allow for a reconsideration of the economic impacts associated with such designating and ordered the USFWS to complete a new proposed rule by April 11, 2003. Areas designated as critical habitat in the USFWS' 2000 final rule retain their designation until a new, revised final CHD becomes effective. On April 24, 2003, a proposed rule for the CAGN CHD was published in the Federal Register (68 FR 20228).[54]

[54]/ As indicated in the proposed rule: "To be included in a critical habitat designation, habitat must be either a specific area within the geographic area occupied by the species on which are found those physical or geographical features essential to the conservation of the species (primary constituent elements, as defined at 50 CFR 424.12[b]) and which require special management considerations or protection, or be specific areas outside of the geographic area occupied by the species which are determined to be essential for the conservation of the species. Habitat areas that support only a subset of the primary constituent elements are included only when they still perform the functions that make them essential" (68 FR 20233). Primary constituent elements for the CAGN include those habitat components providing foraging, nesting, rearing of young, intraspecies communication, roosting, dispersal, genetic exchange, or sheltering. Primary constituent elements include, but are not limited to, the following plant communities: Riversidean sage scrub, Riversidean alluvial fan scrub, and coastal sage-chaparral scrub (68 FR 20239). One of the critical habitat units identified in the proposed rule was Unit 6 (Southern NCCP Subregion of Orange County and Marine Corps Base Camp Pendleton). Unit 6 encompasses approximately 44,340 acres within the planning area for the "Southern Natural Community Conservation Plan Subregion" of Orange County. Camp Pendleton contains a coastal corridor of gnatcatcher-occupied sage scrub that provides the primary linkage between San Diego populations and those in southern Orange County. Another corridor of gnatcatcher-occupied sage scrub occurs along the Santa Margarita River valley that branches inland, connecting with habitat in the Fallbrook Naval Weapons Station (Unit 4) and further north into southwestern Riverside County (Unit 10).

On December 19, 2007, the USFWS published its final rule "designating revised final critical habitat for the coastal California gnatcatcher under the Endangered Species Act of 1973, as amended. In total, approximately 197,303 acres (79,846 hectares) of habitat in San Diego, Orange, Riverside, San Bernardino, Los Angeles, and Ventura Counties, California, are being designated as critical habitat for the coastal California gnatcatcher" (72 FR 72010).[55]

As illustrated in part in Figure 4.6.1-2 (Critical Habitat Designations - Coastal California Gnatcatcher - Unit 10 [San Bernardino and Riverside Counties, California]), in the general Project area, final critical habitat areas for the CGN include encompasses a total of approximately 27,529 acre (11,140 hectares) the majority of which is under private and Federal (USDA Forest Service, BLM) ownership. Of this total, 21,776 acres (8,812 hectares) are in the "Western Riverside County Multiple-Species Habitat Conservation Plan" (Western Riverside County MSHCP) plan area and approximately 5,757 acres (2,330 hectares) are within southern San Bernardino County adjacent to the planning area for the Western Riverside County MSHCP. Of the 21,776 acres (8,812 hectares) in the Western Riverside County MSHCP plan area being designated as critical habitat, 10,176 acres (4,118 hectares) are owned by the Metropolitan Water District who is not a permittee to the MSHCP and therefore not being excluded from this final designation. An additional 199 acres (81 hectares) of private land in the Western Riverside County MSHCP plan area are also not being excluded from this final designation. These 199 acres (81 hectares) are covered under a settlement agreement and Memorandum of Understanding (MOU) signed on February 24, 2004, by the County of Riverside and several property owners, including Murdock Alberhill, the owner of these 199 acres (81 hectares), which specifically exempts and excludes these landowners' properties from the Western Riverside County MSHCP. Therefore, the199 acres (81 hectares) owned by Murdock Alberhill are not required to be managed for coastal California gnatcatcher consistent with the Western Riverside County MSHCP.

The remaining 11,401 aces (4614 hectares) being designated in the Western Riverside County MSHCP plan area are under Federal ownership (BLM and USDA Forest Service). Since these lands contain the features essential to the conservation of the species and may require special management considerations and protection, they are being included in this revised final designation.

[55]/ As noted in the final rule: "We have re-examined the inclusion of lands on these three military installations [Naval Weapons Station Seal Beach, Detachment Fallbrook, Marine Corps Base Camp Pendleton, and Marine Corps Air Station Miramar] in light of the National Defense Authorization Act for Fiscal Year 2004, which amended the [Endangered Species] Act. Specifically, section 4(a)(3)(B) of the Act states that the Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an INRMP prepared under section of the Sikes Act, if the Secretary determines in writing that such plan provides a benefit is proposed for designation. Following a review of the INRMPs [Integrated Natural Resource Management Plans] prepared for each of these three installations, we have determined that the approved INRMPs fore each provides a benefit the coastal California gnatcatcher, its habitat, and we have exempted these lands from this final designation under section 4(a)(3) of the Act.

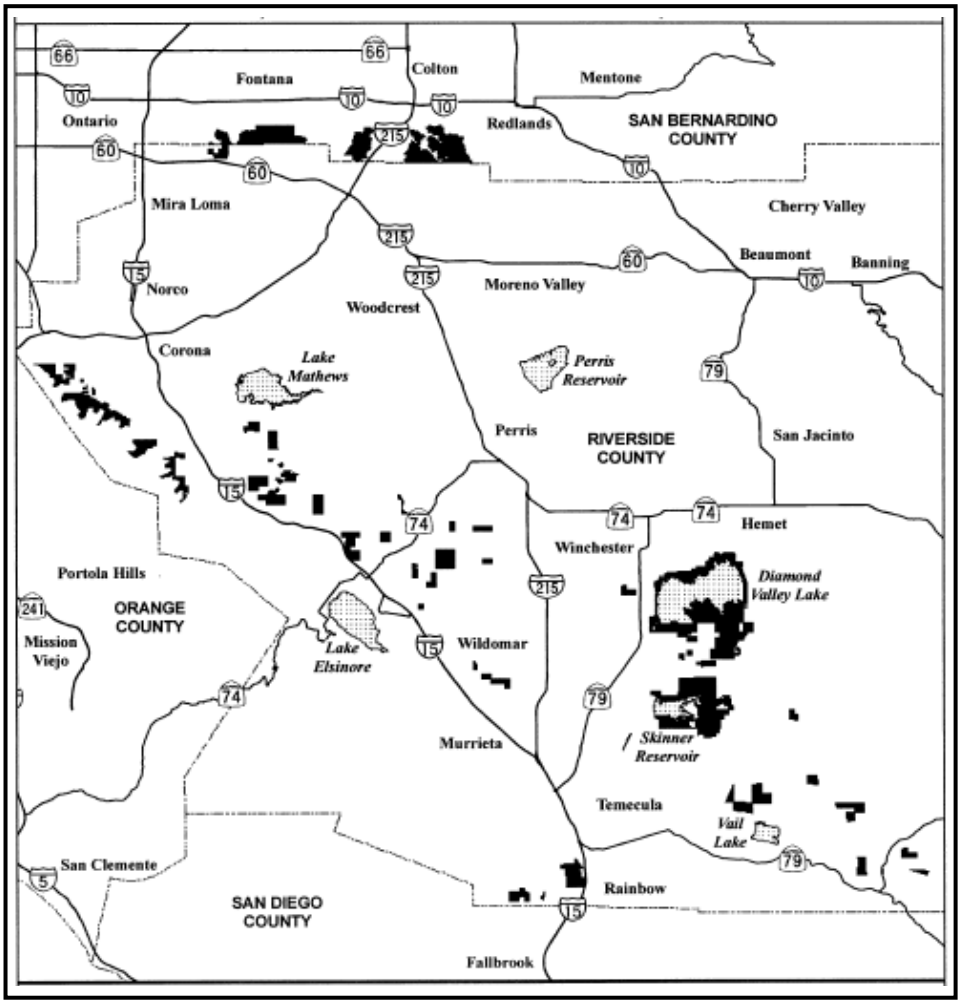

Figure 4.6.1-2. Critical Habitat Designations for the Coastal California Gnatcatcher - Unit 10 (San Bernardino And Riverside Counties, California)
Source: United States Fish and Wildlife Service

This unit also encompasses contiguous habitats in southern San Bernardino County, including essential CGN populations in the Jurupa Hills, and the Blue Mountain/Reche Canyon region. Though not included, the Santa Ana River may be an important movement corridor in this area, connecting the Jurupa and La Loma Hills to populations in the Box Springs Mountains, as well as to the few pairs known from the Pedley Hills and Norco Hills. Though a few coastal CGN have been observed from the upper Santa Ana River wash in the vicinity of Highland, we do not yet have evidence that this area constitutes a core population. Further survey work in this area may help clarify its use by the CGN.

Habitat within this unit is being designated because it was occupied at the time of listing, is currently occupied, and contains all of the features essential to the conservation of the CGN. Additionally, this unit provides for connectivity and genetic interchange among core populations and contains large blocks of high-quality habitat capable of supporting persistent populations of CGN.

◊ **Munz's onion**. On June 7, 2005, as illustrated, in part, in Figure 4.6.1-3 (Critical Habitat Designation for the Munz's Onion), the USFWS issued a final rule (70 FR 33015-33033) establishing a CHD for the Munz's onion, totally 176 acres. As indicated in that final rule: "We [USFWS] have not designated critical habitat on U.S. Forest Service lands that fall within the LEAPS corridor. Our analysis indicates that the primary constituent elements are not present along the easternmost boundary of the proposed critical habitat unit and, therefore, those lands have not been designated as critical habitat" (70 FR 33030).

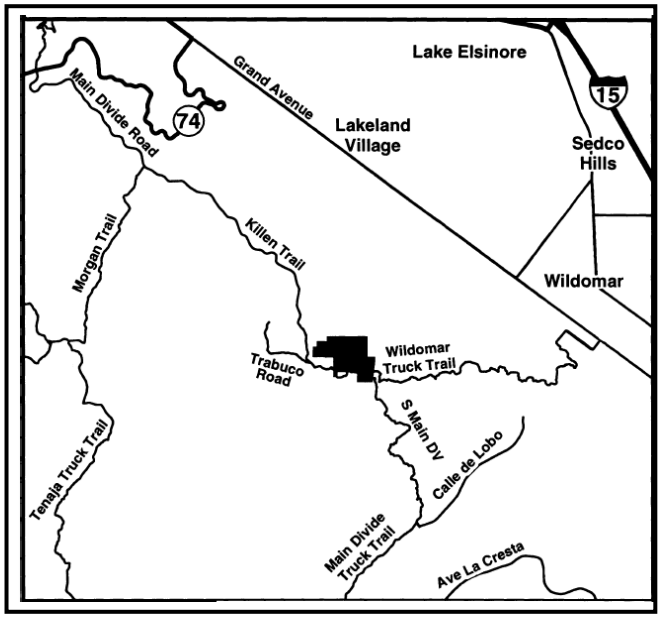

Figure 4.6.1-3. Critical Habitat Designation for the Munz's Onion
Source: United States Fish and Wildlife Service

◊ **Southern willow flycatcher**. On July 22, 1997, as illustrated, in part, in Figure 4.6.1-4 (Critical Habitat Designations for the Southern Willow Flycatcher), the USFWS issued a final rule (62 FR 39129-39147) establishing a CHD for the southern willow flycatcher (*Empidonax traillii extimus*) (SWF) in California, Arizona, and New Mexico, totaling approximately 599 miles of streams and rivers. Designated areas include the remaining known SWF nesting sites, formally supported nesting sites, and areas having the potential to support nesting sites. Along the Talega-Escondido transmission line, CHD include segments of the Santa Margarita and San Luis Rey Rivers. Both areas are described below.

- Santa Margarita River, San Diego County. About 20 miles from an unnamed trail (T8S, R3W, Section 34) downstream to the northbound I-5 Freeway. The boundaries include areas within the 100-year floodplain, where thickets or riparian trees and shrubs occur or may become established as a result of natural floodplain processes or rehabilitation.

- San Luis Rey River, San Diego County. Approximately 24 miles from Mission Road downstream to the northbound I-5 Freeway. The

boundaries include areas within the 100-year floodplain, where thickets or riparian trees and shrubs occur or may become established as a result of natural floodplain processes or rehabilitation.

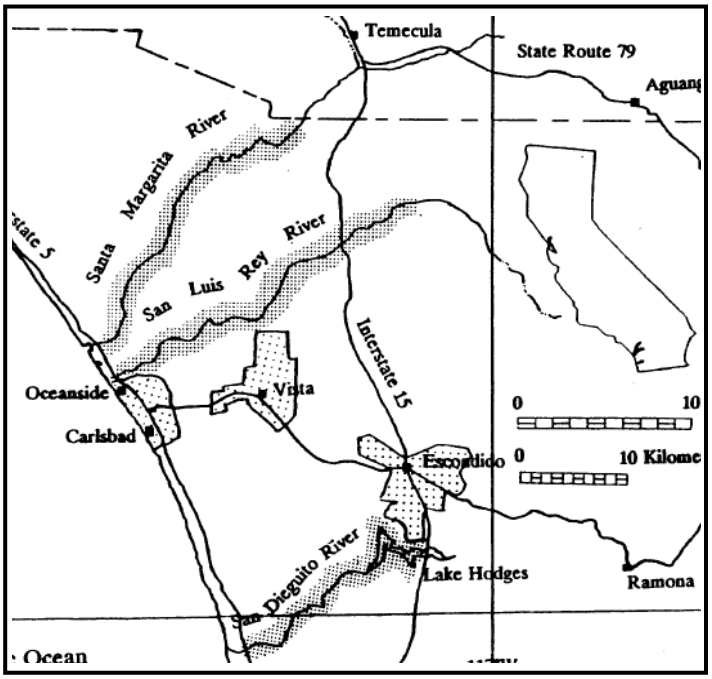

Figure 4.6.1-4. Critical Habitat Designations for the Southwest Willow Flycatcher
Source: United States Fish and Wildlife Service

◊ **Least Bell's vireo**. On February 2, 1994, as illustrated, in part, in Figure 4.6.1-5 (Critical Habitat Designations for the Least Bells' Vireo), the USFWS issued a final rule (59 FR 4845) establishing a CHD for the least Bell's vireo on 38,000 acres at 10 localities in six California counties (including Riverside and San Diego Counties). Critical habitat has been established along the Santa Margarita River (north of the City of Fallbrook) and along the San Luis Rey River.

◊ **Arroyo Toad**. On April 13, 2005 (70 FR 19562), the USFWS adopted critical habitat for this species. The final rule substantially altered the critical habitat areas identified in the proposed rule (66 FR 9414), including the elimination of the San Juan Creek Basin (Unit 10), San Mateo Basin (Unit 11), Lower Santa Margarita Basin (Unit 12), Lower and Middle San Luis Rey Basin (Unit 14), and Cottonwood Creek Basin (Unit 19). In addition, the USFWS revised the criteria used to identify essential stream reaches and to identify essential upland habitat so as to extend only 1,640 feet (500 meters) distance from the essential stream. In the general Project area, only the San Jacinto River Basin (Unit 9) in Riverside County and the Lower Santa Ana River Basin/Santiago Creek (Unit 8) in Orange County were retained. In the San Juan Creek Basin in Orange County (Unit 10), all essential lands were excluded from critical habitat designation for economic reasons (70 FR 19586). Those areas included portions of San Juan Creek and adjacent uplands in the San Juan Creek Basin.

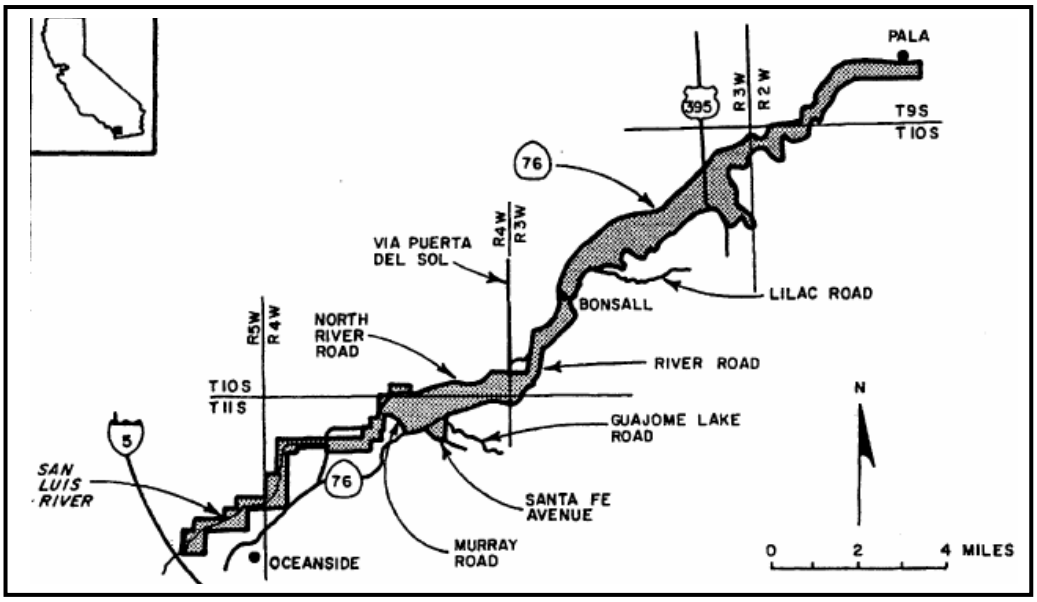

Figure 4.6.1-5. Critical Habitat Designations for the Least Bell's Vireo
Source: United States Fish and Wildlife Service

As indicated by the USFWS: "Unit 10 contains a vital arroyo toad population in the San Juan Creek Basin that was known to be occupied at the time the species was listed." In the San Mateo Creek and San Onofre Creek Basins (Unit 11) in San Diego County, all essential lands in Unit 11 were either excluded for economic reasons or exempted from critical habitat designation due to Camp Pendleton's "Integrated National Resource Management Plan – Marine Corps Base and Marine Corps Air Station Camp Pendleton" (INRMP) (70 FR 19587).

A recovery plan for the arroyo southwestern toad was approved by the USFWS on July 24, 1999 and discusses the species presence in both the San Juan Creek Basin (Orange and Riverside Counties) and San Mateo Creek Basin (Orange, Riverside, and San Diego Counties). As indicated therein, surveys by the CDFG and USDA Forest Service "found arroyo toads in the drainage from Interstate 5 near San Juan Capistrano, Orange County, upstream through Ronald W. Caspers WIldnerness Park and the Cleveland National Forest, to the Upper San Juan Campground area, Riverside County. . .The toads are present also in the headwaters of San Mateo Creek and some tributaries in the San Mateo Canyon Wilderness within the Cleveland National Forest."[56]

- **Sensitive botanical resources**. Sensitive biological resources are habitats or individual species that have special recognition by Federal, State, or local conservation agencies and organizations as endangered, threatened, or rare. The following discussion provides a summary of the sensitive biological resources observed and potentially occurring within the Project area. The potential for a species to occur is based upon its known geographic range, elevational distributions, and presence of preferred habitat. Plant species include species listed under FESA and/or California Endangered Species Act (CESA), as well as

[56]/ United States Fish and Wildlife Service, Arroyo Southwestern Toad (Bufo microscaphus californicus) Recovery Plan, July 24, 1999, pp. 24 and 25.

numerous other non-listed special plants that are designated as rare or otherwise significant or sensitive by the USDA Forest Service, USFWS, CDFG, or California Native Plant Society (CNPS). As listed in Table 4.6.1-3 (Special Status Plant Species), the review of these records produced a preliminary list of 76 special status plant species that are known to occur in the general vicinity of the Project. The Applicant's biologists considered the range and habitat needs of each of these 76 species to determine which taxa (species, subspecies, or varieties) warranted field surveys. Forty-five species were determined not to be likely to occur within the Project area or were considered to have a low potential for occurrence.

Thirty-three taxa are considered to have a moderate or high potential to occur with the Project area based on their known (or postulated) range and suitable habitat found within Project sites. Three of these species were observed during six years of focused surveys, rainbow manzanita (*Arctostaphylos rainbowensis*), Coulter's matilija poppy (*Romneya coulteri*), and Humboldt lily (*Lilium humboldtii*). Two more species were recorded to occur within the immediate vicinity of the Project sites, Munz's onion (*Allium munzii*) and Hammitt's clay-cress (*Sibaropsis hammittii*).[57] In addition, 28 sensitive plant species have a moderate to high potential to occur within the Project area. Seven of these species are listed as endangered or threatened under FESA and/or CESA, including Munz's onion, slender-horned spineflower (*Dodecahema leptoceras*), San Diego ambrosia (*Ambrosia pumila*), San Diego button celery (*Eryngium aristulatum var. parishii*), Nevin's barberry (*Berberis nevinii*), Parish's meadowfoam (*Limnanthes gracilis ssp. parishii*), and California Orcutt grass (*Orcuttia californica*).

Based upon the findings of habitat assessments conducted between 2001 and 2006, as illustrated in Figure 4.6.1-6 (Focused Special Status Plant Survey Areas),[58] it was determined that suitable habitat for ten special status plant species occur within the Project area. In 2006, focused surveys were conducted in those on-site areas containing suitable habitat in order to determine the presence/absence of the following species: Munz's onion, Braunton's milkvetch (*Astragalus brauntonii*), San Diego thornmint (*Acanthomintha ilicifolia*), rainbow manzanita, Nevin's barberry, thread-leaved brodiaea (*Brodiaea filifolia*), slender-horned spineflower, Santa Monica Mountains dudleya (*Dudleya cymosa* ssp. *marcescens*), Coulter's Matilija poppy, and Humboldt lily.

- Sensitive natural communities. The California Natural Diversity Database (CNDDB) lists eight special status plant communities as occurring within the general Project area: canyon live oak ravine forest, southern coast live oak riparian forest, southern cottonwood willow riparian forest, southern interior basalt flow vernal pool, southern riparian forest, southern sycamore alder riparian woodland, southern willow scrub, and valley needlegrass grassland. These communities are considered sensitive due to limited distribution, historic losses, and perceived threats, such as further losses to urban development and degradation of habitat quality by human disturbance, including invasion by exotic ruderal species.

[57]/ Although observed within the general vicinity, focused on-site surveys for those species were negative.

[58]/ Michael Brandman Associates, Sensitive Plant Focused Survey Report - Lake Elsinore Advanced Pumped Storage and Talega-Escondido/Valley-Serrano Interconnect Projects, Riverside and San Diego Counties, California, August 28, 2006.

Table 4.6.1-3. Special-Status Plant Species

Species		Status			Life Form	Blooming Period	Habitat Association (elevation range [feet])	Potential for Occurrence in Project Area
Scientific Name	Common Name	USFWS	CDFG	Other				
Acanthomintha ilicifolia	San Diego thorn-mint	FPE	SE	1B FS	Annual herb	Apr - Jun	Chaparral, coastal scrub, vernal pools (clay), valley foothill grasslands (30 to 3,000)	Moderate - Observed in vicinity of the sites. Suitable habitat present.
Abronia villosa var. aurita	Chaparral sand-verbena	None	None	1B	Annual herb	Jul - Aug	Sandy benches and floodplains with openings in coastal sage scrub or chaparral (< 5,000)	Unlikely - Herbarium specimens collected near Lake Elsinore but no suitable habitat found in coastal sage scrub in the sites.
Allium munzii	Munz's onion	FE	ST	1B FS	Perennial herb (bulbiferous)	Mar - May	Chaparral, coastal scrub, cismontane woodland, pinyon-juniper woodland, grassland (1,000 to 3,400)	High - Known from the immediate vicinity. Suitable habitat present in sites. No recently recorded occurrences within the sites.
Ambrosia pumila	San Diego ambrosia	FE	None	1B	Perennial herb (rhizomatous)	Jun - Sep	Upper terraces of rivers, openings in coastal scrub and grassland, occ. adjacent to vernal pools (<1,300)	Moderate - Known from one disjunct population NE of Lake Elsinore. Suitable habitat potentially present.
Arctostaphylos rainbowensis	Rainbow manzanita	None	None	1B FS	Shrub (evergreen)	Jan - Feb	Chaparral (900 to 2,600)	Observed - Observed onsite during focused surveys.
Astragalus brauntonii	Braunton's milk-vetch	FE	None	1B FS	Perennial herb	Mar - Jul	Closed-cone conifer forests, chaparral, coastal sage scrub, grasslands, recently burned or disturbed areas, associated with carbonate deposits. (10 to 2,100)	Unlikely - No known occurrences in the vicinity. Suitable habitat is present but the sites lie well east of known species' range.
Astragalus deanei	Deane's milk vetch	None	None	1B FS	Perennial herb	Feb - May	Chaparral, coastal scrub, riparian scrub (240 to 2,200)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Astragalus douglasii	Jacumba milk vetch	None	None	1B FS	Perennial herb	Apr - Jun	Chaparral, cismontane woodland, valley and foothill grassland/rocky (3,000 to 4,500)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Astragalus oocarpus	San Diego milk vetch	None	None	1B FS	Perennial herb	May - Aug	Chaparral (openings), cismontane woodland (1,000 to 5,000)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Astragalus pachypus var. jaegeri	Jaeger's milk vetch	None	None	1B FS	Shrub	Dec - June	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland Sandy or rocky (1,200 to 3,000)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Atriplex coronata var. notatior	San Jacinto Valley crownscale	FE	None	1B	Annual herb	Apr - Aug	Playas, chenopod scrub, grassland, vernal pools (1,300 to 1,700)	Low - Known from the vicinity but only marginally suitable habitat occurs in the sites.

Table 4.6.1-3. Special-Status Plant Species (Continued)

Species		Status			Life Form	Blooming Period	Habitat Association (elevation range [feet])	Potential for Occurrence in Project Area
Scientific Name	**Common Name**	**USFWS**	**CDFG**	**Other**				
Baccharis vanessae	Encinitas baccharis	FT	SE	1B FS	Shrub (deciduous)	Aug - Nov	Chaparral, sandstone deposits (<2,400)	Unlikely - No known occurrences in the vicinity. Suitable habitat is present but the sites lie well east of known species' range.
Berberis nevinii	Nevin's barberry	FE	SE	1B FS	Shrub	Mar - Apr	Chaparral, cismontane woodland, coastal sage scrub, riparian scrub, sandy or gravelly soils (<2,000)	Moderate - Known populations well documented - none known from the vicinity. However, suitable habitat occurs in the sites.
Brodiaea filifolia	Thread-leaved brodiaea	FT	SE	1B FS	Perennial herb (bulbiferous)	Mar - Jun	Coastal scrub, cismontane woodland, grasslands, vernal pools, clay soils (<2,800)	Unlikely - Not known from the immediate vicinity. Sites lie outside the species' range.
Brodiaea orcuttii	Orcutt's brodiaea	None	None	1B FS	Perennial herb (bulb)	May - Jun	Chaparral, meadows, valley grasslands (<5,300)	High - Known from the vicinity. Suitable habitat present in the sites.
Calochortus dunnii	Dunn's Mariposa lily	None	SR	1B FS	Perennial herb (bulbiferous)	May - Jun	Closed-cone conifer forest, chaparral/gabbroic (1,200 to 6,000)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Calochortus plummerae	Plummer's Mariposa lily	None	None	1B	Bulbiferous herb	May - Jul	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest, rocky or sandy sites (280 to 5,000)	Moderate - Recorded occurrence in vicinity of the sites. Suitable habitat present.
Calochortus weedii var. intermedius	Intermediate Mariposa lily	None	None	1B FS	Bulbiferous herb	May - Jul	Coastal scrub, chaparral, valley, and foothill grassland in dry, rocky open slopes and rock outcrops (600 to 2,805)	Unlikely - Not known from the vicinity. No suitable habitat observed in the sites.
Castilleja lasiorhyncha	San Bernardino Mountains owls' clover	None	None	1B FS	Annual herb	Jun - Aug.	Chaparral, meadows and seeps, pebble plain, upper montane coniferous forest/mesic (4,250 to 7,800)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Caulanthus simulans	Payson's jewel flower	None	None	4 FS	Annual herb	Mar - Jun	Chaparral and coastal scrub, sandy soils granitic substrate (300 to 7,200)	Unlikely - Not known from the vicinity. No sandy areas observed in coastal sage scrub habitat in the sites.
Ceanothus cyaneus	Lakeside ceanothus	None	None	1B FS	Shrub, evergreen	Apr - Jun	Closed-cone conifer forest, chaparral (700 to 1,900)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Ceanothus ophiochilus	Buckthorn	None	None	1B FS	Shrub	Feb - Mar	Chaparral (gabbroic or pyroxenite-rich outcrops). (1,900 to 3,500)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.

Table 4.6.1-3. Special-Status Plant Species (Continued)

Species		Status			Life Form	Blooming Period	Habitat Association (elevation range [feet])	Potential for Occurrence in Project Area
Scientific Name	Common Name	USFWS	CDFG	Other				
Centromadia pungens ssp. laevis	Smooth tarplant	None	None	1B	Annual herb	Apr - Sep	Chenopod scrub, wet meadows, seeps, playas, riparian woodlands, alkaline soils (<1,600)	Unlikely - Not known in vicinity. No suitable habitat.
Chorizanthe parryi var. parryi	Parry's spineflower	None	None	3	Annual herb	Apr - Jun	Sandy openings in chaparral, coastal scrub (<5,600)	Unlikely - Not known from the vicinity. No sandy areas observed in coastal sage scrub in the sites.
Chorizanthe polygonoides var. longispina	Long-spined spineflower	None	None	1B FS	Annual herb	Apr - Jul	Chaparral, coastal scrub, meadows, grassland (<4,800)	High - Known from the vicinity. Suitable habitat occurs in the sites.
Chorizanthe procumbens	Prostrate spineflower	None	None	None	Annual herb	Apr - Jun	Coastal sage scrub, chaparral (< 2,600)	Moderate - Not known from the immediate vicinity. Suitable habitat occurs, and the sites lie well within the species' range.
Clarkia delicata	Delicate clarkia	None	None	2 FS	Annual herb	May - Jun	Chaparral, cismontane woodland (770 to 3,300)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Comarostaphylis diversifolia ssp. Diversifolia	Summer holly	None	None	1B	Shrub (evergreen)	Apr - Jun	Chaparral (<1,800)	High - Known from the vicinity. Suitable habitat present in the sites.
Cupressus forbesii	Tecate cypress	None	None	1B FS	Tree, evergreen	N/A	Closed-cone conifer forest, chaparral (840 to 4,900)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Cupressus stephensonii	Arizona cypress	None	None	1B FS	Tree	N/A	Closed-cone coniferous forest, chaparral, riparian scrub/ gabbroic (3,400 to 5,600)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Delphinium hesperium Gray ssp. cuyamacae	Cuyamaca larkspur	None	None	1B FS	Perennial herb	Jun - Jul	Lower montane coniferous forest, meadows and seeps/Mesic (4,000 to 5,400)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Dodecahema leptoceras	Slender-horned spineflower	FE	SE	1B FS	Annual herb	Apr - Jun	Sandy alluvial benches, floodplain terraces with alluvial fan sage scrub (700 to 2,500)	High - Known from Temescal Wash in the vicinity. Potentially suitable habitat occurs in Temescal Wash in the sites.
Dudleya cymosa	Canyon live-forever	None	None	1B FS	Perennial herb	Mar - Jun	Chaparral and coastal scrub habitats (400 to 1,800)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Dudleya multicaulis	Many-stemmed dudleya	None	None	1B FS	Perennial herb	May - Jul	Chaparral, coastal scrub (<2600)	High - Known from the vicinity. Suitable habitat occurs in the sites.
Dudleya viscida	Sticky dudleya	None	None	1B FS	Perennial herb	May - Jun	Coastal scrub, coastal bluff scrub, chaparral (<1,800)	High - Known from the vicinity. Suitable habitat present in the sites.

Table 4.6.1-3. Special-Status Plant Species (Continued)

Species		Status			Life Form	Blooming Period	Habitat Association (elevation range [feet])	Potential for Occurrence in Project Area
Scientific Name	Common Name	USFWS	CDFG	Other				
Erodium macrophylum	Round-leaved filaree	None	None	1B	Annual herb	Mar - May	Cismontane woodland, valley and foothill grassland, clay soils (45 to 3,700)	Moderate - Known from the vicinity. Suitable habitat present.
Eryngium aristulatum var. parishii	San Diego button-celery	FE	SE	1B	Annual/ perennial herb	Apr - Jun	Vernal pools, coastal scrub, grassland (<2,000)	Moderate - Not known from the immediate vicinity. Suitable habitat occurs, and the sites lie well within the species' range.
Fremontodendron mexicanum	Mexican flannel bush	FE	SR	1B FS	Shrub	Mar - June	Closed-cone coniferous forest, chaparral, cismontane woodland/gabbroic, metavolcanics, or serpintinite (320 to 1,600)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Githopsis diffusa ssp. filicaulis	San Gabriel bluecup	None	None	3 FS	Annual herb	Apr - Jun	Chaparral (mesic disturbed areas) (1,500 to 2,300)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Harpagonella palmeri	Palmer's Grapplinghook	None	None	4	Annual herb	Mar - May	Chaparral, coastal sage scrub, valley and foothill grassland (70 to 3,100)	Moderate - Not known from the immediate vicinity. Suitable habitat occurs, and the sites lie well within the species' range.
Hemizonia floribunda	Tecate tarplant	None	None	1B FS	Annual herb	Aug - Oct	Chaparral, coastal scrub (230 to 4,000)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Hemizonia mohavensis	Mojave tarplant	None	None	1B FS	Annual herb	Jul - Oct	Chaparral, riparian scrub (2,780 to 5,250)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Horkelia cuneata ssp. puberula	Mesa horkelia	None	None	1B	Perennial herb	Feb - Jul	Chaparral, cismontane woodland, coastal scrub, sandy or gravelly soils. (220 to 2,500)	Moderate - Known from the vicinity. Suitable habitat present.
Horkelia truncata	Ramona horkelia	None	None	1B FS	Perennial herb	May - Jun	Chaparral, cismontane woodland (1,300 to 4,300)	High - Known from the vicinity. Suitable habitat present.
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	None	None	1B	Annual herb	Feb - Jun	Vernal pools, playas, marshes (<5,000)	Moderate - Not known from the immediate vicinity. Suitable habitat occurs, and the sites lie well within the species' range.
Lepechinia cardiophylla	Heart-leaved pitcher sage	None	None	1B FS	Shrub	Apr - Jul	Closed-cone forest, chaparral, cismontane woodland (1,800 to 4,500)	High - Known from the vicinity. Suitable habitat present in the sites.
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	None	None	1B	Annual herb	Jan - Jul	Chaparral, coastal scrub, dry soils (1 to 2,930)	Moderate - Recorded occurrence in the vicinity of the sites. Suitable habitat present.

Table 4.6.1-3. Special-Status Plant Species (Continued)

Species		Status			Life Form	Blooming Period	Habitat Association (elevation range [feet])	Potential for Occurrence in Project Area
Scientific Name	Common Name	USFWS	CDFG	Other				
Lessingia glandulifera var. tomentosa	Warner springs Lessingia	None	None	1B FS	Annual herb	Aug - Oct	Chaparral (sandy) (2,800 to 4,000)	Low - Not known from the immediate vicinity. Suitable habitat occurs, and the sites lie outside the species' range.
Lilium parryi	Lemon lily	None	None	1B FS	Perennial herb	Jul - Aug	Lower montane coniferous forest, meadows and seeps, riparian scrub, upper montane coniferous forest/Mesic (4,360 to 8,500)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Lilium humboldtii ssp. ocellatum	Humboldt lily	None	None	4	Perennial herb	May - Jul	Chaparral, Cismontane woodland, lower montane coniferous forest (300 to 3,600)	Observed - Observed onsite during focused surveys.
Limnanthes gracilis ssp. parishii	Parish's meadow foam	None	SE	1B FS	Annual herb	Apr - Jun	Wet meadows, seeps, vernal pools (2,000 to 5,800)	Moderate - Not known from the immediate vicinity. Suitable habitat occurs, and the sites lie well within the species' range.
Linanthus orcuttii	Orcutt's linanthus	None	None	1B FS	Annual herb	May - June	Chaparral, lower montane coniferous forests in gravelly clearings (3,000 to 7,000)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Machaeranthera asteroides var. lagunensis	Laguna Mountains aster	None	None	1B FS	Perennial herb	Jul - Aug	Cismontane woodland, lower montane coniferous forest (2, 600 to 7,850)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Monardella hypoleuca ssp. lanata	Felt-leaved monardella	None	None	1B FS	Perennial herb (rhizomatous)	Jun - Jul	Chaparral, cismontane woodland (100 to 5,200)	Unlikely - No known occurrences in the vicinity. Suitable habitat is present but the sites lie well outside known species' range.
Monardella macrantha ssp. hallii	Hall's monardella	None	None	1B	Perennial herb (rhizomatous)	Jun - Aug	Broad-leaved upland forests, chaparral, cismontane woodland, lower montane conifer forests, grasslands (2,300 to 7,200)	High - Known from the vicinity. Suitable habitat present in the sites.
Monardella nana ssp. leptosiphon	San Felipe monardella	None	None	1B FS	Perennial herb	Jun - Jul	Chaparral, lower montane coniferous forest (4, 000 to 6,000)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Myosurus minimus ssp. apus	Little mousetail	None	None	3	Annual herb	Mar - Jun	Vernal pools (<2,100)	Moderate - Not known from the immediate vicinity. Suitable habitat occurs, and the sites lie well within the species' range.
Navarretia peninsularis	Baja pincushion plant	None	None	1B FS	Annual herb	Jun - Aug	Chaparral openings, lower montane coniferous forest/Mesic (4,900 to 7,500)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.

Table 4.6.1-3. Special-Status Plant Species (Continued)

Species		Status			Life Form	Blooming Period	Habitat Association (elevation range [feet])	Potential for Occurrence in Project Area
Scientific Name	**Common Name**	**USFWS**	**CDFG**	**Other**				
Navarretia prostrata	Prostrate navarretia	None	None	1B	Annual herb	Apr - Jul	Coastal scrub, valley and foothill grassland, vernal pools, alkaline soils (46 to 2,200)	Moderate - Recorded occurrence in the vicinity of the sites. Suitable habitat present.
Nolina cismontana	Chaparral nolina	None	None	1B FS	Shrub	May - Jul	Chaparral, coastal scrub/ sandstone or gabbro (500 to 4,200)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Orcuttia californica	California Orcutt grass	FE	SE	1B	Annual herb	Apr - Jun	Vernal pools (50 to 2,200)	Moderate - Not known from the immediate vicinity. Suitable habitat occurs, and the sites lie well within the species' range.
Penstomen californicus	California penstomen	None	None	1B FS	Perennial herb	May - Jun	Chaparral, lower montane coniferous forest, pinyon and juniper woodland/ sandy (3,800 to 7, 500)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Phacelia suaveolens ssp. keckii	Santiago Peak phacelia	None	None	1B FS	Annual herb	May - Jun	Closed-cone coniferous forest, chaparral (2, 000 to 5,250)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Poa atropurpurea	San Bernardino bluegrass	None	None	1B FS	Perennial herb	Apr - Aug	Meadows and seeps (4,500 to 8,000)	Low - No recorded occurrence within the vicinity of the sites, no suitable habitat present.
Quercus engelmannii	Engelmann oak	None	None	4	Deciduous tree	Mar - Jun	Chaparral, Cismontane woodland, Riparian woodland, valley and foothill grassland (400 to 4,250)	Moderate - Not known from the immediate vicinity. Suitable habitat occurs, and the sites lie well within the species' range.
Ribes canthariforme	Moreno current	None	None	1B FS	Shrub	Feb - Apr	Chaparral (1,200 to 4,000)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Romneya coulteri	Coulter's Matilija poppy	None	None	4	Perennial herb	May - Jul	Chaparral, coastal scrub, often in burned or disturbed areas (60 to 4,000)	Observed - Observed onsite during focused surveys.
Satureja chandleri	San Miguel savory	None	None	1B FS	Perennial herb	Mar - May	Chaparral, cismontane woodland, coastal scrub, riparian woodland, grassland (400 to 3,300)	High - Known from the vicinity. Suitable habitat occurs in the sites.
Scutellaria bolanderi ssp. austromontana	Southern skullcap	None	None	1B FS	Perennial herb	Jun - Aug	Wet meadows, lower montane coniferous forest, cismontane woodland (1,400 to 6,600)	Unlikely - Not known from the vicinity. No suitable habitat in the sites.
Senecio ganderi	Gander's ragwort	None	SR	1B FS	Perennial herb	Apr - May	Chaparral, gabbroic and burn areas (1,300 to 4,000)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.

Table 4.6.1-3. Special-Status Plant Species (Continued)

Species		Status			Life Form	Blooming Period	Habitat Association (elevation range [feet])	Potential for Occurrence in Project Area
Scientific Name	Common Name	USFWS	CDFG	Other				
Sibaropsis hammittii	Hammitt's clay-cress	None	None	1B FS	Annual herb	Mar - Apr	Chaparral openings, valley and foothill grasslands (2,400 to 3,500)	High - Known from the immediate vicinity. Suitable habitat present in the sites. No recently recorded occurrences within the sites.
Sphaerocarpos drewei	Bottle liverwort	None	None	1B	Ephemeral liverwort	None	Chaparral, coastal scrub (280 to 1,900)	Moderate - Recorded occurrence in vicinity of the sites. Suitable habitat present.
Streptanthus campestris	Southern jewel-flower	None	None	1B FS	Perennial herb	May - Jul	Chaparral, lower montane conifer forest, pinyon and juniper woodland,/rocky (3,000 to 7,500)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.
Symphyotrichum defoliatum	San Bernardino aster	None	None	1B	Rhizomatous herb	Jul - Nov	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, grassland, vernally mesic soils (6 to 6,300)	High - Recorded occurrence in the immediate vicinity of the sites. Suitable habitat present.
Tetracoccus dioicus	Parry's tetracoccus	None	None	1B FS	Shrub (deciduous)	Apr - May	Chaparral, coastal scrub (500 to 3,300)	High - Known from the vicinity. Suitable habitat occurs in the sites.
Thermopsis californica var. semota	Velvety false lupine	None	None	1B FS	Perennial herb	Mar - Jun	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland (3,400 to 6,100)	Low - No recorded occurrence within the vicinity of the sites, marginal suitable habitat present.

Notes:

United States Fish and Wildlife Service
- FE Federal Endangered
- FT Federal Threatened
- FPE Proposed Endangered

USDA Forest Service
- FS USDA Forest Service Sensitive Species

California Department of Fish & Game
- SE California Endangered
- ST California Threatened

California Native Plant Society
- 1A Plant species presumed extinct in California.
- 1B Rare, threatened, or endangered in California and elsewhere.
- 2 Rare, threatened, or endangered in California, but more common elsewhere.
- 3 More information is required regarding status.
- 4 Species with limited distribution, a "watch" list.

Source: Michael Brandman Associates

Table 4.6.1-4. Sensitive Wildlife Species

Species		Status			Distribution	Required Habitat	Known Presence/Potential Habitat/Potential on Site
Scientific Name	**Common Name**	**USFWS**	**CDFG**	**Other**			
Invertebrates							
Euphydryas editha quino	Quino checkerspot butterfly	FE	None	None	Southwestern California into northwestern Baja California	Sparsely vegetated sage scrub/grassland mix with dwarf plantain and/or purple owl's clover	Moderate - Recorded occurrence within the vicinity of the site, suitable habitat present.
Streptocephalus woottoni	Riverside fairy shrimp	FE	None	None	Endemic to Riverside and San Diego	Tectonic swales/earth slump in grassland and coastal sage scrub	Low - Not recorded in Project vicinity. Sites contain no suitable habitat.
Fish							
Gila orcutti	Arroyo chub	None	CSC	FS	Los Angeles	South coastal streams	Low - Not recorded in Project vicinity. Sites contain no suitable habitat.
Oncorhynchus mykiss	Southern steelhead	FE	CSC	None	Washington to Mexico	Coastal streams and estuaries	Moderate - Sites contains potentially suitable habitat and the species has been reported in the Project vicinity.
Rhinichthys osculus ssp 3	Santa Ana speckled dace	None	CSC	FS	West of continental divide from South British Columbia south to southern Arizona	Cool to warm creeks, rivers, and lakes, over gravel or rock: desert springs and their outflow	Low - Not recorded in Project vicinity. Sites contain no suitable habitat.
Amphibians							
Bufo californicus	Arroyo toad	FE	CSC	None	Southwestern California into northwestern Baja California	Streams and arroyos, sandy banks	High - Suitable habitat within the Project vicinity. Recorded in immediate vicinity of transmission line route.
Ensatina klauberi	Large-blotched salamander	None	CSC	FS	Mountainous areas northeast of San Diego	Deciduous, evergreen forests, oak woodland, and chaparral	Low - Marginal habitat suitability. Not recorded in immediate vicinity.
Rana aurora draytonii	California red-legged frog	FT	CSC	None	West of Sierra Nevada to northern Baja California	Ponds, or permanent water ways with extensive vegetation	Low - Marginal habitat suitability. Not recorded in immediate vicinity.
Rana muscosa	Yellow-legged frog	FE	CSC	FS	Sierra Nevada, CA. North of Feather River Mountains of southern California from Pacoima Ridge south at 1200-7500 feet with southern most population isolated on Mt Palomar	Requires sunny riverbanks, meadow streams, isolated pools, and lake borders in the high sierra Nevada and rocky stream courses in the mountains of Southern California	Low - Not recorded in Project vicinity. Sites contain no suitable habitat.
Spea (Scaphiopus) hammondii	Western spadefoot	None	CSC	BLM	Northwestern California to northwestern Baja California	Washes, floodplains, alluvial fans, playas, and alkali flats	High - Known to occur in the Project vicinity. Sites contain suitable habitat.

Table 4.6.1-4. Sensitive Wildlife Species (Continued)

Species		Status			Distribution	Required Habitat	Known Presence/Potential Habitat/Potential on Site
Scientific Name	**Common Name**	**USFWS**	**CDFG**	**Other**			
Amphibians							
Taricha torosa torosa	Coastal California newt	None	CSC	None	Mendocino County to San Diego County	Coastal drainages; breeds in ponds, reservoirs, and slow moving streams	Observed - Observed onsite during focused surveys.
Reptiles							
Anniella pulchra pulchra	Silvery legless lizard	None	CSC	FS	From near Antioch, CA south in Coast Ranges, Transverse mountains, and Peninsular Range into northwest. Baja California	Moist sandy loams near sparse vegetation	Low - Reported approximately 3.0 miles southwest of the Project. No suitable habitat present.
Emys (Clemmys) marmorata pallida	Southwestern pond turtle	None	CSC	FS, BLM	West of Sierra-Cascade crest, Mojave desert to 6000 feet	Permanent, or nearly permanent fresh water areas	Moderate - Sites contains potentially suitable habitat but the species has not been reported in the Project vicinity.
Aspidoscelis (Cnemidophorus) hyperythra beldingi	Belding's orange-throated whiptail	None	CSC	None	Southwestern California to Baja California	Chaparral/ semiarid areas, frequently where loose sand/soil is present	High - Known to occur in the Project vicinity. Sites contain suitable habitat
Crotalus ruber ruber	Northern red-diamond rattlesnake	None	CSC	None	Southwestern California to Baja California	Chaparral, desert scrub, rocky alluvial fans	Observed - Observed on the site during focused surveys.
Diadophis punctatus similis	San Diego ringneck snake	None	None	FS	Southwestern California to Baja California	Rocky areas, flat rocks, woodpiles, stable talus small ground holes	Moderate - Sites contains potentially suitable habitat but the species has not been reported in the Project vicinity.
Eumeces skiltonianus interparietalis	Coronado skink	None	CSC	BLM	Southern California to Baja California	Chaparral, rocky habitats near streams	High - Known to occur in the vicinity. Sites contain suitable habitat.
Lampropeltis zonata pulchra	San Diego mountain kingsnake	None	CSC	FS	Southern Washington to northern Baja CA. Mountains of coastal and interior California, except dessert	Moist woods, coniferous forest, woodland, and chaparral. Ranging from sea level high into the mountains	Moderate - Sites contains potentially suitable habitat but the species has not been reported in the Project vicinity.
Charina (Lichanura) trivirgata roseofusca	Coastal Rosy boa	None	None	FS, BLM	Coastal southern California to Baja California	Rocky shrub lands and desert	Observed - Observed on the site during focused surveys.
Phrynosoma coronatum blainvillei	San Diego horned lizard	None	CSC	FS	Coast of California from Los Angeles to Baja California	Sandy soil with low vegetation	Observed - Observed on the site during focused surveys.
Thamnophis hammondii	Two-striped garter snake	None	CSC	FS, BLM	Coastal California to northwestern Baja California	Permanent fresh water, along stream with rocky bed bordered by willows or riparian growth	Observed - Observed on the site during focused surveys.

Table 4.6.1-4. Sensitive Wildlife Species (Continued)

Species		Status			Distribution	Required Habitat	Known Presence/Potential Habitat/Potential on Site
Scientific Name	**Common Name**	**USFWS**	**CDFG**	**Other**			
Birds							
Accipiter cooperii	Cooper's hawk	None	CSC	None	Southern Canada to northern Mexico	Mature forest, open woodlands, river groves	Observed - Observed on the site during focused surveys.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None	CSC	None	Bay area to Baja	Coastal sage scrub, chaparral	Observed - Observed on the site during focused surveys.
Amphispiza belli belli	Bell's sage sparrow	None	CSC	None	Northern U.S. to Mexico	Nests in chaparral dominated by fairly dense stands of chamise, coastal sage scrub in south of range	High - Observed within approximately 3 miles of the Project sites. Suitable habitat present.
Asio otus	Long-eared owl	None	CSC	None	Southern Canada to northern Mexico	Riparian bottomlands, belts of live oak	Moderate - Sites contains potentially suitable habitat but the species has not been reported in the Project vicinity.
Athene cunicularia	Burrowing owl	None	CSC	BLM	Southern Canada to Mexico	Grasslands, shrublands with low-growing cover	Moderate - Recorded occurrence in vicinity of site. Suitable habitat present.
Campylorhynchus Brunneicapillus sandiegensis	San Diego cactus wren	None	CSC	FS	Southwestern United States to central Mexico	Coastal sage scrub associated with cactus patches	Low - Recorded to occur south of the sites. Sites contains suitable habitat but is likely outside of species range.
Charadrius alexandrinus nivosus	Western snowy plover	FT	CSC	None	Southern U.S. through central America	Sandy beaches, salt pond levees and large alkali lakes	Low - Not recorded in the Project vicinity. Sites contains no suitable habitat.
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	FC	SE	FS	Common in Eastern U.S. Limited distribution in the west. Winters in South America	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Dense willow jungles with cottonwoods	Low - Reported approximately 3.0 miles southwest of the Project sites. No suitable habitat present.
Elanus leucurus	White-tailed kite	None	Fully Protected	None	South coastal range of California to south Texas to eastern Mexico	Open savanna, grasslands, and fields	High - Known to occur in the vicinity. Sites contain suitable habitat.
Empidonax traillii extimus	Southwestern willow flycatcher	FE	None	None	Alaska, Canada to southwestern US	Drier willow thickets, alders	Moderate - Sites contains potentially suitable habitat but the species has not been reported in the Project vicinity.
Eremophila alpestris actia	California horned lark	None	CSC	None	California	Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats	Observed - Observed on the sites during focused surveys.

Table 4.6.1-4. Sensitive Wildlife Species (Continued)

Species		Status			Distribution	Required Habitat	Known Presence/Potential Habitat/Potential on Site
Scientific Name	**Common Name**	**USFWS**	**CDFG**	**Other**			
Birds							
Haliaeetus leucocephalus	Bald eagle	FT (FPD)	SE	SS, FP	Alaska, Canada to southwestern US	Ocean shorelines, lake margins, river courses	Moderate - Known to occur in the vicinity. Sites contains suitable foraging habitat.
Icteria virens	Yellow-breasted chat	None	CSC	None	Canada to Mexico	Riparian thickets near watercourses	High - Observed within Temescal Wash. Suitable habitat present.
Lanius ludovicianus	Loggerhead shrike	None	CSC	None	Canada to Mexico	Grasslands, coastal sage scrub, chaparral	Observed - Observed on the site during focused surveys.
Polioptila californica californica	Coastal California gnatcatcher	FT	CSC	None	Southeastern California to Baja California	Coastal scrub, dry washes, ravines	Moderate - Sites contain potentially suitable habitat but the species has not been reported in the Project vicinity.
Strix occidentalis occidentalis	California spotted owl	None	CSC	FS, BLM	Southern Canada to Mexico	Coniferous forests, wooded canyons	Observed - Observed on the site during focused surveys.
Vireo bellii pusillus	Least Bell's vireo	FE	SE	None	Southern coastal ranges of California through Mexico	Riparian areas, forest edges	Moderate - Sites contain potentially suitable habitat but the species has not been reported in the Project vicinity.
Mammals							
Antrozous pallidus	Pallid bat	None	CSC	FS	Southwestern United states into Baja and northern Mexico and north into western states	Caves, tunnels, mines, crevices in rock used for roosts	Low - Reported approximately 3.0 miles southwest of the Project sites. No suitable habitat present.
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	None	CSC	None	Western San Diego	Coastal scrub, chaparral, grasslands, sagebrush	High - Known to occur in the vicinity. Sites contain suitable habitat.
Corynorhinus townsendi townsendi	Townsend's big-eared bat	None	CSC	FS, BLM	Western United States into central Mexico	Caves, mines, tunnels for roosts	Low - No recorded observation within the vicinity of the sites. No suitable habitat present.
Dipodomys stephensi	Stephens' kangaroo rat	FE	ST	None	Riverside County south to San Diego County	Annual and perennial grassland, coastal scrub or sagebrush scrub	High - Known to occur in the vicinity. Sites contain suitable habitat.
Lasiurus blossevillii	Western red bat	None	None	FS	Most of California south into Baja Mexico	Wooded areas, roosts in trees	Moderate - Sites contains potentially suitable habitat but the species has not been reported in the Project vicinity.

Table 4.6.1-4. Sensitive Wildlife Species (Continued)

Species		Status			Distribution	Required Habitat	Known Presence/Potential Habitat/Potential on Site
Scientific Name	**Common Name**	**USFWS**	**CDFG**	**Other**			
Mammals							
Lepus californicus bennetii	San Diego black-tailed jackrabbit	None	CSC	None	Southwestern California	Coastal sage scrub	Moderate - Observed in the vicinity of the sites. Suitable habitat present.
Perognathus Longimembris brevinasus	Los Angeles little pocket mouse	None	CSC	FS	Burbank and San Fernando on the northwest to San Bernardino on the northeast, and Cabazon, Hemet, and Aguanga on the east and southeast	Grassland and coastal scrub	Low - Reported approximately 3.0 miles southwest of the Project sites. No suitable habitat present.

Notes:

United States Fish and Wildlife Service
- FE Federal Endangered
- FPD Federal Proposed for Delisting
- FPE Federal Proposed Endangered
- FT Federal Threatened

USDA Forest Service
- FS USDA Forest Service Sensitive Species

California Department of Fish and Game
- CSC Species of Special Concern
- FP Fully Protected
- SE California Endangered
- SS Sensitive Species
- ST California Threatened

Bureau of Land Management (BLM Sensitive Species)
- * Considered sensitive by the CNDDB

Source: Michael Brandman Associates

Surveys identified three special status plant communities (southern coast live oak riparian forest, southern sycamore alder riparian woodland, and southern willow scrub) as occurring within the Project area.

- **Sensitive wildlife species**. Forty-five sensitive wildlife species were determined to have a potential to occur within the Project area. Of these, as indicated in Table 4.6.1-4 (Sensitive Wildlife Species), eleven have a moderate or high potential, and ten were observed within the proposed Project's boundaries. Species that were determined to be unlikely to occur due to a lack of any suitable habitat were not included. Special status species that were observed within the Project area include two-striped garter snake (*Thamnophis hammondii*), northern red-diamond rattlesnake (*Crotalus ruber ruber*), San Diego horned lizard (*Phrynosoma coronatum blainvillei*), coastal rosy boa (*Lichanura trivirgata*), coastal California newt (*Taricha torosa torosa*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), loggerhead shrike (*Lanius ludovicianus*), spotted owl, Cooper's hawk, and California horned lark (*Ermophila alpestris actia*).

  Federally-listed and/or State-listed species that have a moderate or high potential to occur within the Project area and for which focused surveys were conducted include Quino checkerspot butterfly (*Euphydryas editha quino*), arroyo toad (*Bufo califonicus*), California red-legged frog (*Rana aurora draytonii*), coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*). Additional endangered or threatened species that have a moderate or high potential to occur include southern steelhead (*Oncorhynchus mykiss*), bald eagle (*Haliaeetus leucocephalus*), and Stephens' kangaroo rat (*Dipodomys stephensi*). Small portions of the Project occurs within critical habitat for Quino checkerspot butterfly and coastal California gnatcatcher.

  No federally-listed or State-listed wildlife species were observed on any of the Project sites during the course of conducting general biological and focused species-specific surveys between 2001 and 2006. Based on these findings, the current potential for most of these species to occur with the Project area is low. As discussed below and in Appendix C (Response to USFWS Comments Regarding Section 7 Consultation), due to the presence of suitable or potentially suitable habitat, the potential exists for a number of species to occur in the future. Those species include, but may not be limited to, the following:

  ◊ **Quino checkerspot butterfly**. Suitable habitat for QCB occurs within the northern portion of the Project area, northeast of the I-15 (Corona and Escondido) Freeway. This area also falls within the Northwest Riverside Recovery Unit, as designated by USFWS for this species. Focused surveys were conducted for this species in 2003-2006. All surveys were negative. Several patches of the QCB's larval host plant dwarf plantain (Plantago erecta) were, however, found within the proposed Northern (Lake-Santa Rosa) segment of the transmission alignments. Based on the findings of the four consecutive years of surveys, there is a low potential for this species to occur within the general Project area.

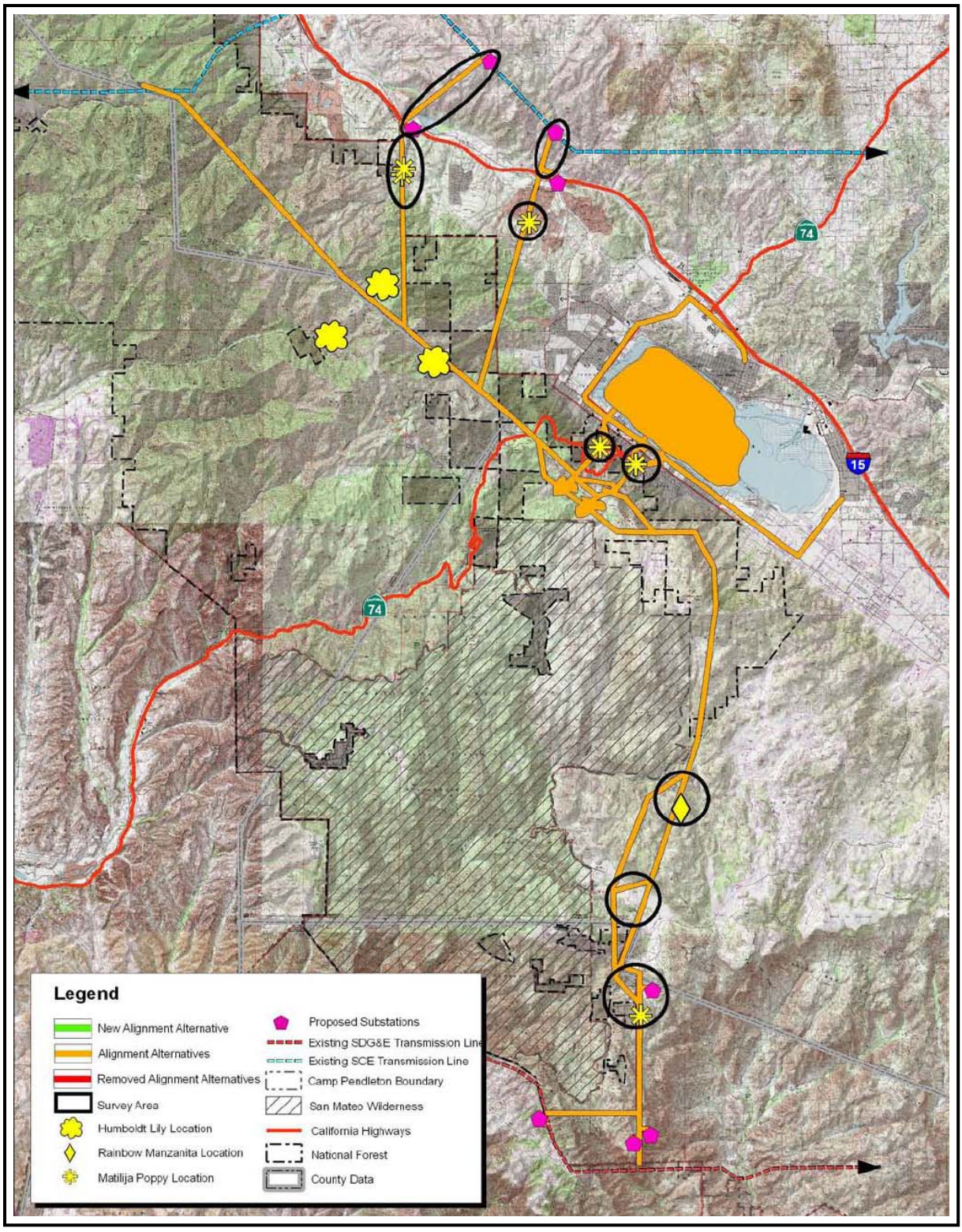

Figure 4.6.1-6. Focused Special Status Plant Survey Areas
Source: Michael Brandman Associates

Note: Thise figure illustrates the range of transmission alignments considered in the FERC FEIS and the location of those focused plant surveys conducted in association with those alignments. With the exception of the proposed Project alignment identified in this PEA, the transmission alignments depicted herein are not being proposed by the Applicant and are not being presented for the CPUC's consideration.

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◊ **Southern steelhead**. Within Camp Pendleton, southern steelhead, a sensitive fish species, may potentially occur in the southernmost portion of the Project sites. The southern steelhead is protected on the coastal regions from the Santa Maria River, south to the United States - Mexico border. The only known location of southern steelhead near the Project occurs within San Mateo Creek, just north of Camp Pendleton within NFS lands and in Devil's Canyon within Camp Pendleton. The species is listed as federally endangered and a California species of concern.

As indicated in the February 16, 2000 final rule (65 FR 7764), no critical habitat for this species is established in Orange, Riverside, or San Diego Counties. The USFWS does note: "In 1999, juvenile *Oncorhynchus mykiss* suspected of being steelhead were found in several locations within the San Mateo Creek watershed. NMFS is evaluating the available biological information for these fish, including limited amount of genetic and otolith microchemistry data, to determine whether a range extension of this ESU [Evolutionarily Significant Unit] is warranted. If warranted by the available data, NMFS will propose a range extension of this ESU in a separate rule making" (65 FR 7768).

◊ **Arroyo toad**. Protocol surveys conducted for arroyo toad in 2001 and 2004-2006 were negative. There are no historic observations of this species in the immediate Project vicinity. Habitat that is more suitable for arroyo toad occurs downstream of the Project sites. Individuals recorded to occur within the vicinity of the Project sites were observed in upland areas. It is likely that arroyo toads associated with the downstream habitat were observed foraging in upland habitats in the vicinity of the more suitable habitat downstream.

The USDA Forest Service provided information regarding a recorded occurrence of arroyo toad within 0.25 miles of the Los Alamos Creek survey area (upland area southeast of Los Alamos Creek survey area), illustrated in Figure 4.6.1-7 (Arroyo Toad Focused Survey Areas).[59] The USFWS recommends that this area be considered occupied by arroyo toad based on the data provided by USDA Forest Service. Although arroyo toad were not observed during four years of surveys, this species has a moderate potential to occur in the general Project area at Los Alamos Creek and a low potential for the remaining survey areas.

◊ **California red-legged frog**. Focused surveys for California red-legged frog were conducted in 2001-2004. The findings of those surveys were negative. Although this species has not been recorded in the immediate vicinity of the Project, suitable habitat is present and this species, therefore, is considered to have a moderate potential to occur in the general Project area.

◊ **California spotted owl**. Spotted owl protocol surveys were conducted during the 2001 and 2004 seasons. During the 2004 surveys, spotted owls were observed in the northernmost alternative transmission right-of-way (subsequently deleted

[59]/ Michael Brandman Associates, Arroyo Toad Focused Survey Report - Lake Elsinore Advanced Pumped Storage and Talega-Escondido/Valley-Serrano Interconnect Projects, Riverside and San Diego Counties, California, August 28, 2006.

from analysis). This species is considered unlikely to occur in the southern portion of the Project area but is considered present within the wooded areas located to the northern of the proposed Lake-Santa Rosa transmission alignment.

- **Southwestern willow flycatcher**. No southwestern willow-flycatcher individuals were detected during focused protocol surveys conducted in 2001-2006. As illustrated in Figure 4.6.1-8 (Southern Willow Flycatcher and Least Bell's Vireo Focused Survey Areas),[60] the three areas surveyed (Los Alamos Creek, Tenaja Falls, and Lee Lake) were identified as containing marginally suitable habitat (Los Alamos Creek and Tenaja Falls) to moderately suitable habitat (Lee Lake). Based on these findings, this species has a low potential to occur in the general Project area but marginally suitable habitat is, nonetheless, present.

◊ **Coastal California gnatcatcher**. As illustrated in Figure 4.6.1-9 (Coastal California Gnatcatcher Focused Survey Areas),[61] no CGN was detected during six years (2001-2006) of focused protocol surveys in areas identified as suitable habitat. The USDA Forest Service provided information regarding a known recorded occurrence of CGN within the vicinity of a transmission corridor survey area.[62] Potentially suitable habitat for this species occur along the penstock alignments between the proposed Decker Canon Reservoir and Lake Elsinore and along the Northern (Lake-Santa Rosa) segment of the proposed transmission alignment. Protocol surveys previously conducted within suitable habitat near Lake Elsinore (1996) were also negative. Based on the findings of the focused surveys, the potential for CGN to occur within the transmission alignment is low but suitable habitat is, nonetheless, present.

◊ **Least Bell's vireo**. As illustrated in Figure 4.6.1-8 (Southwestern Willow Flycatcher and Least Bell's Vireo Focused Survey Areas),[63] least Bell's vireo (LBV) was not observed during protocol surveys conducted from 2001-2006 in three areas of suitable habitat identified within the study area (Los Alamos, Tenaja Falls, Lee Lake). Although these habitat areas may be suitable for this species, because of their limited size and lack of connectivity to other areas with suitable habitat, LBV are not occupied. Since this species has not been recorded in the immediate vicinity of the study area, the potential for occurrence is low.

◊ **Stephens' kangaroo rat**. Suitable habitat for the federally endangered and State threatened Stephens' kangaroo rat (SKR) includes grasslands, disturbed areas, and open sage scrub. No focused SKR surveys were conducted for this species since identified habitat for this species falls within the Riverside County "Stephens' Kangaroo Rat Habitat Conservation Plan Fee Assessment Area," as identified in Figure 4.6.1-10 (Riverside County Stephens' Kangaroo Rat Habitat Conservation Plan Fee Assessment Area). With regards to those portions of the Project located

[60]/ Michael Brandman Associates, Southwestern Willow Flycatcher and Least Bell's Vireo Focused Survey Report - Lake Elsinore Advanced Pumped Storage and Talega-Escondido/Valley-Serrano Interconnect Projects, Riverside and San Diego Counties, California, August 28, 2006.
[61]/ Michael Brandman Associates, Coastal California Gnatcatcher Focused Survey Report - Lake Elsinore Advanced Pumped Storage and Talega-Escondido/Valley-Serrano Interconnect Projects, Riverside and San Diego Counties, California, August 28, 2006.
[62]/ The USFWS recommends that the area be considered occupied based on the data provided by USDA Forest Service.
[63]/ Op. Cit., Southwestern Willow Flycatcher and Least Bell's Vireo Focused Survey Report - Lake Elsinore Advanced Pumped Storage and Talega-Escondido/Valley-Serrano Interconnect Projects, Riverside and San Diego Counties, California.

within the established fee area, the Applicant will be required to pay a mitigation fee in compliance with the "Stephens' Kangaroo Rat Habitat Conservation Plan," the Western Riverside County MSHCP, or both.

- **Jurisdictional waters and wetlands**. Excluding the existing Talega-Escondido 69/230-kV transmission alignment, over 60 separate "blue-line" drainage features cross the proposed 500-kV transmission aligment at various points. There are also numerous smaller, tributary drainages that may qualify as either "waters of the United States" (WoUS) or "waters of the State" (WoS). The largest drainage features within the Project area include Temescal Creek (a tributary of Santa Ana River) and Los Alamos Creek (a tributary of San Mateo Creek). Many of the small drainage features appear to be ephemeral (flows only during and for short periods after storm events) as indicated by the lack of hydrophytic vegetation (plant species that depend on periodic saturation). The large drainage courses that conduct intermittent flows for extended periods (>3-4 days) after storms are typically dry during the late summer months in years with average to below average rainfall. These larger drainage courses contain either coast live oak woodlands/riparian forests or sycamore-alder riparian woodlands. Virtually all the drainage features in the Project area are expected to fall under USACE and CDFG jurisdiction where a defined channel bed and banks are observable.

- **Regional connectivity/wildlife movement corridors**.[64] Under existing conditions, wildlife have nearly uninhibited movement throughout the area northeast of the I-15 (Corona and Escondido) Freeway and within the CNF. Movement of terrestrial animals is restricted due to development in the area surrounding Lake Elsinore, as well as the unincorporated communities of Alberhill and Glen Ivy. Tracks and other sign of wildlife markings were noted extensively throughout the remaining parts of the Project area, indicating that wildlife movement is occurring. Most of the Project area is considered by the CDFG to be an important movement corridor for a variety of wildlife. Areas containing ridge tops and canyon bottoms are generally considered suitable corridors for wildlife. There are numerous canyons and ridge tops throughout the area; however, no detailed studies are available on wildlife movement through those areas.[65]

  Due to the Project's location within the Western Riverside County MSHCP, the Project may potentially affect Linkage 1 and 9, and Constrained Linkages 3, 5 and 6, as described therein.

- **Migratory birds**. Because it is subject to heavy human disturbance, there is no known significant migratory bird breeding habitat on the present shores of Lake Elsinore. Birds breed in the shrubs and vegetation in the northern corner of the lake, back from the shore.

[64]/ Wildlife corridors link areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time because the infusion of new individuals and genetic information is restricted or prohibited. Corridors effectively act as links between different populations of a species. The smaller the population, the more important immigration becomes because prolonged inbreeding between a small group of individuals can reduce genetic variability over time. A significant decrease in a population's genetic variability is generally associated with a decrease in population health and, eventually, extirpation.

[65]/ One area that is presumed to be a migration corridor is Temescal Wash, linking the Lake Mathews Estelle Wildlife Preserve (east of the I-15 Freeway) and the Santa Ana Mountains (west of the I-15 Freeway). Wildlife is free to move through this corridor under the two bridges where the I-15 Freeway crosses Temescal Wash.

In the area of Lake Elsinore's Back Basin, a heron rookery is at least a tenth of a mile from the water. Double-crested cormorants are regularly observed at Lake Elsinore. This species is likely to be foraging or wintering since the only known rookery in west Riverside County is in the Prado Basin. In addition, small breeding populations of snowy plover have been reported in the past, before the modification of Lake Elsinore into an operating lake and the Back Basin. Existing shoreline conditions, lake level fluctuations, and high levels of human use around the margins of the lake preclude nesting by snowy plover. Suitable plover nesting substrates may be present within the loafing areas of the Back Basin.

In 2003, more than 300 *Aechmoshorus* grebes were found dead and emaciated at Lake Elsinore of unknown causes.[66] Numerous adult and juvenile *Aechmophorus* grebes (possibly both *clarkia* and *occidentalis*) were observed in the Back Basin and it appears that breeding occurs there. However, current lake fluctuations prevent the growth of macrophytes and shoreline marsh vegetation. There presently are no cattail or tule marshes within the lake shoreline, outside the Back Basin.[67]

As reported by the USFWS, with regards to the Caspian tern (*Sterna caspica*), a non-game migratory bird, Lake Elsinore "hosted an adult with a downy chick on 23 July 1995 and 14 nests on 7 June 1999. These represent the only known records of breeding Caspian terns in the interior of southern California away from the Salton Sea. In 1999, the terns were nesting on a low-lying island in a diked impoundment at the south end of Lake Elsinore; the rest of the lake is unsuitable, especially because it is heavily used for recreation."[68] Fourteen pairs of nesting Caspian tern were reported in 1999 and none in the subsequent four years. Conditions around the lakeshore presently do not permit this or other open-substrate nesters to form breeding colonies on the main lake, but the Back Basin loafing area may provide suitable nesting opportunities.

- **Regional Habitat Conservation Plans**. Within NFS lands, the Project will be required to conform to and comply with the policies and procedures developed in the Forest Plan. Within BLM-administered lands, the Project will be required to conform to and comply with the "South Coast Resources Management Plan and Record of Decision."[69]

  The Riverside County's Western Riverside County MSHCP, USMC's "Integrated Natural Resources Management Plan – Marine Corps Base and Marine Corps Air Station Camp Pendleton," SDG&E's "San Diego Gas & Electric Company Subregional Plan," and San Diego County's "San Diego Northern Multi-Species Conservation Plan Subarea" are separately discussed below.

[66]/ Ivey, Gary L., Conservation Assessment and Management Plan for Breeding Western and Clarks Grebes in California, United States Fish and Wildlife Service, June 2004, p. 9.
[67]/ Op. Cit., Final Program Environmental Impact Report - Lake Elsinore Stabilization and Enhancement Project, SCH No. 2001071042, September 2005, Response No. 4-2.
[68]/ Shuford, David W. and Craig, David P., Status Assessment and Conservation Recommendations for the Caspian Tern (Sterna Caspia) in North America, United States Fish and Wildlife Service, August 2002, Appendix 1-16.
[69]/ United States Department of the Interior, Bureau of Land Management, South Coast Resources Management Plan and Record of Decision, June 1994.

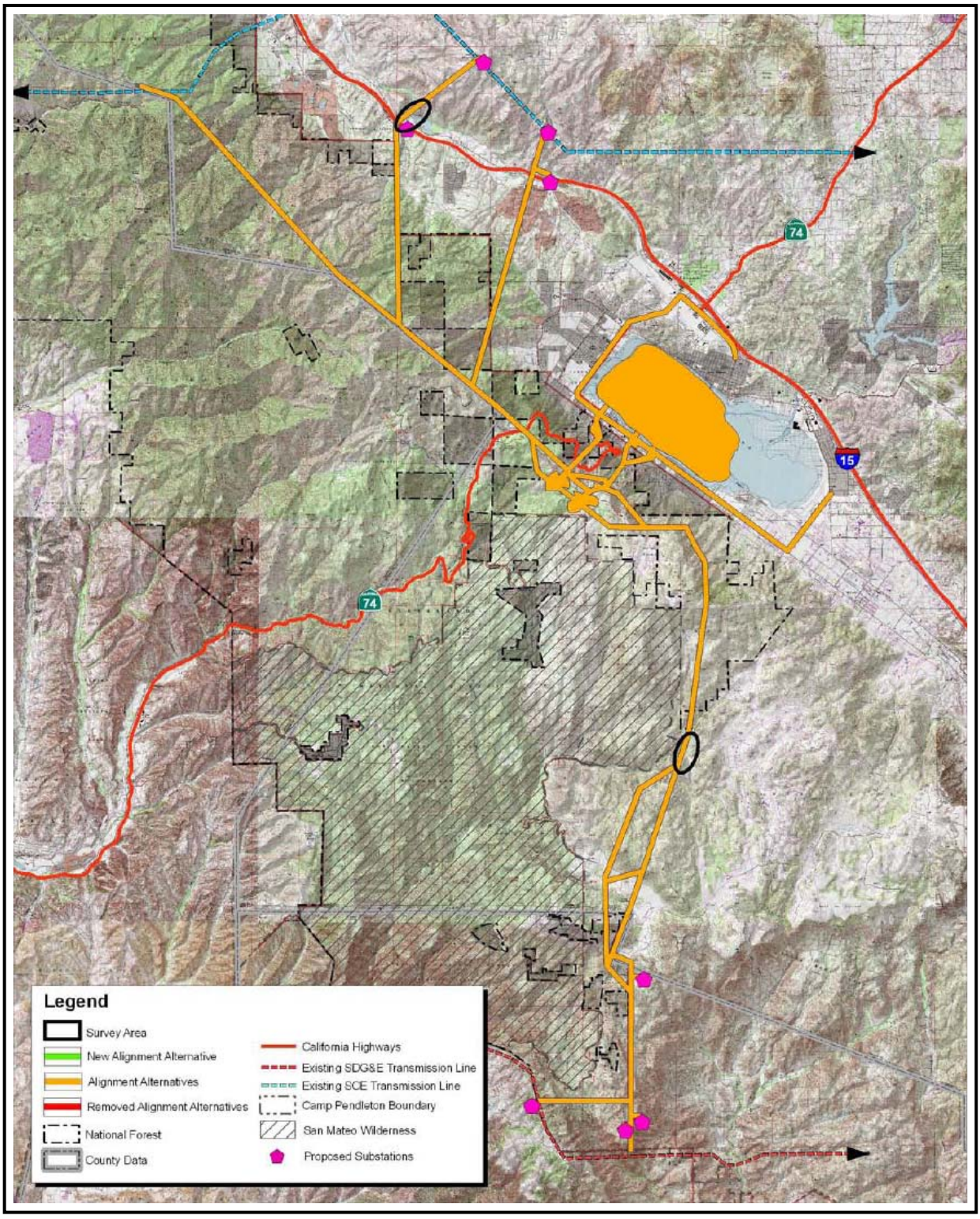

Figure 4.6.1-7. Arroyo Toad Focused Survey Areas
Source: Michael Brandman Associates

Note: Thise figure illustrates the range of transmission alignments considered in the FERC FEIS and the location of those focused wildlife surveys conducted in association with those alignments. With the exception of the proposed Project alignment identified in this PEA, the transmission alignments depicted herein are not being proposed by the Applicant and are not being presented for the CPUC's consideration.

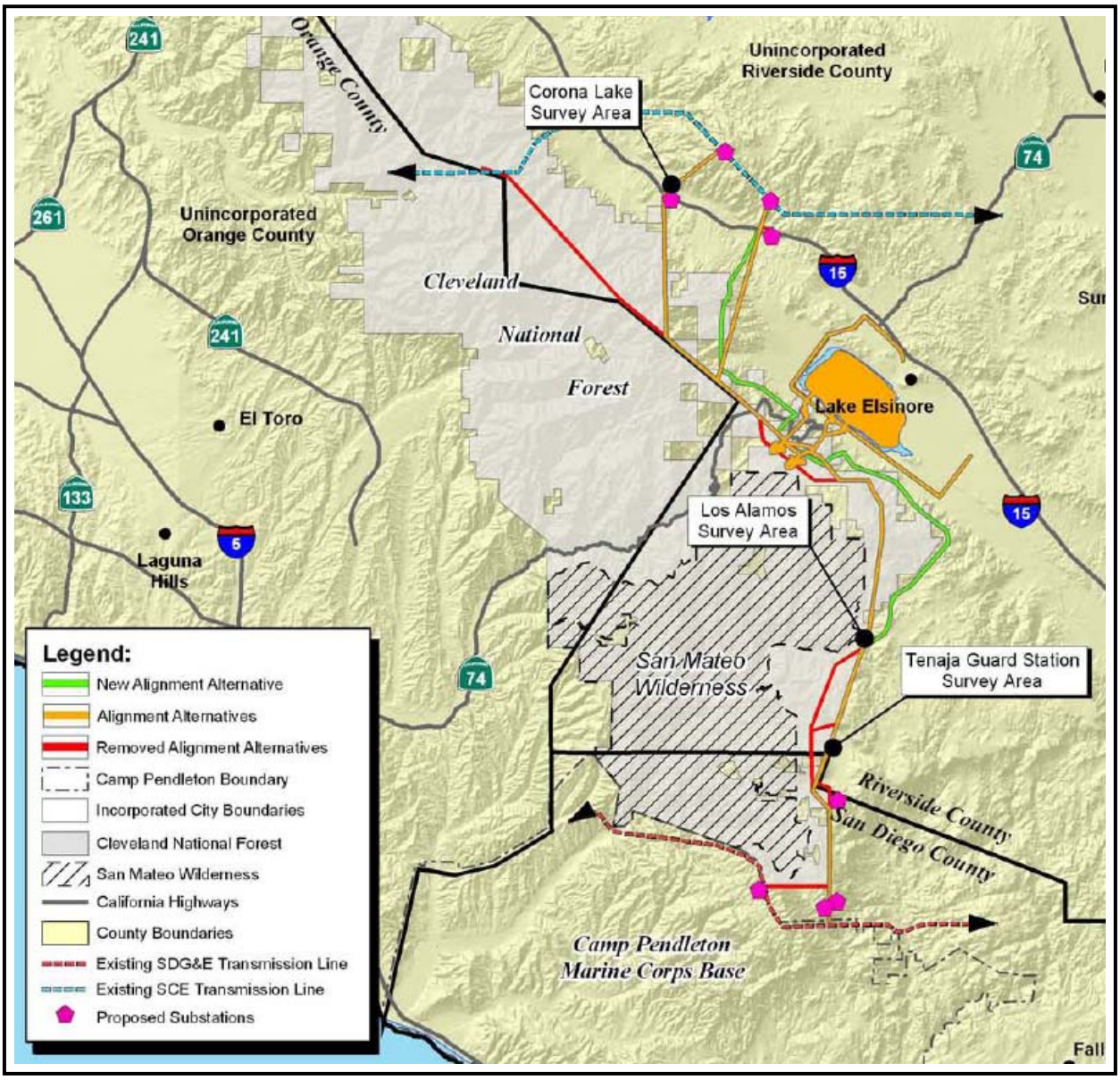

Figure 4.6.1-8. Southwest Willow Flycatcher and Least Bell's Vireo Focused Survey Areas (1 of 4)
Source: Michael Brandman Associates

Note: Thise figure illustrates the range of transmission alignments considered in the FERC FEIS and the location of those focused wildlife surveys conducted in association with those alignments. With the exception of the proposed Project alignment identified in this PEA, the transmission alignments depicted herein are not being proposed by the Applicant and are not being presented for the CPUC's consideration.

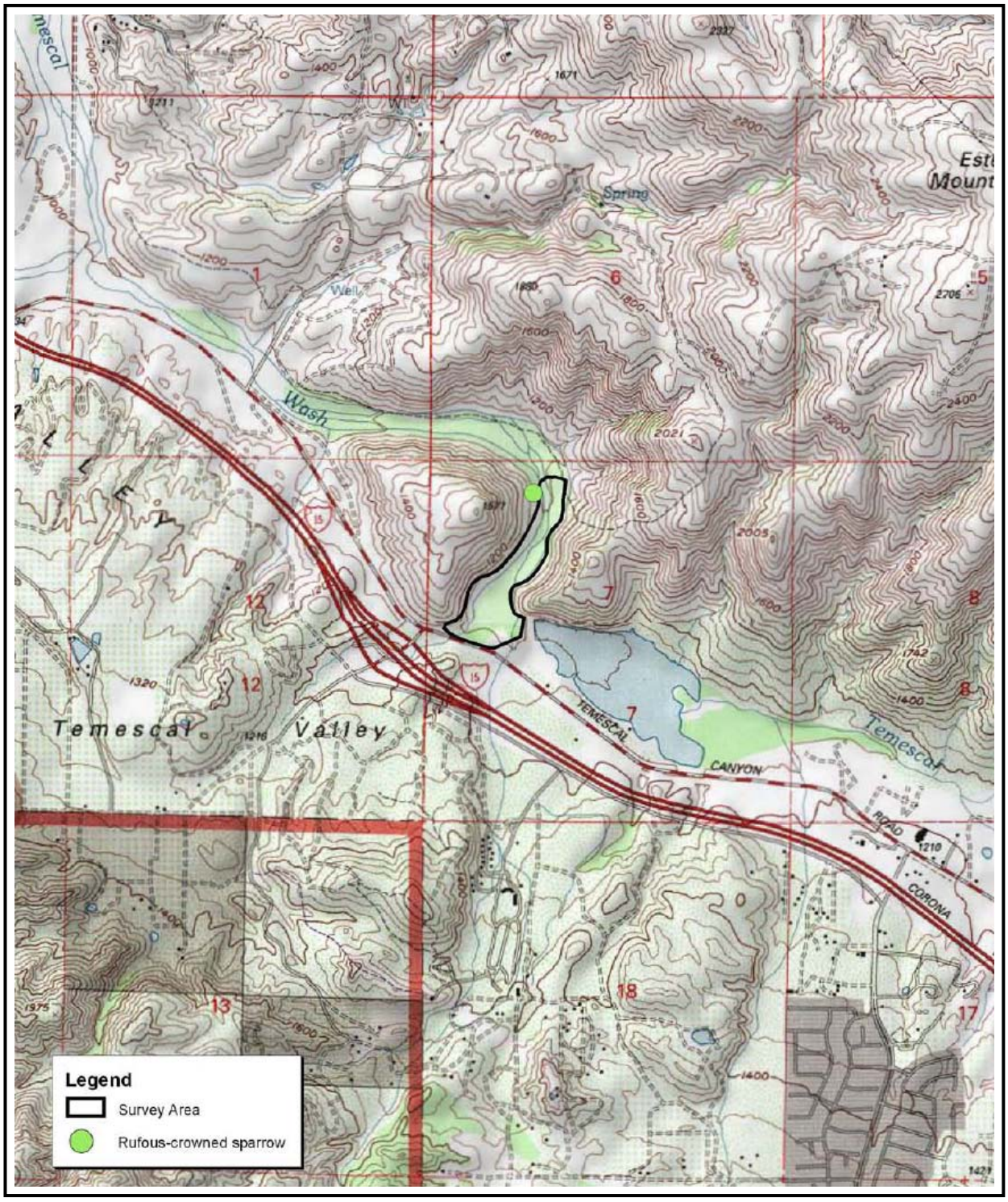

Figure 4.6.1-8. Southwest Willow Flycatcher and Least Bell's Vireo Focused Survey Areas (2 of 4)
Source: Michael Brandman Associates

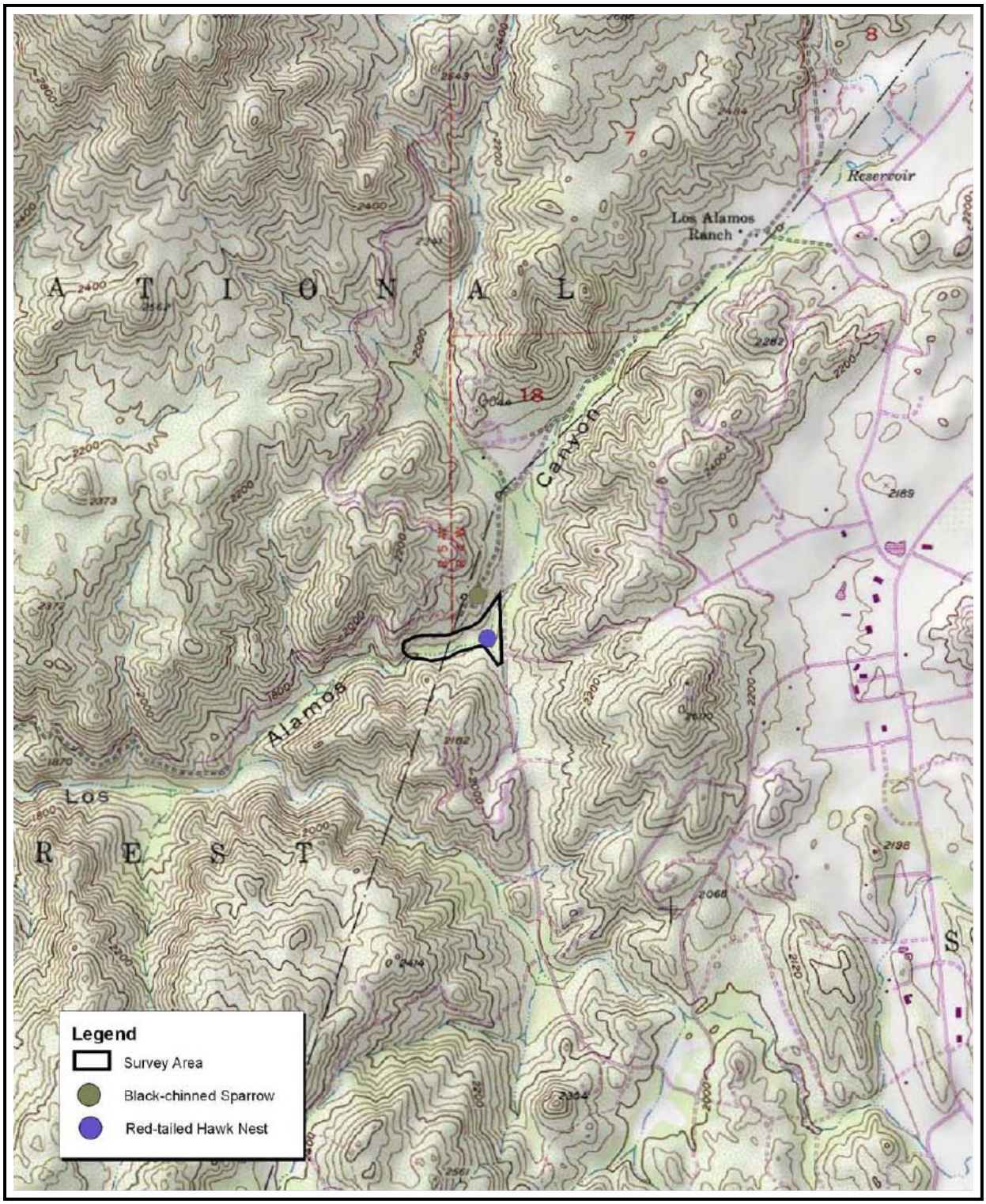

Figure 4.6.1-8. Southwest Willow Flycatcher and Least Bell's Vireo Focused Survey Areas (3 of 4)
Source: Michael Brandman Associates

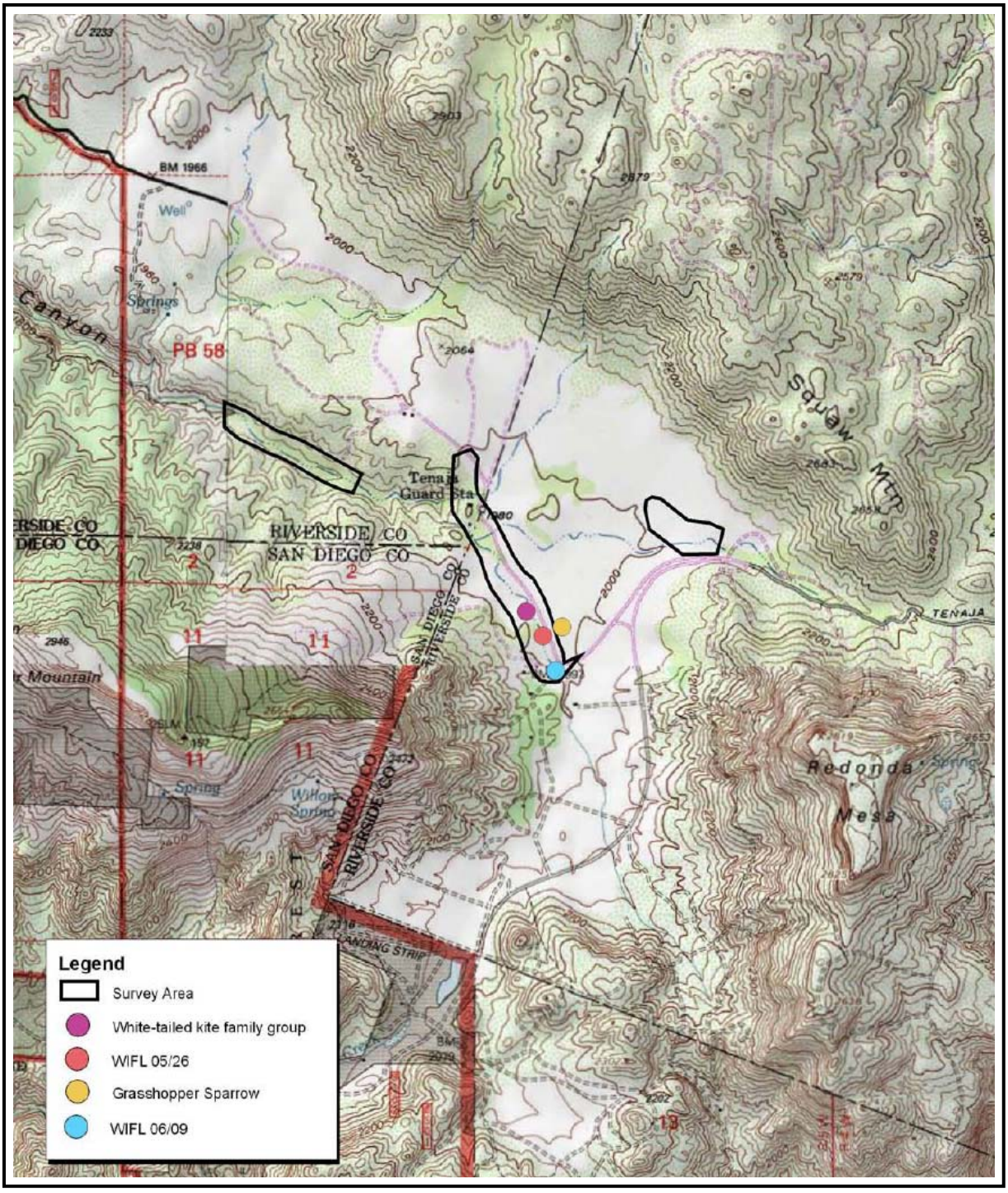

Figure 4.6.1-8. Southwest Willow Flycatcher and Least Bell's Vireo Focused Survey Areas (4 of 4)
Source: Michael Brandman Associates

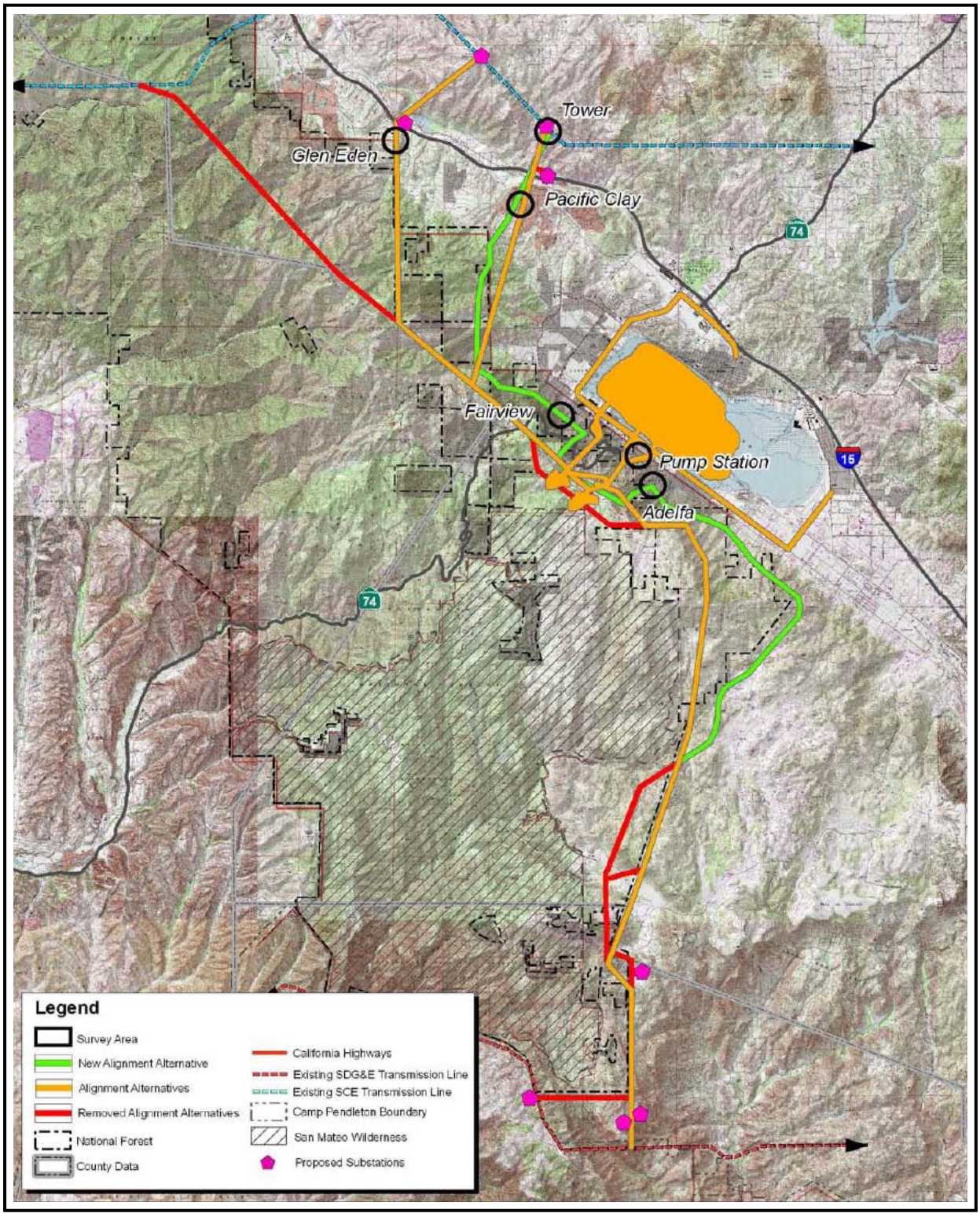

Figure 4.6.1-9. Coastal California Gnatcatcher Focused Survey Areas
Source: Michael Brandman Associates

Note: Thise figure illustrates the range of transmission alignments considered in the FERC FEIS and the location of those focused wildlife surveys conducted in association with those alignments. With the exception of the proposed Project alignment identified in this PEA, the transmission alignments depicted herein are not being proposed by the Applicant and are not being presented for the CPUC's consideration.

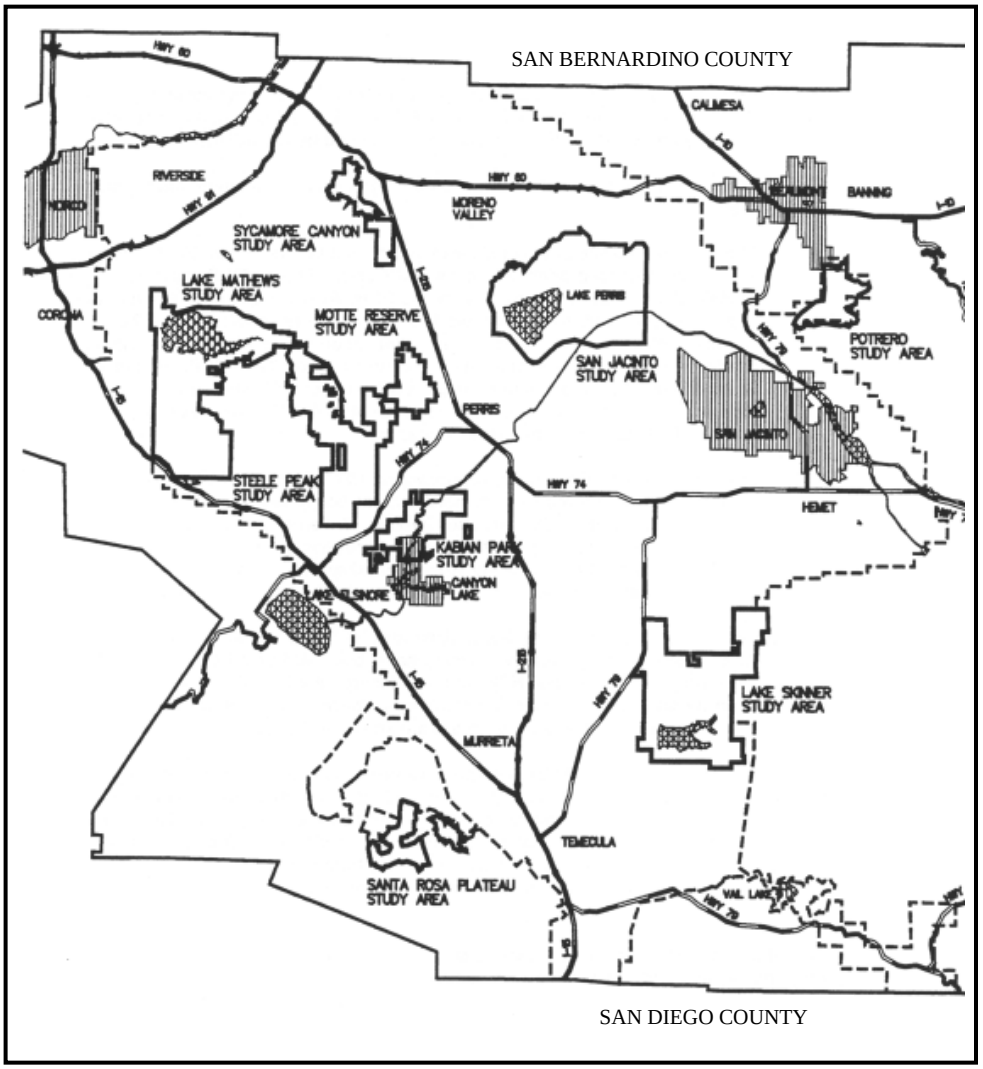

Figure 4.6.1-10. Riverside County Stephens' Kangaroo Rat Habitat Conservation Plan Fee Assessment Area
Source: County of Riverside

◊ **Western Riverside County Multi-Species Habitat Conservation Plan**. As illustrated in Figure 4.6.1-11 (Western Riverside County Multi-Species Habitat Conservation Plan), the Western Riverside County MSHCP, as approved by the County of Riverside, participating cities, and State and Federal regulatory agencies in August 2004,[70] is a comprehensive, multi-jurisdictional habitat conservation plan focusing on conservation of species and their associated habitats in western Riverside County. The goal of the Western Riverside County MSHCP is to maintain biological and ecological diversity within a rapidly urbanizing region. The Western Riverside County MSHCP establishes a multi-species conservation program that minimized and mitigates the expected loss of habitat values and the incidental take of "covered species" within the plan area and provides avoidance, minimization, and mitigation measures for impacts of proposed activities on those species and their habitats.

Under the Western Riverside County MSHCP, a single permit is issued to 22 Permittees for a period of 75 years.[71] The approval of the Western Riverside County MSHCP and execution of the "Implementing Agreement" (IA) by the wildlife agencies allows signatories of the IA to issue "take" authorizations for all species covered by the plan, including federally-listed and State-listed species as well as other identified sensitive species and/or their habitats. Regional utility projects will contribute to the implementation of the Western Riverside County MSHCP and provide an additional contingency should other revenue sources not generate the projected levels of funding or should implementation costs be higher than projected. The Western Riverside County MSHCP is divided into multiple planning areas that contain regionally specific management issues. A portion of the Project is generally located within the Elsinore and Temescal Canyon Area Plans. To comply with the Western Riverside County MSHCP, the Applicant may be required to complete the Habitat Evaluation Acquisition and Negotiation System (HANS) process. In addition, the County also requires habitat assessments and focused surveys were appropriate for burrowing owl and narrow endemic plants, as well as riparian/riverine and vernal pool assessments and urban/wildlands interface analyses.

The Western Riverside County MSHCP protects sensitive biological resources while affording cities and other municipal agencies within its boundaries the ability to develop their lands within an expeditious and controlled manner. As part of establishing core conservation areas for the plan's system of habitat preserves, focus is being given to acquiring private lands. Public lands, such as those managed in the CNF, are recognized for contributing to core preserve designs and habitat linkages; however, management of these public lands is left to the requirements and policies of the respective public agency. Most of the Project

[70]/ On January 15, 2003, in response to the County or Riverside's release of the "Draft Environmental Impact Report/Environmental Impact Statement – Western Riverside County Multi-Species Habitat Conservation Plan," the EVMWD submitted correspondence regarding the LEAPS and the TE/VS Interconnect projects.

[71]/ Permittees include the Countyof Riverside, Riverside County Flood Control District, Riverside County Parks and Open Space District, Riverside County Waste Management District, the Cities of Banning, Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Norco, Perris, Riverside, San Jacinto, and Temecula, Riverside County Transportation Commission, California State Parks Department, and California Department of Transportation.

area, outside of those elements located in the Lake Elsinore area, are located either within the CNF or in San Diego County and are, therefore, not regulated by the Western Riverside County MSHCP.

In respond to that correspondence, as contained in the final EIR/EIS, the County of Riverside noted: "The Draft MSHCP and the accompanying IA contemplate the need for future facilities that are proposed by non-Permittees, such as the projects proposed by EVMWD, and provide a mechanism for such future facilities to receive take authorization pursuant to Section 11.8 of the IA. . .The MSHCP supports a Permit that would be issued under Section 10(a)(1)(B) of the Federal Endangered Species Act (FESA). Section 10(a)(1)(B) of FESA provides for take of federally-listed species related to non-Federal actions. Projects that involve Federal actions that may have an effect on federally-listed species are not permitted take authorization through Section 10(a)(1)(B), and must pursue take under Section 7 of FESA. Therefore, a project that involves a Federal action that may affect federally-listed species would be subject to the Federal consultation process outlined in Section 7 of FESA. Under the current proposed structure of the Draft MSHCP and the Draft IA, assuming the [Elsinore Valley Municipal Water] District requires take authorization for listed species under FESA, it may elect to either obtain such take authorization through the MSHCP or through independent FESA Section 10 (a) or 7 processes. If the [Elsinore Valley Municipal Water] District elects not to pursue take authorization through the MSHCP, it would not be subject to the requirements of the MSHCP. . .If EVMWD seeks to become a Participating Special Entity, a mutually agreeable mitigation program would need to be negotiated. If EVMWD did not agree that the mitigation was reasonable, they could choose not to utilize the MSHCP, and could seek take authorization independently from the appropriate agencies."[72]

On June 22, 2004, the USFWS issued a biological opinion (BO) addressing the MSHCP.[73] The BO contains a detailed "species by species evaluation" of each of the 146 "covered species" (including 14 federally-listed animals, 11 federally-listed plants, and 121 unlisted plants and animals).

◊ **Integrated Natural Resources Management Plan**. The USMC's "Integrated Natural Resources Management Plan – Marine Corps Base and Marine Corps Air Station Camp Pendleton" establishes the framework for the management of natural resources on Camp Pendleton for the period 2002-2007. A revised draft "Integrated Resources Management Plan"[74] is presently undergoing review.[75]

[72]/ County of Riverside and United States Fish and Wildlife Service, Final Environmental Impact Report/ Environmental Impact Statement - Western Riverside County Multi-Species Habitat Conservation Plan, SCH No. 2001101108, certified June 17, 2003, Volume 5, Responses E^2-2, E^2-4, and E^2-9.

[73]/ Op. Cit., Intra-Service Formal Section 7 Consultation/Conference for Issuance of an Endangered Species Act Section 10(a)(1)(B) Permit (TE-088608-0) for the Western Riverside County Multiple Species Habitat Conservation Plan, Riverside County, California, June 22, 2004.

[74]/ Op. Cit. Integrated Natural Resources Management Plan – Marine Corps Base and Marine Corps Air Station, Camp Pendleton, Draft Review, August 2006.

[75]/ As indicated therein: "The Base supports DOD's policy for integrating migratory bird management into existing natural resources and land management programs consistent with the military mission. In support of that policy Camp Pendleton participates in the international Partners in Flight program, through the establishment and maintenance of Monitoring Avian Productivity and Survivorship (MAPS) station. . .Two MAPS stations were established at Camp Pendleton in 1995 and operated annually thereafter – one in riparian habitat along De Luz Creek and the other in oak woodland near Case Springs (operation of this station ceased after 1999 season due to low capture rates)" (Source: United States Marine

According to the INRMP, Camp Pendleton currently represents: (1) about 20 percent of the least tern (*Sterna antillarum browni*) population breeding in California; (2) 12 percent of the region's coastal California gnatcatcher population; (3) nearly 6 percent of the region's coastal sage scrub habitat; (4) more than 50 percent of the region's least Bell's vireo population; (5) about 12 percent of the southern California southwestern willow flycatcher population and 24 percent of San Diego County southwestern willow flycatcher population; (6) 42 percent of San Diego County's breeding western snowy plovers (*Charadrius alexandrinus nivosus*); (7) 75 percent (3 of 4 sites) of the known population of Pacific pocket mouse (*Perognathus longimembris pacificus*); (8) westernmost coastal population of Stephens' kangaroo rat; (9) 100 percent of the known tidewater goby (*Eucyclogobius newberryi*) populations in Orange and San Diego Counties; (10) most abundant population of arroyo toad in three major drainages; (11) about 10 percent of the remaining vernal pools in San Diego County. Additionally, the DOD lands (Camp Pendleton and Miramar) represent 88 percent of the remaining vernal pools in San Diego County; and (12) more than 30 percent of the region's thread-leaf brodiaea population.[76]

Camp Pendleton supports high quality and, in some instances, the last remaining intact stands of sensitive habitat types in coastal southern California. As shown in Figure 4.6.1-12 (Major Vegetation Types Located within Camp Pendleton), 21 native and non-native vegetation types are mapped on Camp Pendleton.

The following three federally-listed threatened or endangered plant species are known to exist on Camp Pendleton: (1) thread-leaved brodiaea; (2) spreading navarretia (*Navarretia fossalis*); and (3) San Diego button-celery (*Eryngium aristulatum* var. *parishii*).[77] In addition, the large undeveloped portions of Camp Pendleton support a variety of wildlife species. Five State-listed threatened and endangered species and over 55 California listed Species of Special Concern have been identified on Camp Pendleton, including Swainson's hawk (California threatened); western yellow-billed cuckoo (California endangered); Belding's savannah sparrow (California endangered); peregrine falcon (California endangered); bank swallow (California threatened); two-striped garter snake (California protected); and orange-throated whiptail (California protected).[78]

As indicated in Figure 4.6.1-13 (Federally-Listed Threatened and Endangered Plant and Wildlife Species at Camp Pendleton) and Table 4.6.1-5 (Federally-Listed Threatened and Endangered Plant and Wildlife Species at Camp Pendleton), 18 federally-listed threatened or endangered species are found on or transit the base. Although Camp Pendleton provides habitat for 18 of San Diego County's 38 federally-listed threatened or endangered species, it encompasses less than 4.6 percent of the total land area of San Diego County.

Corps Base Camp Pendleton, Integrated Natural Resources Management Plan – Marine Corps Base and Marine Corps Air Station, Camp Pendleton, Draft Review, August 2006, p. 4-46).

[76]/ Op. Cit., Integrated Natural Resources Management Plan – Marine Corps Base and Marine Corps Air Station Camp Pendleton, p. 2-43.

[77]/ Ibid., p. 3-16.

[78]/ Ibid., p. 3-21.

Table 4.6.1-5. Federally-Listed Threatened and Endangered Plant and Wildlife Species at Camp Pendleton

Common Name	Scientific Name
Birds	
Bald Eagle[1]	*Haliaeetus leucocephalus*
Brown Pelican[2]	*Pelecanus occidentalis*
California least tern	*Sterna antillarum browni*
Coastal California gnatcatcher	*Polioptila californica californica*
Least Bell's vireo	*Vireo bellii pusillus*
Light-footed clapper rail[3]	*Rallus longirostris levipes*
Peregrine falcon[4]	*Falco peregrinus anatum*
Southwestern willow flycatcher	*Empidonax trailli extimus*
Western snowy plover	*Charadrius alexandrinus nivosus*
Mammals	
Pacific pocket mouse	*Perognathus longimembris pacificus*
Stephens' kangaroo rat	*Dipodomys stephensi*
Fish	
Southern steelhead trout[5]	*Oncorhynchus mykiss*
Tidwater goby	*Eucyclogobius newberryi*
Amphibians	
Arroyo toad	*Bufo californicus*
Crustacean	
Riverside fairy shrimp	*Steptocephalus woottoni*
San Diego fairy shrimp	*Branchinecta sandiegonensis*
Plants	
San Diego button-celery	*Eryngium aristulatum* var. *parishii*
Thread-leaved brodiaea	*Brodiaea filifolia*

Notes:
1. Known to occasionally transit Camp Pendleton.
2. Know to frequently transit Camp Pendleton.
3. Only unpaired (possibly transient) light-footed clapper rails have been observed on Camp Pendleton since 1988.
4. The peregrine falcon was recently delisted.
5. Recently rediscovered upstream of the Marine Base on the San Mateo Creek and is pending listing for the Camp Pendleton area.

Source: United States Marine Corps, Camp Pendleton, Integrated Natural Resources Management Plan - Marine Corps Base and Marine Corps Air Station Camp Pendleton, October 2001, Table 3-4

◊ S**an Diego Gas & Electric Company Subregional Plan**. The proposed Talega-Escondido 69/230 kV transmission line upgrade may benefit from the ground disturbance and take authorizations of the existing "San Diego Gas & Electric Company Subregional Plan" (USFWS Permit No. 809637), as issued on December 12, 1995.

◊ **San Diego Northern Multi-Species Conservation Plan Subarea**. The "San Diego Northern Multi-Species Conservation Plan Subarea" study area encompasses about 313,777 acres roughly encompassing the areas north of the San Dieguito River, Elfin Forest and Harmony Grove, north of Camp Pendleton, DeLuz, Fallbrook, Rainbow, Pauma Valley, Lilac, Valley Center, Rancho Guejito and the majority of Ramona. Since the Northern San Diego County subarea has

not yet been adopted, no current compliance obligations exist with regards thereto.

In San Diego County, with the exception of the proposed Talega-Escondido 69/230-kV transmission upgrades and existing SDG&E substation sites, all portions of the Project are located on Federal lands (CNF, Camp Pendleton) and are subject to the resource conservations plans of those administrating Federal agencies.

◊ Lake Mathews Multi-Species Habitat Conservation Plan. The 13,000-acre Lake Mathews Multi-Species Habitat Conservation Plan was approved by the USFWS and CDFG in December 1995.

As addressed in the "Biological Resources Technical Report for the Valley Rainbow Interconnect," the existing 1,000-foot wide Talega-Escondido transmission line study area is primarily located in northern San Diego County, occasionally bordering Orange and Riverside Counties. The western 16 miles of the line are bordered to the north by the CNF. Most of the Talega-Escondido area is comprised of native scrubs (chaparral and San Diegan coastal sage scrub) on steep slopes and disturbed cover types (avocado and citrus groves, cropland, and residential and industrial developed areas). There are small areas of riverine and wetland habitat, grass and herb-dominated communities, and woodland and forest vegetation.

Information concerning the existing biological resource setting within the 1,000-foot wide study area[79] centered by the existing Talega-Escondido transmission line is derived from the biological resource assessment conducted by SDG&E as part of SDG&E's Valley-Rainbow Interconnect project.[80] Vegetation community layers were obtained from San Diego Association of Governments (SANDAG) and geographic information system[81] (GIS) data layers plotted and field verified. Field verification of the vegetation communities was conducted either from a vehicle (Pala to Escondido) or helicopter (Talega to Rainbow) in mid-November (2000). Corrections to the SANDAG vegetation communities, as noted during the field verification, were made to the GIS vegetation community file. As illustrated in Figure 4.6.1-14 (Talega-Escondido Transmission Line – Vegetation Communities, Cover Types, and Special Status Botanical Species), all vegetation communities mapped and described are consistent with Holland.[82]

Because the existing right-of-way and existing Talega and Escondido Substations are private property, physical access to that area was unavailable to the Applicant in the preparation of this analysis. The Applicant has, therefore, sought to rely upon the field verifications performed by credible biologists working under contract to SDG&E. Although field surveys were conducted, as noted in SDG&E's PEA: "No surveys for sensitive plant or animal species were conducted in the corridor."[83] Prior to any ground disturbing activities, updated survey information and/or biological monitoring may be required by responsible resource agencies.

[79]/ Since the existing SDG&E Talega-Escondido 230-kV transmission line right-of-way is 300-feet wide, the acreages presented substantially exceed those potentially impacted by the Project.
[80]/ KEA Environmental, Inc., Biological Resources Technical Report for the Valley Rainbow Interconnect, March 16, 2001.
[81]/ San Diego Association of Governments, MHCP Geographic Information System Vegetation Communities File, 1995.
[82]/ Holland, R.F., Preliminary Description of the Terrestrial Natural Communities of California, California Resource Agency, 1986.
[83]/ Op. Cit., Valley-Rainbow Interconnect Proponent's Environmental Assessment, March 2001, p. 4-123.

Surveys of the Talega-Escondido transmission alignment were performed by Helix Environmental and included in the Sunrise FEIR/FEIS. Those surveys are incorporated herein by reference. Additional surveys were conducted by Michael Brandman Associates (MBA) for the Applicant. Copies of current biological resource assessments conducted by MBA for the Project have been provided to the CPUC.

The approximately 16-mile portion of the Talega-Escondido transmission line located within Camp Pendleton is primarily native scrub (southern mixed chaparral and Diegan coastal sage scrub) along the steep slopes and coast live oak woodland or forest and southern sycamore/alder riparian forest in the valleys and drainages. Approximately three miles of this section is dominated by native grassland interspersed with Engelmann oak woodland. The approximately 22-mile portion from the eastern edge of Camp Pendleton to Pala Road is predominantly native scrubs interspersed with groves and orchards along the hillsides. The approximately 8-mile segment south of Pala Road to south of Old Castle Road is covered mostly with groves with small patches of native scrub and residential areas. The southernmost segment is primarily developed with residential, with small patches of native scrub.

The southern end of the route becomes increasingly urban as it approaches the City of Escondido. Riverine and wetland habitat along the Talega-Escondido transmission line corridor are associated with numerous creeks and rivers, including Christianitos Creek, San Mateo Creek, and Roblar Creek on Camp Pendleton; the Santa Margarita River along the northeastern portion; and Gomez Creek, the San Diego Aqueduct, San Luis Rey River, and Keys Creek on the Rainbow to Escondido portion.

As noted: "That portion of the study area within Camp Pendleton is relatively undisturbed, biologically diverse, and known to support numerous rate and declining native habitats and sensitive plant and animal species. Similarly, the majority of this line outside of Camp Pendleton to the limits of the City of Escondido (exclusive of grove and orchard lands) also traverses relatively intact native vegetation communities. Only the segment of the 230 kV line near and through the City of Escondido traverses more densely developed lands that have an overall reduced value to biological resources."[84]

As outlined in Table 4.6.1-6 (Talega-Escondido Transmission Line – Vegetation Communities Located within the Study Area)[85] and described in SDG&E's biological resource assessment, a total of 22 vegetation communities and cover types coincide with the 230-kV study corridor. The approximately 47-mile, 1,000-foot wide 230-kV study corridor encompasses approximately 6,223 acres, primarily dominated by scrubs and chaparral (57 percent) and disturbed cover types (23 percent). For that 7.7-mile segment where the existing 69-kV line will be relocated to new steel poles, approximately 28 percent is Diegan coastal sage scrub.[86] In addition, within this study corridor, the percentage of riverine and wetland habitat, grass and herb-dominated communities, and woodland and forest vegetation cover are approximately 6 percent, 7 percent, and 7 percent, respectively. [87]

[84]/ Ibid., p. 4-124.
[85]/ Op. Cit., Biological Resources Technical Report for the Valley Rainbow Interconnect, March 16, 2001, pp. 13-14.
[86]/ Ibid., p. 15.
[87]/ Op. Cit., Valley-Rainbow Interconnect Proponent's Environmental Assessment, p. 4-124.

The acreage figures in Table 4.6.1-6 (Talega-Escondido Transmission Line – Vegetation Communities Located within the Study Area) are not intended to illustrate either the area of anticipated physical disturbance or the acreages of each plant community that would be directly impacted by the proposed 230-kV line upgrade and 69-kV line relocation. The acreages identify therein reflect the total acreage of each community located within the identified study area.

Table 4.6.1-6. Talega-Escondido Transmission Line
Vegetation Communities Located within the Study Area

Vegetation Communities	Study Corridor (acres)
Scrub and Chaparral	
Southern Mixed Chaparral	2,651.0
Diegan Coastal Sage Scrub	900.3
Total Scrub and Chaparral	3,551.3
Riverine, Wetlands, and Water	
Open Water, Reservoir, Pond	0.7
Southern Riparian Forest	22.2
Coast Live Oak Riparian Forest	93.6
Southern Cottonwood-Willow Riparian Forest	16.4
Southern Sycamore-Alder Riparian Woodland	178.3
Southern Riparian Scrub	21.0
Mule Fat Scrub	1.5
Southern Willow Scrub	2.4
Disturbed Wetland	3.7
Total Riverine, Wetlands, and Water	339.8
Grass- and Herb-Dominated Communities	
Non-Native Grassland	181.4
Native Grassland	284.9
Total Grass- and Herb-Dominated Communities	466.3
Woodlands and Forests	
Oak Woodland	
Coast Live Oak Woodland	288.1
Engelmann Oak Woodland	152.7
Total Woodlands and Forests	440.8
Ruderal, Exotic, Developed, and Unvegetated Areas	
Dairy and Livestock Feed Yards	4.9
Disturbed Habitat	46.1
Eucalyptus Woodland	5.2
Field Croplands	83.4
Grove, orchards, and Vineyards	729.2
Residential/Urban/Developed	552.1
Ruderal	3.7
Total Ruderal, Exotic, Developed, and Unvegetated Area	1,424.6
Total Area of Vegetation Communities and Cover Types	6,222.8

Source: KEA Environmental, Inc.

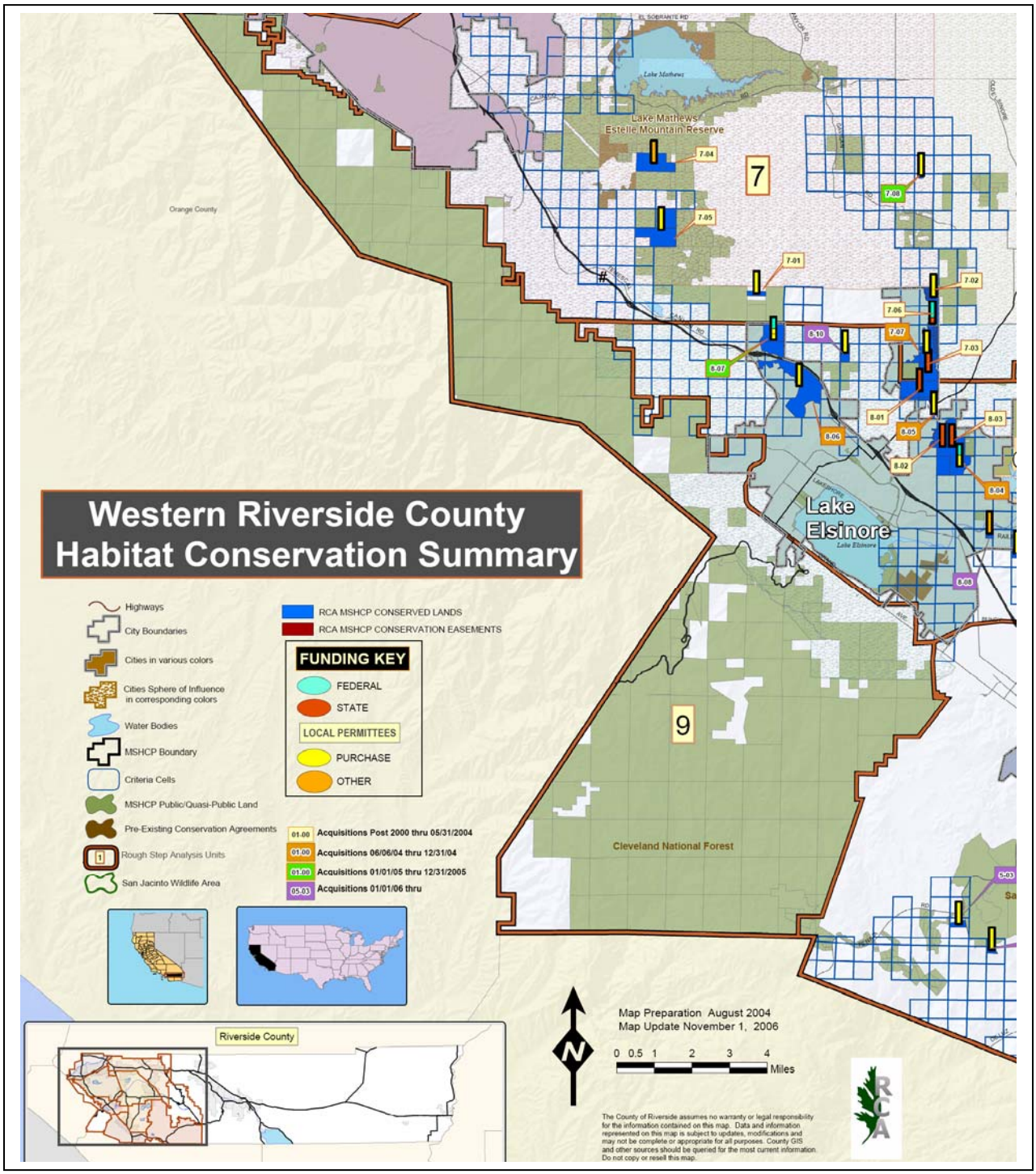

Figure 4.6.1-11. Western Riverside County Multi-Species Habitat Conservation Plan
Source: County of Riverside

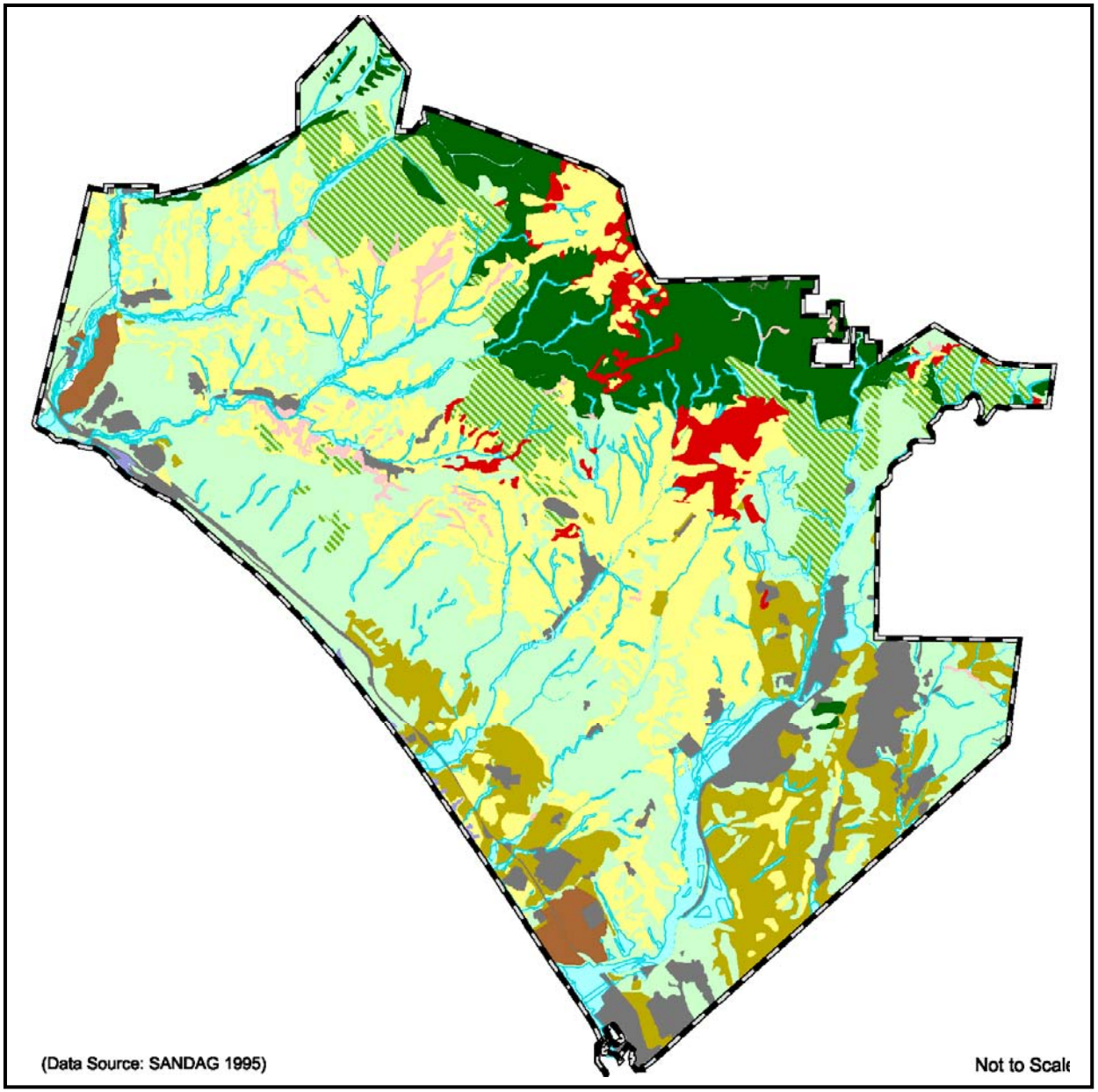

Figure 4.6.1-12. Major Vegetation Types Located within Camp Pendleton
Source: Integrated Natural Resources Management Plan Marine Corps Base and Marine Corps Air Station Camp Pendleton

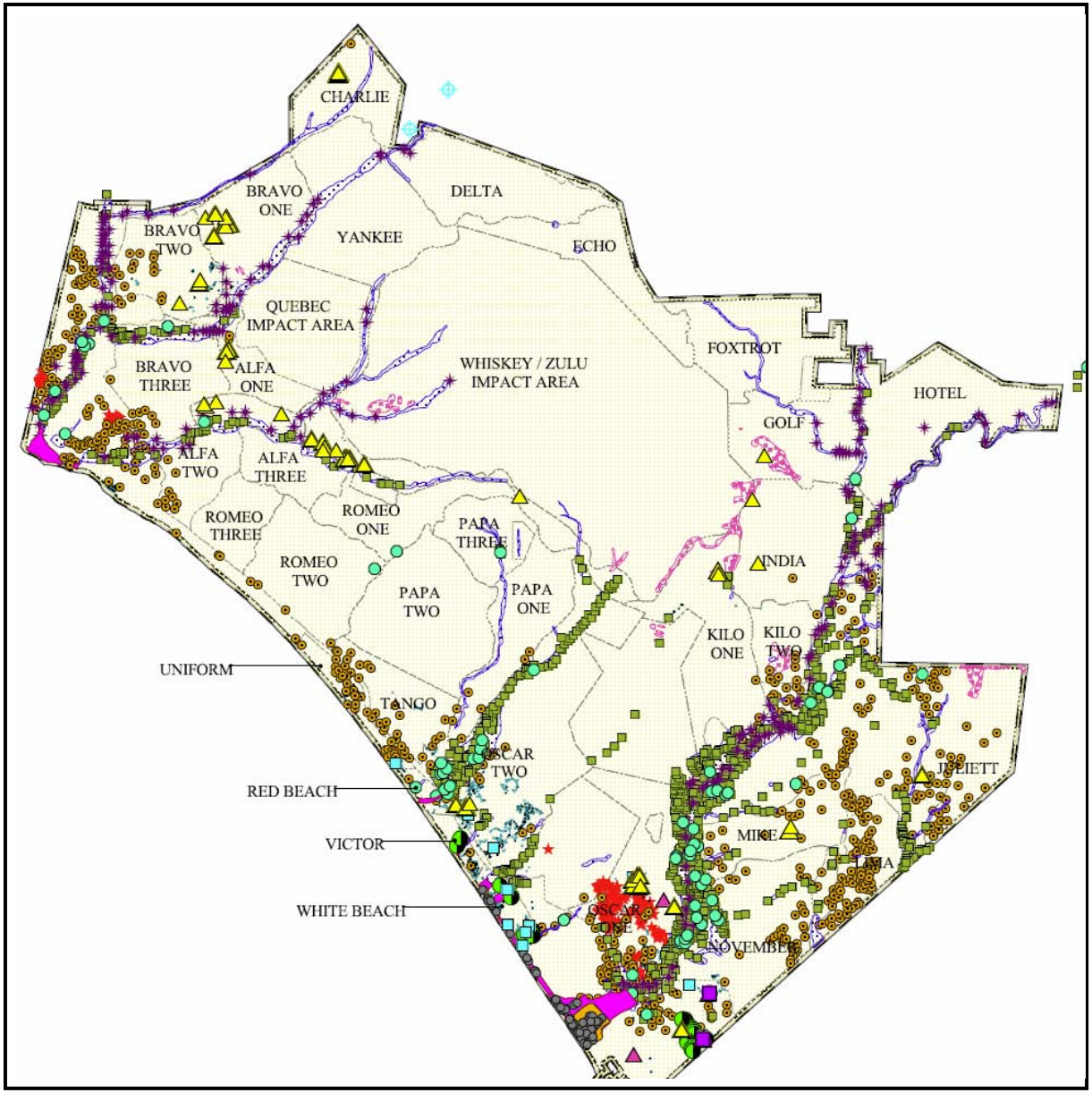

Figure 4.6.1-13. Federally-Listed Threatened and Endangered Plant and Wildlife Species at Camp Pendleton
Source: Integrated Natural Resources Management Plan Marine Corps Base and Marine Corps Air Station Camp Pendleton

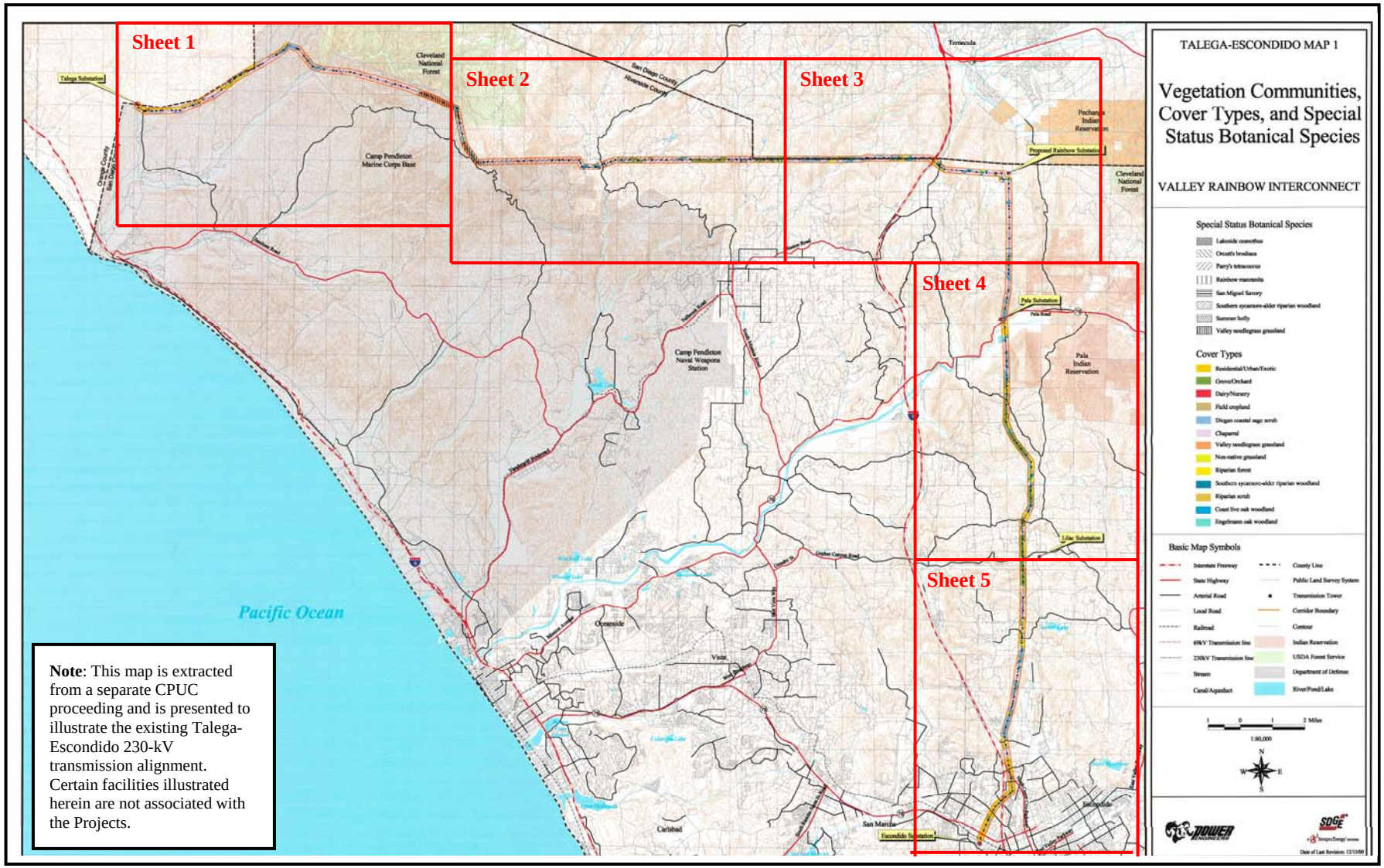

Figure 4.6.1-14. Talega-Escondido Transmission Line Vegetation Communities, Cover Types, and Special Status Botanical Species (1 of 6)
Source: San Diego Gas & Electric Company

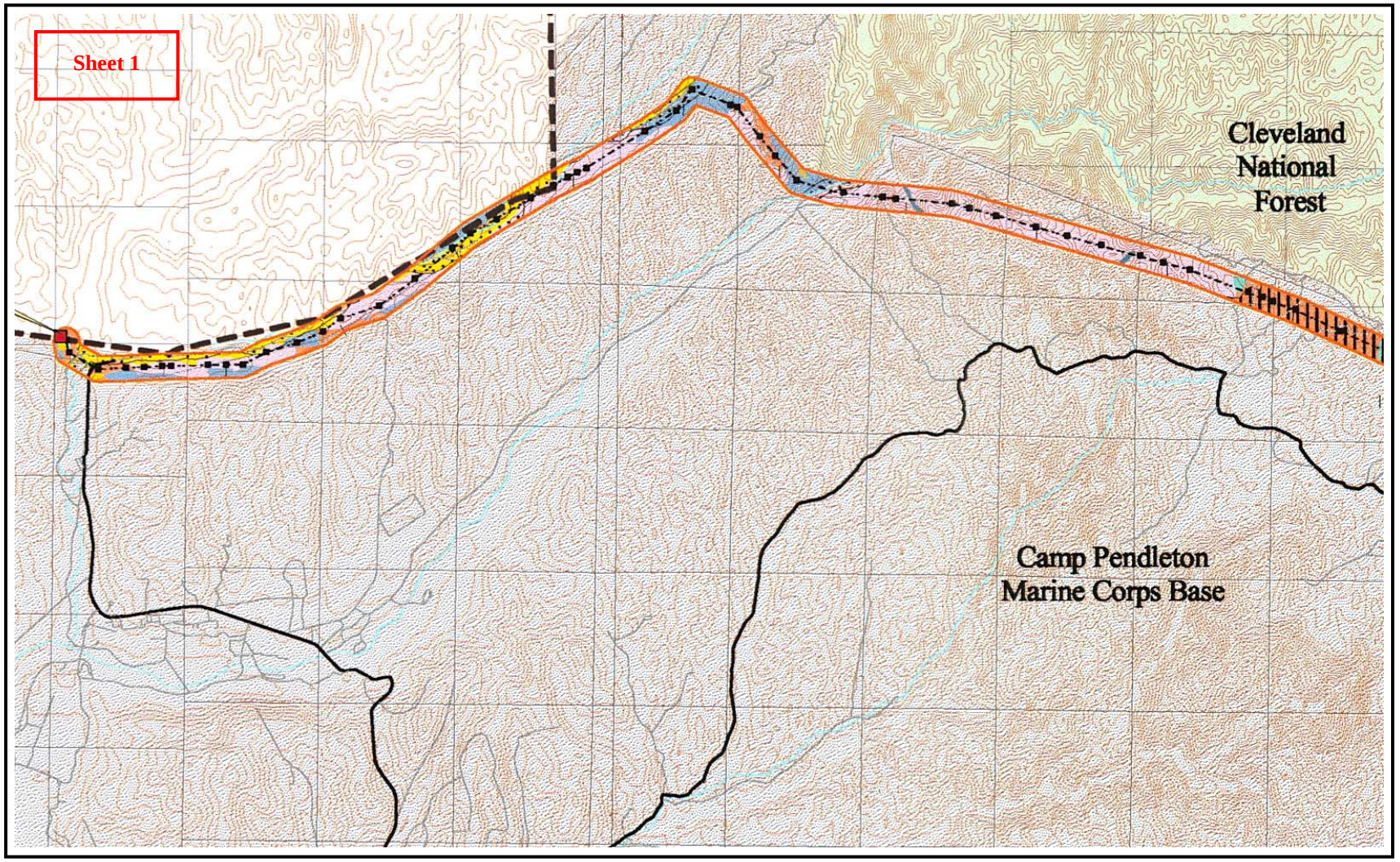

Figure 4.6.1-14. Talega-Escondido Transmission Line Vegetation Communities, Cover Types, and Special Status Botanical Species (2 of 6)
Source: San Diego Gas & Electric Company

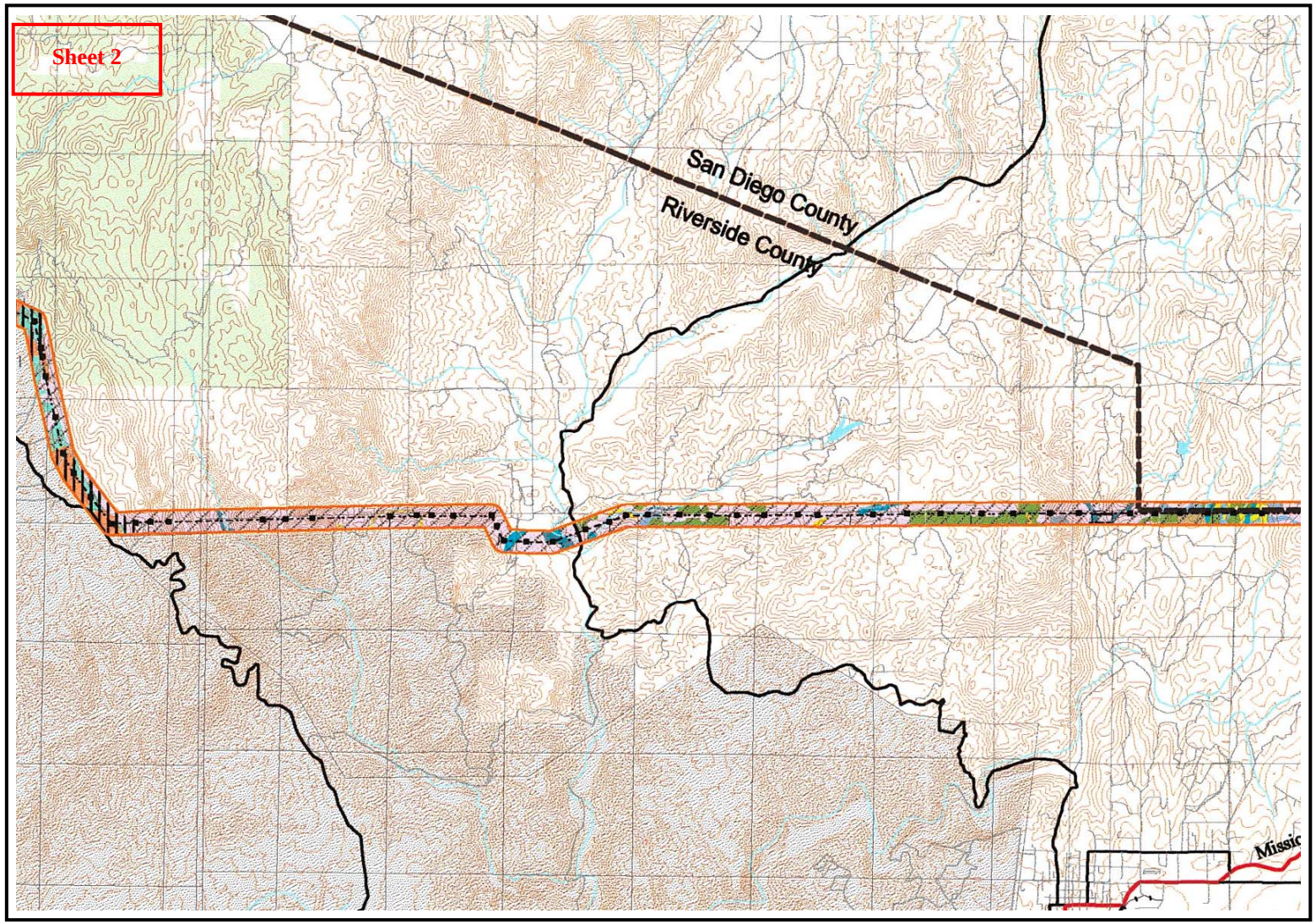

Figure 4.6.1-14. Talega-Escondido Transmission Line Vegetation Communities, Cover Types, and Special Status Botanical Species (3 of 6)
Source: San Diego Gas & Electric Company

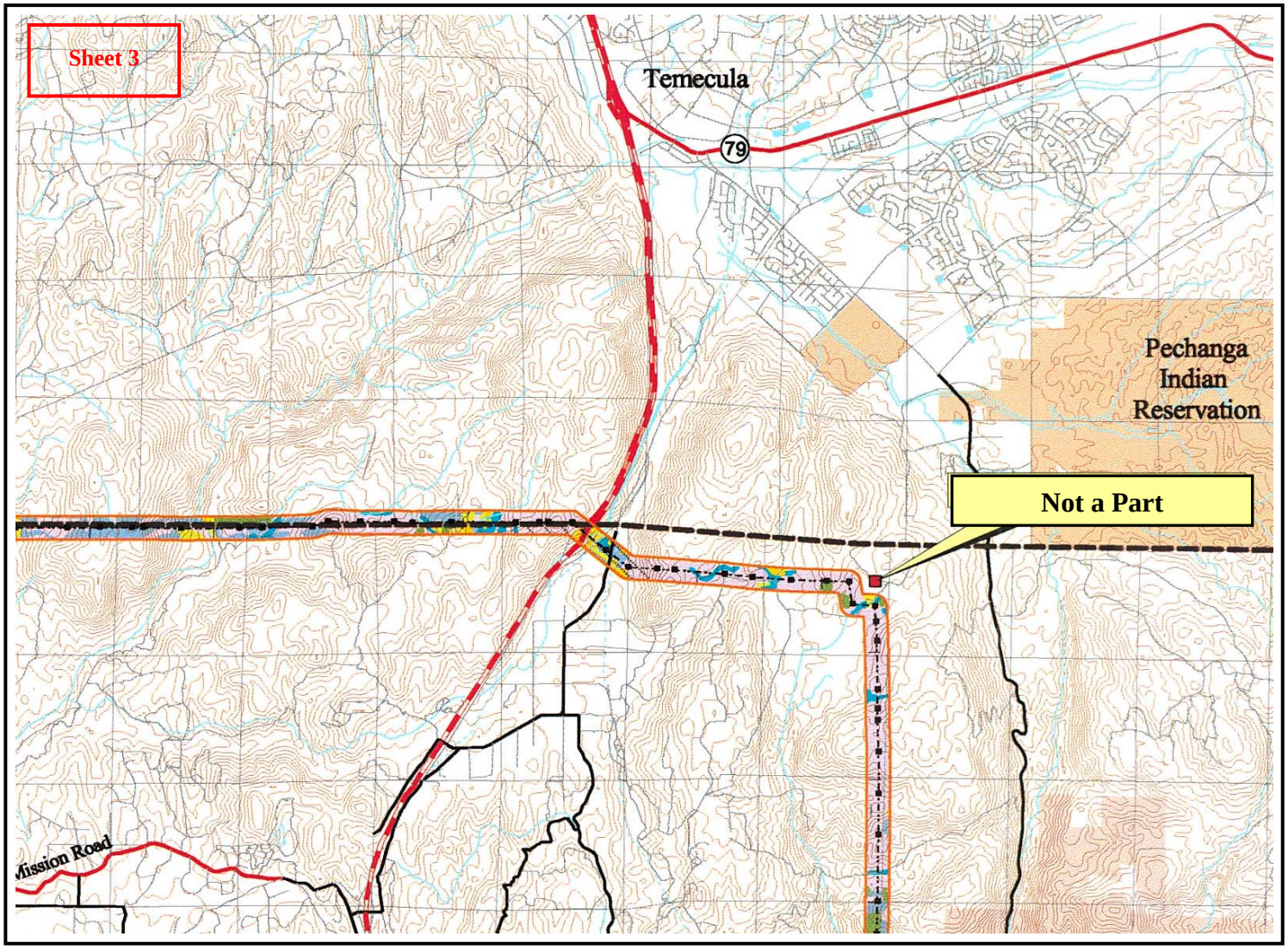

Figure 4.6.1-14. Talega-Escondido Transmission Line Vegetation Communities, Cover Types, and Special Status Botanical Species (4 of 6)
Source: San Diego Gas & Electric Company

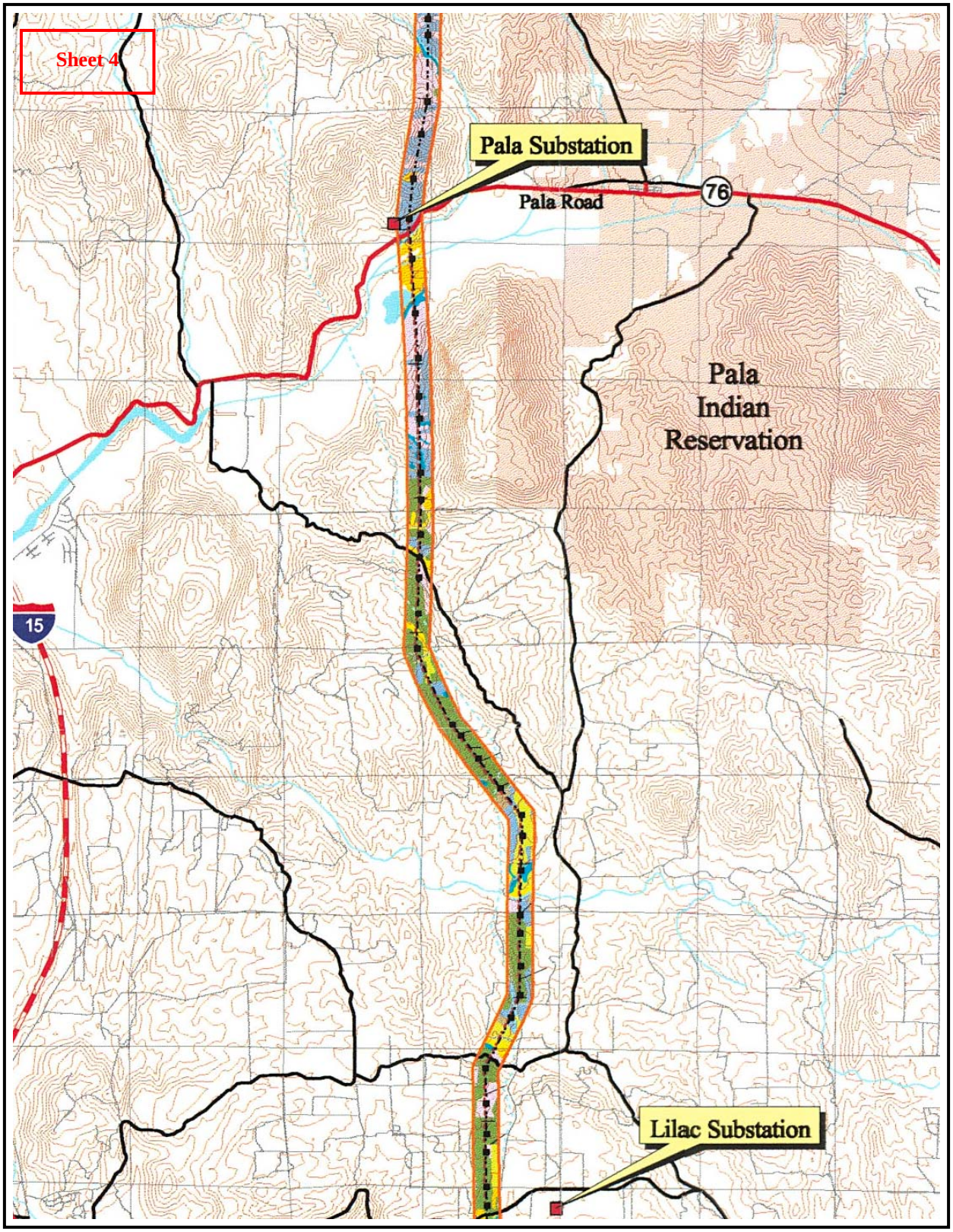

Figure 4.6.1-14. Talega-Escondido Transmission Line Vegetation Communities, Cover Types, and Special Status Botanical Species (5 of 6)
Source: San Diego Gas & Electric Company

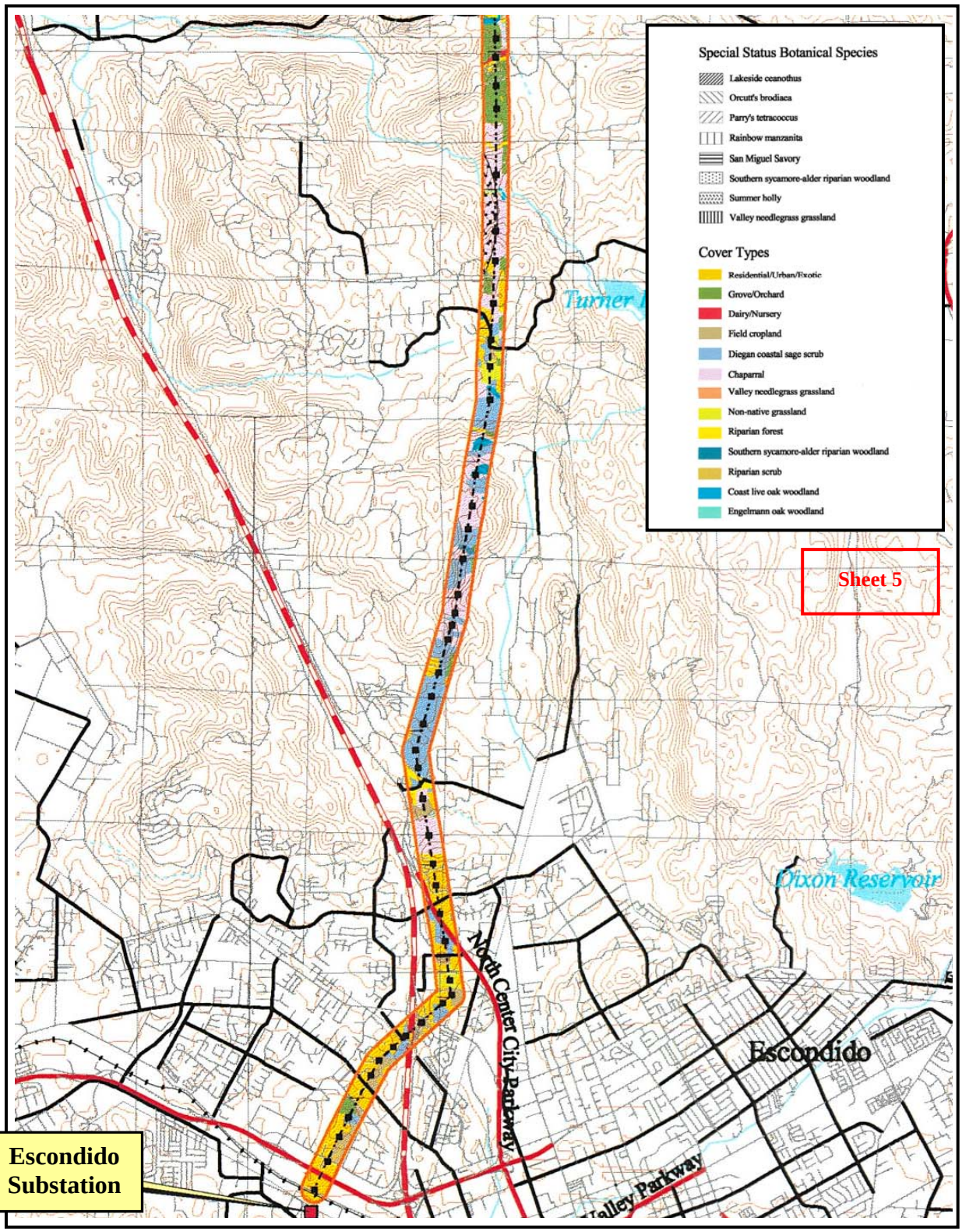

Figure 4.6.1-14. Talega-Escondido Transmission Line Vegetation Communities, Cover Types, and Special Status Botanical Species (6 of 6)
Source: San Diego Gas & Electric Company

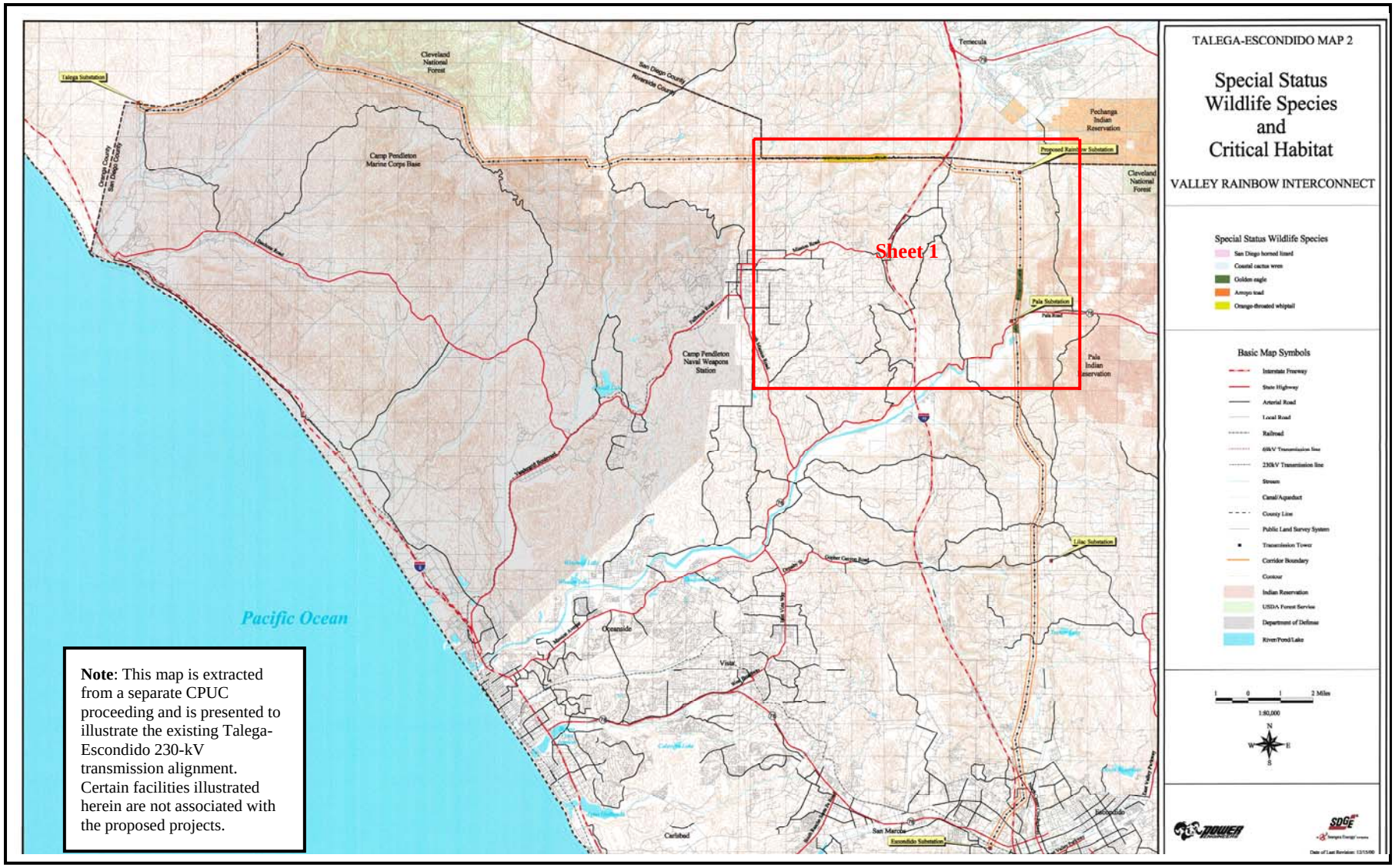

Figure 4.6.1-15. Talega-Escondido Transmission Line Special Status Wildlife Species and Critical Habitat (1 of 2)
Source: San Diego Gas & Electric Company

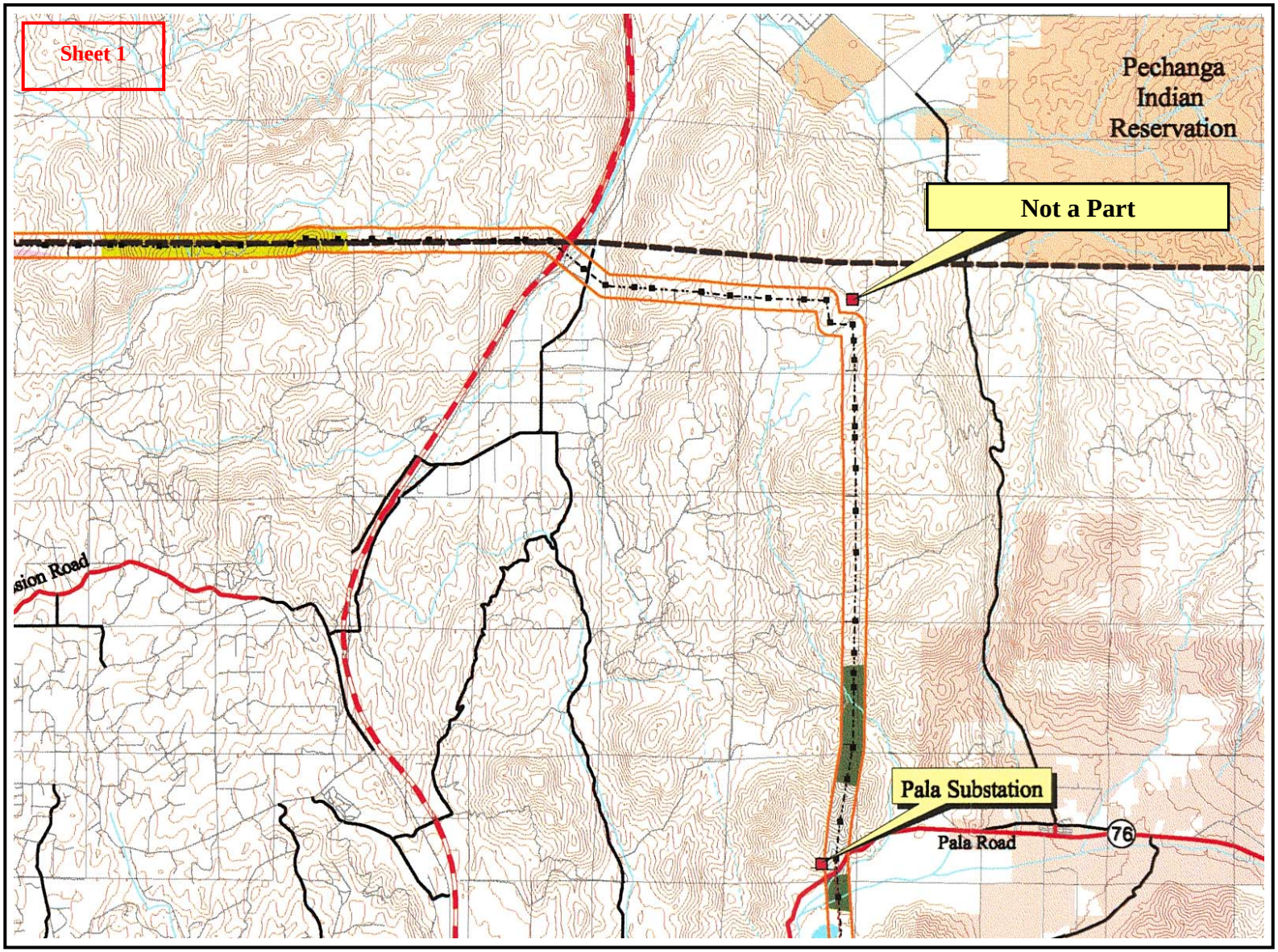

Figure 4.6.1-15. Talega-Escondido Transmission Line Special Status Wildlife Species and Critical Habitat (2 of 2)
Source: San Diego Gas & Electric Company

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Several riparian vegetation communities have been mapped for the study area, including a general mapping of southern riparian forest, as well as the vegetation associations of coast live oak riparian forest and southern cottonwood willow riparian forest, southern sycamore alder riparian woodland, southern riparian scrub, and the vegetation associations of mule fat and southern willow scrub. Riverine and wetland habitat in this study corridor is associated with a number of creeks and rivers including: Chritianitos Creek, San Mateo Creek and Roblar Creek on Camp Pendleton; the Santa Margarita River along the northern portion of the study area; and Gomez Creek, the San Diego Aqueduct, San Luis Rey River and Keys Creek on the Rainbow to Escondido portion of the study area."[88] Wildlife species tend to use the natural cover features within these types of drainages for protection from predators and sources of forage.[89] Each of the identified plant communities are briefly described below.

- **Southern mixed chaparral**. Southern mixed chaparral is dominated by evergreen shrubs with small, sclerophyllous leaves in areas of rocky soil. This association is characterized by a closed spaced canopy and the community is represented by species such as chamise (*Adenostoma fasciculatum*), toyon (*Heteromeles arbutifolia*), white-stem wild lilac (*Ceanothus leucodermis*), sugarbush (*Rhus ovata*), hickleaf wild lilac (*Ceanothus crassifolius*), big-berry Manzanita (*Arctostaphylos glauca*), and scrub oak (*Quercus berberidifolia*).

- **Diegan coastal sage scrub**. Diegan coastal sage scrub is dominated by low, subshrubs that actively grow during the winter and early spring. This community is found on xeric sites with shallow or clay soils. Representative species include California sagebrush (*Artemisia californica*), flat-topped buckwheat (*Eriogonum fasciculatum*), deerweed (*Lotus scoparius*), laurel sumac (*Malosma laurina*), and black sage (*Salvia mellifera*). Diegan coastal sage scrub is considered a sensitive habitat by the CDFG because it supports a number of federally-listed and State-listed species.[90]

- **Coast live oak riparian forest**. Coast live oak riparian forest is dominated by coast live oak (*Quercus agrifolia*) trees along drainages and stream channels and may also have other tree species as minor components, such as western sycamore (*Platanus racemosa*) and Fremont's cottonwood (*Populus fremontii*).

- **Southern cottonwood-willow riparian forest**. Southern cottonwood-willow riparian forest is an open or closed canopy forest that is generally greater than 20 feet high and occupies relatively broad drainages and flood plains supporting perennially wet streams. This community is dominated by mature individuals of winter deciduous trees, including Fremont's cottonwood and several species of willow (*Salix gooddingii*, *S. Lasiandra*, *S. Lasiolepis*), and often has a dense understory of shrubby willows, mule fat, and mugwort (*Artemisia douglasiana*).

[88]/ Ibid.
[89]/ Op. Cit., Biological Resources Technical Report for the Valley Rainbow Interconnect, p. 24.
[90]/ Op. Cit., Biological Resources Technical Report for the Valley Rainbow Interconnect, pp. 14-15.

- **Southern sycamore-alder riparian woodland**. Southern sycamore-alder riparian woodland is tall, open, broadleafed, winter deciduous streamside woodland dominated by western sycamore and often also by alder (*Alnus rhombifolia*).[91]

- **Mule fat scrub**. Mule fat scrub is found in drainages and streams that are subject to frequent flooding and are dominated by mule fat with lesser amounts of willow species.

- **Southern willow scrub**. Southern willow scrub occurs in areas of dense growth along streams and drainages, dominated by red willow (*Salix laevigata*), arroyo willow (*S. lasiolepis*), narrow-leaved willow (*S. exigua*), black willow (*S. gooddingii*), and mule fat.

- **Disturbed wetlands are communities dominated by exotic wetland species**. These species have invaded sites that had been previously disturbed or are periodically disturbed. This perturbation regime has resulted in the displacement of native wetland species and the subsequent colonization of these areas by exotics. Disturbed wetlands can be dominated by giant reed (*Arnundo donax*), tamarisk (*Tamarix* spp.), and cocklebur (*Xanthium strumarium* var. *canadense*), but native species such as mule map, willows, or cattails may also be present.

- **Non-native grassland**. Non-native grasslands generally occur on fine-textured loam or clay soils which are moist during the winter rainy season and very dry during the summer and fall. Most of the non-native grasslands in the study area appear to be abandoned agricultural land which is now dominated by *Avena barbata* and *Bromus spp.* Most of the non-native grassland is bordered by chaparral or sage scrub. It is likely that non-native grassland areas were, at one time, chaparral and scrub and then were cleared for agricultural use in the 20th Century and subsequently abandoned. Native grasslands are considered sensitive by the USFWS and CDFG and are currently very restricted within California, particularly in San Diego and Riverside Counties due to encroachment from development and displacement by exotic species.[92]

- **Native grasslands**. The native grassland occurring within the study area is in the northern portion of Camp Pendleton. Native grasslands are dominated by perennial bunch-grasses. Valley needlegrass grassland, as described by Holland, is characterized by a relatively low (>10 percent) to dense herbaceous cover of the perennial, tussock-forming species, such as purple needlegrass (*Nasella pulchra*). Native and introducted annuals occur between the needlegrass, often actually exceeding the bunchgrass in cover. This association generally occurs on fine-textured clay soils that are moist or wet in winter but very dry in summer. Shrubs are infrequent, probably due to the unstable clay soils. The degree of habitat quality in native grasslands varies greatly, depending on the history of grazing, cultivation, or other disturbance factors. Annual grasses, a majority of which originated in the Mediterranean region, have replaced nearly all of the native grasslands in California. In addition to purple needlegrass, indicator species include, among others, blue-eyed grass (*Sisyrinchium bellum*), Mariposa lily, and clarkis (*Clarkis* spp.). Wildlife species typically associated with native grassland include the grasshopper sparrow (*Ammodramus savannarum*), lark sparrow (*Chondestes grammacus*), and

[91]/ Ibid., pp. 15-16 and 25.
[92]/ Ibid., pp. 16 and 25.

savannah sparrow (*Ammodramus sandwichensis*). Native grasslands with purple needlegrass and foothill needlegrass are considered sensitive by the USFWS and CDFG.

- **Coast live oak woodland**. Coast live oak woodland is an open to dense tree community with coast live oak (*Quercus agrifolia*) the dominant overstory species and Englemenn oak (*Quercus engelmannii*) as an occasional associate. This community can occur on mesic north-facing slopes and in canyon bottoms. This community is well represented in the cismontane, interior valleys, and foothills of the Peninsular Ranges. The scrub understory of this community is poorly developed but may include Mexican elderberry (*Sambucus mexicana*), gooseberry (*Ribes* sp.), poison oak (*Toxicondendrom diversilobum*), and toyon (*Heteromeles arbutifolia*).[93]

- **Englemann oak woodland**. Englemann oak woodland is an oak community that is restricted to the interior of the Peninsular Ranges in the low-lying hills and mesas of western Riverside and San Diego Counties. Open Engelmann oak woodland is dominated by Engelmann oak and occurs on gentler, more arid slopes. Dense Engelmann oak woodland occurs on steeper, more mesic sites in association with coast live oak. The understory of Engelmann oak woodlands can consist of shrub species typical of coastal sage scrub, such as California sagebrush, white sage, and buckwheat. Such an understory generally occurs when this community exists on shallow soils. On deeper soils, the understory is comprised of native and non-native herbaceous species, such as oats (*Avena* sp.), barley (*Hordeum* sp.), and filaree (*Erodium* sp.). Engelmann oak woodland has potential to provide foraging and nesting habitat for several bird species, including Cooper's hawk, acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nuttallii*), and plain titmouse (Parus inornatus), Hutton's vireo (*Vireo huttoni*), western wood pewee (*Contopus sordidulus*), and scrub jay (*Aphelocoma coerulescens*). This habitat also provides protective cover for species such as the Monterrey salamander (*Ensatina eschscholtzii eschscholtzii*) and raccoon (*Procyon lotor*). Englemann oak woodland is a vegetation community considered to have a high sensitivity rating. The Englemann oak is considered by the CNPS at risk within its range and rare outside of California.[94]

- **Disturbed, exotic, developed, and unvegetated areas**. This category includes all areas which have been disturbed and are not returning to native habitat, including vineyards and orchards, land uses for agriculture, eucalyptus woodlands, ruderal, and urban areas.

Sensitive plants that occur or that are likely to occur along the Talega-Escondido transmission line San Diego County viguiera (*Viguiera lacintata*) (CNPS List 4), Fish's milkwort (*Polygala cornuta* ssp. *fishiae*) (CNPS List 4), sticky dudleya (*Dudleya viscida*) (CNPS List 1B), and prostate spineflower (*Chorizanthe procumbens*) (CNPS List 4).

As illustrated in Figure 4.6.1-15 (Talega-Escondido Transmission Line - Special Status Wildlife Species and Critical Habitat), sensitive wildlife species known or suspected to occur within the Talega-Escondido transmission line include the scrub-associated orange-throated whiptail (*Cnemidophorus hyperythus beldingi*), San Diego horned lizard (*Phrynosoma coronatum*

[93]/ Ibid., pp. 17-20.
[94]/ Ibid., pp. 19-20; Op. Cit., Valley-Rainbow Interconnect Proponent's Environmental Assessment, pp. 4-124-126.

blainvillii), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), coastal cactus wren (*Campylorhynchus brunneicapillus sandiegoense*), coastal California gnatcatcher, and arroyo toad, and Pacific pocket mouse (*Perognathus longimembris pacificus*).[95] Two sensitive raptors, golden eagle (*Aquila chrysaetos*) and turkey vulture (*Cathartes aura*), have been observed foraging throughout the region. Although no documented occurrences of Stephens' kangaroo rat are known from the alignment, suitable habitat is coincident with open scrub and grassland habitats.[96] Along the Talega-Escondido transmission alignment, critical habitat occurs for the federally-listed least Bell's vireo, southwestern willow flycatcher, and coastal California gnatcatcher.

Additional baseline information concerning biological resources within the City of Lake Elsinore, County of Riverside, and County of San Diego is presented below.

- **City of Lake Elsinore**. Incorporated by reference herein is the "Fisheries Management Plan for Lake Elsinore."[97] The fisheries management plan provides detailed information concerning the aquatic environment and resources in Lake Elsinore and presents strategies for improving and enhancing sport fishing and nutrient reduction, including carp removal and control, fish stocking, enhancing lake spawning and rearing habitats, and monitoring.

- **County of Riverside**. The Western Riverside MSHCP was approved by the County Board of Supervisors on June 17, 2003 and by the USFWS and CDFG on June 22, 2004. The Western Riversid County MSHCP area is 1.2 million acres and the proposed conservation area, including public lands, is approximately 500,000 acres.

  As determined by the Riverside County Board of Supervisors, based on an assessment of the Riverside County General Plan's program EIR, with regard to biological resources, the following unmitigatable adverse impacts were identified: (1) Implementation would result in the direct mortality of individuals of listed, proposed, or candidate species or loss of habitat occupied by such species; (2) Alteration or loss of habitat of listed proposed, or candidate species that inhibits or compromises recovery efforts that could otherwise lead or contribute to the delisting of the species; (3) Implementation would cause direct loss of sensitive habitat; (4) Implementation would cause habitat fragmentation resulting in isolation of sensitive habitat patches, creating a "checkerboard" pattern of small habitat patches of limited biological value; (5) The Riverside County General Plan would cause fragmentation of habitat that constricts, inhibits, or eliminates wildlife movement; and (6) Implementation would result in alteration of habitat or natural processes that would result in the direct or indirect mortality of listed, proposed, or candidate species or that would result in loss, fragmentation, or isolation of sensitive habitat(s).[98]

[95]/ Holland, D.C., and Goodman Jr., R.H., A Guide to the Amphibians and Reptiles of MCB Camp Pendleton, Resource Management Division, MCB Camp Pendleton, 1998.
[96]/ Op. Cit., Biological Resources Technical Report for the Valley Rainbow Interconnect, pp. 41-42.
[97]/ Op. Cit., Final Fisheries Management Plan for Lake Elsinore, Riverside County, California, 2005.
[98]/ Op. Cit, CEQA Findings of Fact and Statement of Overriding Considerations of the Board of Supervisors of Riverside County for the 2003 Riverside County General Plan, October 7, 2003, Findings of Fact for Riverside General Plan Impacts and Mitigation Measures, Environmental Impacts 4.6.1, 4.6.2, 4.6.3, 4.6.4, 4.6.5, and 4.6.7.

- **County of San Diego**. San Diego County's "San Diego North County Multi-Species Conservation Plan Subarea Plan" (San Diego North County MSCP) encompasses about 313,777 acres roughly encompassing the areas north of the San Dieguito River, Elfin Forest and Harmony Grove, north of Camp Pendleton, DeLuz, Fallbrook, Rainbow, Pauma Valley, Lilac, Valley Center, Rancho Guejito, and the majority of Ramona. That plan has not yet been adopted and does not currently pose additional regulatory policies or procedures with regard to the Project.

  Habitat linkages are defined as habitat areas that provide connectivity between habitat patches as well as year-round foraging, reproduction, and dispersal habitat for resident species. A wildlife corridor is defined as a landscape feature, usually relatively narrow and containing species-specific characteristics to be functional for a given target species, that allows animal movement between two patches of habitat or between habitats and geographically discrete resources. A "chokepoint" is defined as a portion of a wildlife corridor that is constricted, generally due to encroachment of adjacent development or other land uses.

  In November 2000, a San Diego wildlife conference involving, among other parties, the California Department of Parks and Recreation, the USGS, The Nature Conservancy, and the California Wilderness Coalition, resulted in the publication of "Missing Linkages: Restoring Connectivity to the California Landscape,"[99] which identified 232 "critical habitat linkages" throughout California, and spurred the subsequent establishment of the South Coast Wildlands Project (SCWP). As illustrated in Figure 4.6.1-16 (South Coast Ecoregion – South Coast Missing Linkages), the existence of a number of "missing linkages" to wildlife connectivity have been suggested. The following linkages were identified in the general Project area: (1) "Linkage No. 12 (Santa Margarita - Pechanga)," identified as a "landscape linkage/choke point" linkage; (2) "Linkage No. 54 (De Luz – Sandia Creek)," identified as a "riparian with agriculture" linkage; (3) "Linkage No. 55 (Tenaja)," identified as a "landscape linkage"; and (4) "Linkage No. 56 (Pechanga Corridor," identified as a "landscape linkage."[100]

  The SCWP launched the collaborative "South Coast Missing Linkage Project," described by its participants as an ecoregional planning effort undertaken in support of the Statewide vision of the Missing Linkages conference. As indicated in the 2004 "A Linkage Design for the Santa Ana – Palomar Mountains Connection," the SCWP indicates that the "Santa Ana – Palomar Mountains Linkage is a landscape-level linkage needed to sustain a network of interconnected wildlands in the South Coast Ecoregion. The linkage joins the Santa Ana Mountains and its coastal lowlands to the Palomar Mountains and inland ranges of San Diego County. . .Santa Ana – Palomar Mountain Linkage was one of the 15 linkages whose protection is crucial to maintaining ecological and evolutionary processes among large blocks of protected habitat within the South Coast Ecoregion as well as adjoining ecoregions. Identification of these 15 priority linkages launched the South Coast Missing Linkages Project."[101]

[99]/ Penrod, K., Hunter, R, and Merrifield, M., Missing Linkages: Restoring Connectivity to the California Landscape, Conference Proceedings, 2001.
[100]/ Ibid., Table 2-2.
[101]/ Luke, Claudia, et al., A Linkage Design for the Santa Ana – Palomar Mountains Connection, May 2004, pp. 2 and 7.

Based on an analysis of 21 focal species deemed sensitive to habitat loss and fragmentation and considered representative of a broad range of habitat and movement requirements, the SCWP identified potential routes between existing protected areas and formulated a "least-cost corridor" (described as the lowest relative cost for a species to move between protected core habitat or population areas) for eight selected species. The species-specific corridors identified for the target species were combined to create a "least cost union" (described as the best zone available for focal species movement). The size and configuration of that union was then analyzed relative to the habitat needs of the 21 focal species in order to establish a "linkage design" (described as the target area for linkage conservation efforts). The 398 square kilometer (98,298 acre) "least cost unit," as identified in Figure 4.6.1-17 (Santa Ana – Palomar Mountains Linkage), represent SCWP's assessment of the "best movement habitat through the linkage and encompasses both upland and riparian habitat connections."[102] The recommended "linkage design" would provide live-in and move-through habitat for all 21 focal species.

4.6.2 Biological Resources Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's biological resources regulatory setting.

- Federal Power Act. In 1986, Congress amended the Federal Power Act (FPA) to require FERC to give "equal consideration" to energy conservation, protection of fish and wildlife, protection of recreational opportunities, and preservation of general environmental quality, along with the power generation potential of a river, in its licensing and relicensing process. Under Section 18 of the FPA, the Secretaries of the Interior and Commerce may require licensees to construct and operate a passageway (called a fishway) that allows fish to swim around barriers created by the facility.

- Executive Order 11990. This order requires Federal agencies to "avoid to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct and indirect support of new construction in wetlands wherever there is a practicable alternative."

- Federal Endangered Species Act. Section 7(a)(2) of the Federal Endangered Species Act of 1973 (16 U.S.C. 1531-1543) (FESA) requires Federal agencies to consult with the USFWS to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a threatened or endangered species or result in the destruction or adverse modification of critical habitat. Section 7 (16 U.S.C. 1536) of the FESA requires that Federal agencies "in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined to be critical, unless such agency has been granted an exemption" (16 U.S.C. 1536[a][2]).

[102]/ Ibid., p. 29.

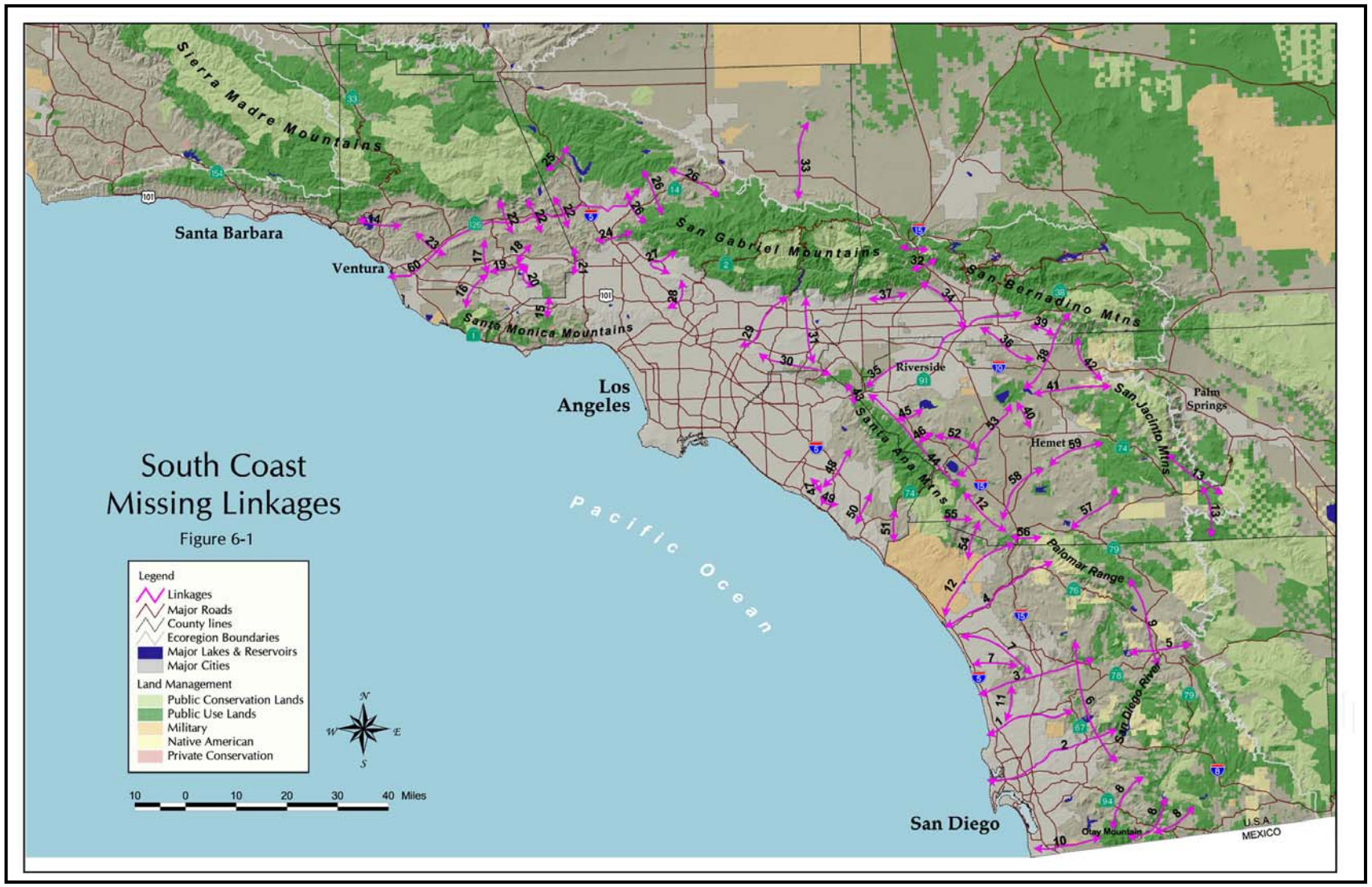

Figure 4.6.1-16. South Coast Ecoregion South Coast Missing Linkages
Source: San Diego State University

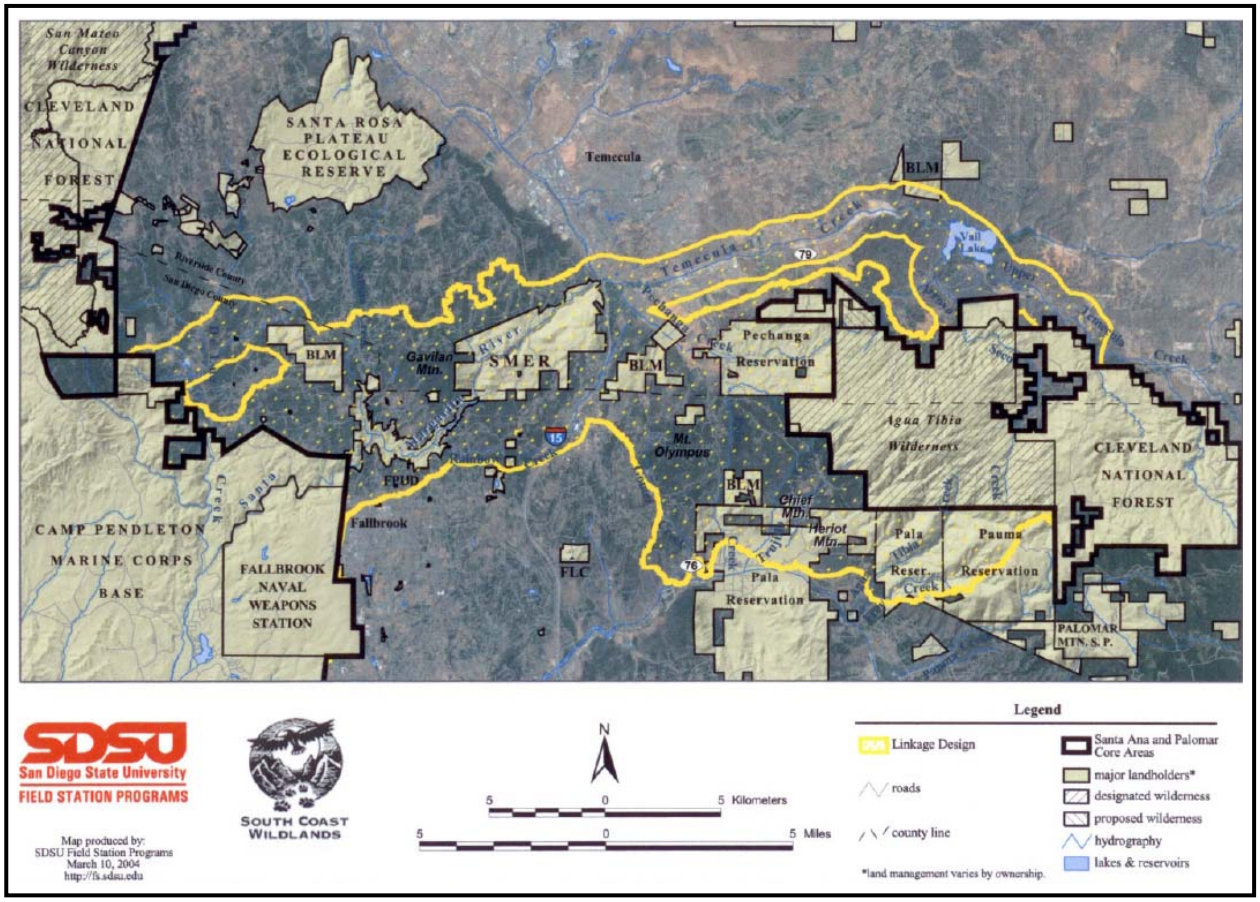

Figure 4.6.1-17. Santa Ana – Palomar Mountains Linkage
Source: South Coast Wildlands Project

When an agency requests formal consultation under Section 7(a)(2), a formal report (biological opinion) is prepared giving the United States Fish and Wildlife Service's (USFWS or Service) or the National Marine Fisheries Service's (NMFS) opinion about whether the agency action is "likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat" (16 U.S.C., 1536[b][3] and 50 CFR 402.14[h]).[103] Section 7 may be used for projects with a Federal nexus (e.g., projects requiring a Federal permit or receiving Federal funds). Section 10 may be used for private projects without a Federal nexus.

If there are no Federal actions (Federal nexus), a property owner whose actions may destroy or adversely modify a critical habitat area or affect a federally-listed species is required to prepare a habitat conservation plan (HCP) and obtain an "incidental take"[104] permit to ensure that the action would neither jeopardize the continued existence of the species covered under the HCP nor result in the destruction or adverse modification of the critical habitat within the planning area of the HCP such that it would appreciably reduce the likelihood of survival and recovery of the species. Section 7 and Section 10 incidental take permitting processes provide that a "take" incidental to an otherwise lawful activity may be permitted in certain circumstances and under certain conditions.

On March 1, 2006, FERC requested that the USFWS initiate formal Section 7 consultation with regards to the Project. In correspondence dated May 11, 2006 and June 9, 2006, the USFWS requested additional information from FERC. In their June 9, 2006 letter, the USFWS noted that "we do not concur that San Diego thornmint, Munz's onion, San Diego ambrosia, San Jacinto Valley crownscale, Nevin's barberry, slender-horned spineflower, San Diego button-celery, California Orcutt grass, thread-leaved brodiaca, spreading navarretia, California red-legged frog, southwestern willow flycatcher, and least Bell's vireo will not be or are not likely to be adversely affected." In response, as indicated in correspondence from FERC to the USFWS dated February 6, 2007, FERC stated that "[i]n your June 9, 2006 letter, you concurred with our finding in the draft EIS that construction of the LEAPS project would not affect Mexican flannelbush or designated critical habitat for the California red-legged frog and would not adversely affect the bald eagle. However, you did not concur with our findings that the project would not be likely to adversely affect the San Diego thornmint, Munz's onion, San Diego ambrosia, San Jacinto Valley crownscale, Nevin's barberry, slender-horned spineflow, San Diego button-celery, California Orcutt grass, thread-leaved brodiaea, spreading navarretia, California red-legged frog, arroyo toad, southwestern willow flycatcher, and least Bell's vireo. After further review, we have changed our findings to be consistent with your letter, with the exception of the red-legged frog. . .We continue to conclude that licensing the LEAPS project would not affect the California red-legged

[103]/ "Jeopardize the continued existence of" means engaging in "an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02). If jeopardy is likely, the report is called a "jeopardy biological opinion" (50 CFR 402.14[h][3]). If the action is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat, the report is called a "no jeopardy biological opinion." A jeopardy opinion must consider and, if lawful, include reasonable and prudent alternatives (RPA) (16 U.S.C. 1536[b][3][A]).

[104]/ "Incidental take" is defined as "taking that results from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the federal agency or applicant" (50 CFR 402.2). "Take" means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 U.S.C. 1532[19]).

frog because the frog is not known to occur in the affected watersheds. We do not believe that formal consultation on this species is required."

As indicated in the FEIS, FERC concluded "that licensing the LEAPS project is likely to adversely affect the following listed plants: San Diego thornmint, San Diego button-celery, spreading navarretia, Nevin's barberry, Munz's onion, slender-horned spine flower, San Diego ambrosia, California Orcutt grass, thread-leaved brodiaea, and San Jacinto Valley crownscale. We find that licensing the LEAPS project is also likely to adversely affect the following listed animals: the Quino checkerspot butterfly, arroyo toad, southwestern willow flycatcher, least Bell's vireo, coastal California gnatcatcher, and Stephens' kangaroo rat. We conclude that licensing the project may adversely affect critical habitat for the Quino checkerspot butterfly, coastal California gnatcatcher (proposed), and Stephens' kangaroo rat. Therefore, we are now requesting formal consultation for the above-mentioned species and critical habitats."

FERC's findings are summarized in Table 4.6.2-1 (Final Environmental Impact Statement - Summary of Species and Critical Habitat Findings). As indicated in the FEIS: "The final EIS serves as the biological assessment for these federally listed species, for the purposes of consultation with the [US]FWS under Section 7 of the Endangered Species Act."[105] In correspondence from FERC to the USFWS, dated May 22, 2007, FERC withdrew its "request for formal consultation on those species where we found likely effects on potential habitat, but for which survey information is not complete. If post-licensing surveys indicate that adverse effects could occur, we would initiate consultation with the Service. No land-disturbing activities that have the potential to affect listed species would be initiated until endangered species reviews have been completed."

On March 19, 2008, the USFWS issued a "formal Section 7 consultation for the Lake Elsinore Advanced Pumped Storage Project (P-11858), Riverside County, California," authorizing an incidental take of arroyo toad.

- Federal Migratory Bird Treaty Act. The Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711) (MBTA) establishes a Federal prohibition, unless otherwise permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention. . .for the protection of migratory birds. . .or any part, nest, or egg of any such bird" (16 U.S.C. 703). The MBTA decreed that all migratory birds and their parts (e.g., eggs, nests, and feathers) are fully protected.[106]

[105]/ Op. Cit., Final Environmental Impact Statement for Hydropower License – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, FERC/EIS-0191F, p. 3-124.

106/ Under a "Memorandum of Understanding between the United States Department of Energy and the United States Fish and Wildlife Service Regarding Implementation of Executive Order 13186 'Responsibility of Federal Agencies to Protect Migratory Birds,'" the United States Department of Energy (DOE) stated its intent to: (1) avoid or minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions, in compliance with, and supporting the purposes of the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, the Endangered Species Act, NEPA, and other applicable statutes; (2) protect, restore, enhance, and manage habitats of migratory birds to the fullest extent practicable; and (3) develop and use principles, standards, and practices that lessen the amount of take, including (a)

Table 4.6.2-1. Summary of Species and Critical Habitat Findings

Species	Species Status	Species Finding	Critical Habitat Finding
Southern California steelhead (*Oncorhynchus mykiss*)	E	Likely to adversely affect	Not likely to adversely affect
San Diego thornmint (*Acanthomintha ilicifolia*)	T	Likely to adversely affect	No effect
San Diego button-celery (*Eryngium aristulatum* var. *parishii*)	E	Likely to adversely affect	No effect
Mexican flannelbush (*Fremontodendron mexicanum*)	E	No effect	No effect
Spreading navarretia (*Navarretia fossalis*)	T	Likely to adversely affect	No effect
Nevin's barberry (*Berberis nevinii*)	E	Likely to adversely affect	No effect
Munz's onion (*Allium munzii*)	E	Likely to adversely affect	No effect
Slender-horned spine flower (*Dodecahema leptoceras*)	E	Likely to adversely affect	No effect
San Diego ambrosia (*Ambrosia pumila*)	E	Likely to adversely affect	No effect
California Orcutt grass (*Orcuttia californica*)	E	Likely to adversely affect	No effect
Thread-leaved brodiaea (*Brodiaea filifolia*)	T	Likely to adversely affect	No effect
San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*)	E	Likely to adversely affect	No effect
Quino checkerspot butterfly (*Euphydryas edith quino*)	E	Likely to adversely affect	Likely to adversely affect
Arroyo toad (*Bufo californicus*)	E	Likely to adversely affect	No effect
California red-legged frog (*Rana aurora draytonii*)	T	No effect	No effect
Southwestern willow flycatcher (*Empidonax traillii extimus*)	E	Likely to adversely affect	No effect
Least Bell's vireo (*Vireo bellii pusillus*)	E	Likely to adversely affect	No effect
Bald eagle (*Haliaeetus leucocephalus*)	T	Not likely to adversely affect	No effect
Coastal California gnatcatcher (*Polioptila californica*)	T	Likely to adversely affect	Likely to adversely affect (proposed)
Stephens' kangaroo rat (*Dipodomys stephensi*)	E	Likely to adversely affect	Likely to adversely affect

Source: Federal Energy Regulatory Commission

- Federal Bald and Golden Eagle Protection Act. When enacted in 1940, the Bald and Golden Eagle Protection Act (16 U.S.C. 688) prohibited the take, transport, and sale of bald eagles, their eggs, or any part of an eagle, except where expressly allowed by the Secretary of the Interior. The act was amended in 1962 to extend those prohibitions to the golden eagle.

- Federal Clean Water Act. The Federal Clean Water Act (33 U.S.C. 1251-1376) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 404 of the CWA establishes a program regulating the discharge of dredged and fill material into WoUS (36 CFR Part 328), including wetlands. The basic premise of the program is that no discharge of dredged or fill material shall be permitted if a practicable alternative exists that is less damaging to

utilizing avian-friendly transmission lines and power poles, (b) scheduling construction activities around migratory bird nesting seasons, and (c) following the recommendations and suggested practices in wind turbine and powerline guidelines published by the USFWS and the Avian Power Line Interaction Committee to minimize impacts from existing facilities and in the construction of new utility and energy systems and associated infrastructure (Source: United States Department of Energy and United States Fish and Wildlife Service, Memorandum of Understanding between the United States Department of Energy and the United States Fish and Wildlife Service Regarding Implementation of Executive Order 13186 "Responsibility of Federal Agencies to Protect Migratory Birds," August 3, 2006).

the aquatic environment or if the nation's waters would be significantly degraded. Applicants must first show that they have taken steps to, where practicable, avoid or minimize potential impacts to wetlands and, where unavoidable impacts remain, provide compensation through activities to create, restore, or enhance wetlands.

Under Section 404 of the CWA, regulated activities are controlled by a permit review process administered by the United States Army Corps of Engineers (USACE). For those projects that have the potential to produce significant impacts, an individual permit may be required. For most projects, the USACE administers a nationwide permit (NWP) program for particular categories of activities as a means to expedite the permitting process. Generally, an individual permit is required if over 0.5 acres of WoUS will be impacted of if over 300 linear feet of jurisdictional non-ephemeral waters are impacted. In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, such as rivers, lakes, and intermittent streams, extends to the OHWM.

The estimated jurisdictional acreage for WoUS and WoS found within the Project area is presented in Table 4.6.2-2 (Estimated Jurisdictional Acreage). Although a number of blue-line streams exist along the 230-kV and 500-kV transmission alignments, those acreages have not been identified since avoidance is possible. Since the estimated acreage of jurisdictional waters cumulatively exceeds the USACE's threshold for a NWP, the Project will likely necessitate an individual permit. An application for an individual permit was submitted to the USACE on August 23, 2006 (File No. 200401819-DPS).

Table 4.6.2-2. Estimated Jurisdictional Acreage

Project Facility	Waters of the United States (acres)	Waters of the State (acres)
Construction Laydown Area	0.03	0.08
Lake Swithyard	0.3	1.1
Case Springs Substation	0.1	0.5
Decker Canyon Upper Reservoir	0.8	4.4
Santa Rosa Substation/LEAPS Powerhouse	0.1	0.4

Source: The Nevada Hydro Company

Unless otherwise exempt under a NWP, applicants for Federal permits that involve dredge or fill activities in surface waters, including wetlands, are required to obtain certification from the State verifying that the proposed activity will comply with applicable State water quality standards. Applicants must concurrently apply for a Section 401 water quality certification stating that the proposed project will not violate the State's water pollution control laws. In California, Section 401 certification actions are the responsibility of the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs).

Separate applications for Section 401 water quality certifications have been filed with the SWRCB. Any CEQA documentation prepared for TE/VS Interconnect and LEAPS by the CPUC shall serve as the environmental basis for the issuance of separate 401 water quality certifications by the SWRCB and/or its applicable RWQCBs.

- Federal Fish and Wildlife Coordination Act. The Fish and Wildlife Coordination Act (16 U.S.C. 661-666) applies to any Federal project where the waters of any stream or other water body are impounded, diverted, deepened, or otherwise modified. Project proponent's are required to consult with the USFWS and the appropriate State wildlife agency. The act is implemented though NEPA and the Section 404 permit processes.

- Executive Order 13112. This order requires Federal agencies to "use relevant programs and authorities to. . .detect and respond rapidly to control populations of such species in a cost-effective and environmentally sound manner; monitor invasive species populations accurately and reliably; provide for the restoration of native species and habitat conditions in ecosystems that have been invaded." Executive Order 13112 created the National Invasive Species Council (NISC) to coordinate invasive species actions.

  In compliance with Executive Order 13112, in January 2001, the NISC adopted and is required to bi-annually update a "National Invasive Species Management Plan"[107] as a national blueprint for Federal actions on invasive species. In 2001, the USDA Forest Service published "The Guide to Noxious Weed Prevention Practices,"[108] outlining strategies to prevent the spread of noxious weeks. In 2005, the USDA Forest Service published "Vehicle Cleaning Technology for Controlling the Spread of Noxious Weeds and Invasive Species,"[109] summarizing concepts for removing seeds from vehicles and equipment to control the spread of noxious weeds. All activities conducted on NFS lands shall be in accordance with the USDA Forest Service's management plans for the control of invasive species.

- California Fish and Game Code. The California Endangered Species Act (Section 2050 et seq., California Fish and Game Code [CF&GC]) (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened and endangered species and their habitats. The CESA mandates that State agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives area available that would avoid jeopardy. There are no State agency consultation procedures established under the CESA. For projects that affect both a State-listed and a federally-listed species, compliance with the FESA will satisfy the CESA if the CDFG determines that the Federal incidental take authorization is consistent with CESA under Section 2080.1 of the CF&GC. For projects that will result in a take of only State-listed species, a take permit must be obtained from the CDFG under Section 2081(b) of the CF&GC.

  Under Sections 1601-1603 of the CF&GC, agencies are required to notify the CDFG prior to any project that will divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the CEQA process. When an existing fish or wildlife resource will be substantially and adversely affected, the CDFG is required to propose reasonable project

[107]/ National Invasive Species Council, Meeting the Invasive Species Challenge, January 18, 2001.
[108]/ United States Department of Agriculture, Forest Service, The Guide to Noxious Weed Prevention Practices, 2001.
[109]/ United States Department of Agriculture, Forest Service, Vehicle Cleaning Technology for Controlling the Spread of Noxious Weeds and Invasive Species, October 2005.

changes to protect the resource. These modifications are formalized in a streambed alteration agreement (SAA).

The Natural Community Conservation Planning Act of 2002 (Sections 2800-2835, CF&GC) authorized the CDFG to enter into an agreement with any person or public entity for the purpose of preparing a natural community conservation plan (NCCP), in cooperation with a local agency that has land-use permit authority over the activities proposed to be addressed in the plan, to provide comprehensive management and conservation of multiple wildlife species. A NCCP approved pursuant to the act shall include an implementation agreement. At the time of plan approval, the CDFG may authorize by permit the taking of any covered species whose conservation and management is provided for in the approved NCCP.[110]

In southern California, the initial focus of the NCCP planning effort has been on the coastal sage scrub habitat of southern California. Portions of the Project are located within the following NCCP areas: Western Riverside County MSHCP (approved in 2005), San Diego Northern MSCP (preliminary draft submitted to CDFG in 2006), and "San Diego Gas & Electric Company Subregional Plan" (approved in 1995). That portion of the Project located in Camp Pendleton is subject to the current "Camp Pendleton Resources Management Plan." A revised "Camp Pendleton Resources Management Plan" is presently under review.[111]

Section 3503 states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulations made pursuant thereto." Section 3513 states that it is "unlawful to take or possess any migratory nongame bird as designed in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act."

The Native Plant Protection Act (Sections 1900-1913, CF&GC) (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the CDFG at least ten days in advance of any change in land use. This allows the CDFG to salvage listed plant species that would otherwise be destroyed. The CDFG has also been directed by the State Legislature under State Senate Concurrent Resolution No. 17 (California Resolution Chapter 100) to conserve oak woodlands where CDFG has direct permit or licensing authority.

- California Public Resources Code. As stipulated in Section 21083.4(b) of the PRC: "As part of the determination made pursuant to Section 21080.1, a county shall determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. If a county determines that there may

[110]/ A NCCP is a plan for the conservation of natural communities that takes an ecosystem approach and encourages cooperation between private and governmental interests. The plan identifies and provides for the regional or areawide protection and perpetuation of plants, animals, and their habitats, whole allowing compatible land use and economic activity. A characteristic of an NCCP is to promote wildlife diversity through conservation of habitat on an ecosystem level. Wildlife is defined to include all wild animals, plants, and related ecological communities.

[111]/ United States Marine Corps Base Camp Pendleton, Integrated Natural Resources Management Plan – Marine Corps Base and Marine Corps Air Station, Camp Pendleton, Draft Review, August 2006.

be a significant effect to oak woodlands, the county shall require one or more of the following oak woodlands mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands: (1) Conserve oak woodlands, through the use of conservation easements. (2)(A) Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees. (B) The requirement to maintain trees pursuant to this paragraph terminates seven years after the trees are planted. (C) Mitigation pursuant to this paragraph shall not fulfill more than one-half of the mitigation requirements for the project. (D) The requirements imposed pursuant to this paragraph also may be used to restore former oak woodlands."

Section 3.36 (Hydroelectric Project Management) in USDA Forest Service Handbook (FSH) 2509.22 (Soil and Water Conservation Practices Handbook) specified that it is the policy of the USDA Forest Service to "[l]ocate new hydroelectric ancillary facilities outside of RCAs [riparian conservation areas], wherever possible. Apply forest plans standard S47 and Appendix E."

4.7 Cultural Resources

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations, and existing Etiwanda Generating Station, and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, cultural resources are not further addressed herein.

4.7.1 Cultural Resources Environmental Setting[112]

Archaeological evidence from continuous near-shore sediment deposits indicate that Lake Elsinore contained water nearly continuously over the past 8,400 years, permitting humans to thrive permanently within the area since at least the mid-Holocene.[113] Much of the following discussion has been taken from the Draft HRMP. The Prehistoric Section directly below has been culled from various reports. In consultation with the State Historic Preservation Office (SHPO), an "area of potential effect" (APE) has been used, in part, to define the Project's APE for this CEQA compliance document.

- **Prehistoric Setting**. This section provides a brief overview of the prehistory and history of the Project area. A more detailed description can be found in ethnographic studies, mission records, and major published sources including Kroeber (1925), Wallace (1955), Warren (1968), Heizer (1978), Moratto (1984), and Chartkoff and Chartkoff (1984). Fagan (2003), Moratto and Chartkoff and Chartkoff provide recent overviews of California archaeology in general and review the history of the desert regions in southern California. The most accepted regional chronology for the coastal and central interior

[112]/ Information presented herein is derived, in part, from the: (1) "Lake Elsinore Advanced Pumped Storage Project (LEAPS) & Talega-Escondido/Valley-Serrano 500kV Interconnect Project – Historic Properties Management Plan, FERC No. 11858-002-California" (Chambers Group, Inc. February 2005); (2) "Cultural Resources Investigation for the Elsinore Advanced Pumped Storage Project, Lake Elsinore, Riverside County" (Archaeological Associates, 2003); and (3) Phase I Cultural Resource Study – Elsinore Valley Municipal Water District Pumped Storage Hydroelectric Project, Lake Elsinore, Riverside County" (Archaeological Associates, 1997). Since those documents contain sensitive cultural resource information, those studies are incorporated by reference herein but are subject to specific disclosure limitations designed to protect sensitive cultural resources.

[113]/ Kirby, Matthew, E., et al., Late Holocene Lake Level Dynamics Inferred from Magnetic Susceptibility and Stable Oxygen Isotope Data: Lake Elsinore, Southern California, Journal of Palocliminology, Vol. 31, 2004, p. 278.

southern California is derived from Wallace's four-part Horizon format, which was later updated and revised by Warren.

Presently, regional archaeologists generally follow Wallace's southern California format but the loosely established times for each period subunit are often challenged. The documented stages are as follows: Desert Culture (12000 to 10000 B.C.), Western Hunting Culture or Lake Mohave Period (~9000 to 5000 B.C.), Pinto Period (5000 to 2,500 B.C.), and Protohistoric (2500 B.C. to 1769 A.D.).

◊ **Desert Culture Period**. Comparatively, little is known of Paleo-Indian peoples in the California archaeological record, although highly documented archaeological village sites in the Southwest have revealed associated bones of now extinct large mammals, as well as Clovis and Folsom tool traditions. This period is noted for an increase in drier weather, consequently most of the known California Late Paleo-Indian/Early Archaic sites are located near extinct desert valley lakes, rock shelters and on the Channel Islands off the coast. These consist of occupation sites, butchering stations, and burials. This period ends with a marked extinction of large game native to North America and a distinct change in prehistoric tool kits used to prepare plant foods. Small projectile points, choppers, flat scrapers, drills, and digging sticks are also common.

◊ **Western Hunting Culture or Lake Mohave Period**. It is thought that as the hunting of large mammals became less available as a food resource due to drier weather conditions, the West and Southwest showed an increased reliance in using small game, such as squirrels and rabbits, and wild plants to sustain the small tribal bands. This period is also marked by the absence of food grinding stone implements. However, the period ends when stone grinding implements become increasingly more prevalent in the archaeological record.

◊ **Pinto Period**. The Pinto Period highlights a combination of both Desert Culture and Western Hunting Cultures, where an increase in grinding tools appears in the archaeological record. Such tools suggest an increased level of reliance on wild plants and small animals. The Pinto spear-point tool tradition is the hallmark of this period. This tradition is characterized by small coarsely chipped points, which tend to be triangular and sometimes are found with parallel sides. These points may have tipped the atlatl. A slight variation in tool type appears towards the end of this period, which is represented by Gypsum points and Elko points. The Gypsum point is typified by its contracting stem, whereas Elko points are corner notched.

◊ **Protohistoric**. In the southwestern Great Basin, this period is characterized as having cooler and wetter conditions than that previously experienced, an environment similar to that of today. Sites appear in previously unoccupied areas of California. The numbers of sites in some regions, especially near ephemeral lakes, seem to have risen dramatically. These changes reflect a phenomenon found throughout the western United States where an increase in population and changes in tool kits and living arrangements resulted in more specialized uses of

materials and landscapes. Diagnostic artifacts associated with this period consist of Elko and Gypsum projectile points.

◊ **Saratoga Springs Period**. The Saratoga Springs Period is environmentally similar to earlier periods. In the southwest Great Basin, this period is characterized by the introduction of the bow and arrow, exploitation of the pine nut and an increase in logistical complexity relative to landscape use. With these changes came a diversification of resource use and a more sedentary settlement pattern in the Owens Valley. The nature and number of sites attributed to this time period changed such that the "winter villages" became larger, numbers of such villages were reduced, and base camps in the upland areas became larger, more diversified and more numerous. The abandonment of village sites at the end of the Late Prehistoric Period is attributed to a change in climate and is an event mirrored in other parts of the American Southwest, California, and Mexico. Trade of Coso obsidian in southern California apparently ended during this period.

▪ **Ethnographic Setting**. The Native American inhabitants occupying most of Los Angeles, Orange, and Riverside Counties at the time of the Spanish arrival had not always held these territories. Their earliest well-documented predecessors, who are known only archaeologically, are collectively referred to as the "Millingstone" peoples. Millingstone groups are though to have been scattered over much of southern California from as early as 6000 B.C.. The Millingstone people were principally seed and root gatherers who rarely seemed to have developed large settlements and who probably never occupied a single area on a year-round basis.

About 1500 B.C., a stone mortars and pestles were utilized. This era has been called the "Intermediate" and is poorly understood. What appears certain is that the Intermediate peoples were replaced by Shoshoneans who moved in from the Great Basin. The exact time the Shoshonean "incursion" took place is uncertain but most authorities place it somewhere between 500 and 1000 A.D.. The indigenous Intermediate populations were either absorbed or decimated as the Shoshonean-speakers settled the entire coast, from about the latitude of the southern edge of the Santa Monica Mountains south to the area of the San Luis Rey River. Their territory extended inland across Riverside County. By the time of the Spanish arrival, the Shoshoneans had become subdivided into three groups: (1) the Gabrielino who occupied Los Angeles and northern Orange Counties; (2) the Juaneño who resided around what became San Juan Capistrano; and (3) Luiseño who lived in western Riverside and northern San Diego Counties.[114]

Excluding the Talega-Escondido transmission alignment, the Project area is located along the border of the territories known to have been occupied by the Juaneño and Luiseño Indians. It is likely that both groups passed through or exploited resources within the Project area at different times; therefore, both groups are discussed below. The northern and eastern portions of the Project's area were part of the territory occupied by the

[114]/ It is noted, "that the tribal concept in most parts of the State is one imposed upon the Indians as a result of ethnological investigation rather than something recognized by themselves. It has a dialectic rather than a governmental or ceremonial base, but it is the best that can be done unless we adopt the impracticable alternative of treating each village group as a tribe. It is to be understood that, from the ordinary point of view as to what constitutes a tribe, this expedient is largely artificial" (Source: Swanton, John R., The Indian Tribes of North America, Smithsonian Institution Bureau of American Ethnology Bulletin 145, 1952, pp. 478-479).

Juaneño or Acjachemem.[115] The western portions of the Project area are located in the territory, known ethnographically, to have been occupied by the Luiseño.

◊ Juaneño. The northern and western portions of the Project area were part of the territory occupied by the Juaneño or Acjachemem Native American group when the Spanish arrived in 1769 A.D. Ethnographic descriptions of the Juaneño are often given in terms of their neighbors to the south (Luiseño) but also point to a separate cultural identity. An important account of the Juaneño culture was written by Geronimo Boscana, friar at Mission San Juan Capistrano from 1812 to 1826.

Juaneño settlement and subsistence systems may extend back in time to the beginning of the Late Prehistoric Period, about A.D. 650. The Juaneño were semi-sedentary hunters and gathers. One of the most important food resources for inland groups was acorns gathered from oak groves in canyons, drainages, and foothills. Acorns were ground into flour using mortars and pestles. Seeds from sage and grasses, goosefoot, and California buckwheat were collected and ground into meal using manos (grinding stones) and metates (grinding bowls or slabs, made of stone). Protein was supplied through the meat of deer, rabbits, and other animals, hunted with bow and arrow or trapped using snares, nets, and deadfalls. Coastal dwellers collected shellfish and used carved shell hooks for fishing in bay/estuary, nearshore, and kelp bed zones. Dried fish and shellfish were probably traded for inland products, such as acorns and deer meat.

The Juaneño lived in villages of up to 250 people located near permanent water and a variety of food sources. Each village was typically located at the center of an established territory from which resources for the group were gathered. Small groups left the village for short periods of time to hunt, fish, and gather plant foods. While away from the village, they established temporary camps and created locations where food and other materials were processed. Archaeologically, such locations are evidenced by manufacturing or maintenance of stone tools used in hunting or butchering. Overnight stays in field camps are evidenced by fire-affected rock used in hearths.

The San Juan basin was densely populated and villages were closely spaced because of the year-round availability of fresh water in San Juan Creek and its tributaries. The village of *Acjacheme* was located just east of the present location of Mission San Juan Capistrano. The village of *Putuidem* was located at the confluence of Oso and Trabuco Creeks. *Tobna* was located on the east bank of

[115]/ The name "Juaneño" denotes those people who were administered by the Spanish at Mission San Juan Capistano and does not necessarily identify a specific ethnic or tribal group. The names that the Native Americans in southern California used to identify themselves have, for the most part, been lost. Many contemporary Juaneño, who identify themselves as descendents of the indigenous society living in the local San Juan and San Mateo Creek drainage areas have adopted the indigenous term Acjachemen. Linguistically, the Acjachemen tongue is a dialect of the larger Luiseño language, derived from the Takic family, part of the Uto-Aztecan linguistic stock. Acjachemen villages and territory extended from Las Pulgas Creek in northern San Diego County into the San Joaquin Hills in Orange County and from the Pacific Ocean into the San Ana Mountains. The core of their population occupied the drainages San Juan Creek and San Mateo Creek. The highest concentration of villages was along the lower San Juan where the Mission San Juan Capistrano was located (Source: City of Laguna Beach [Christopher A. Joseph & Associates], Draft Environmental Impact Report – Village Entrance Project, SCH No. 2006021039, February 2006, pp. IV-D-9 and 10).

San Juan Creek, near its mouth. The village of *Sajavit* was located at the original mission site

◊ Luiseňo. The western portion of the Project area are located in the territory know ethnographically to have been occupied by the Luiseňo, a Takic-speaking people. The term Luiseňo was given by the Spanish to the native group who were living in the area under influence of Mission San Luis Rey. The Luiseňo lived in sedentary and autonomous village groups, each with specific subsistence territories encompassing hunting, collecting, and fishing areas. Villages were typically located in valley bottoms, along streams, or along coastal strands near mountain ranges where water was available and village defense was possible. Inland populations has access to fishing and gathering sites on the coast, which they used during the winter months.

Luiseňo subsistence was centered around the gathering of acorns, seeds, greens, bulbs, roots, berries, and other vegetal foods. This was supplemented with hunting mammals, such as deer, antelope, rabbit, woodrat, ground squirrels, and mice, as well as quail, doves, ducks, and other birds. Bands along the coast also exploited marine resources, such as sea mammals, fish, crustaceans, and mollusks. Inland trout and other fish were taken from mountain streams.

Hunting was done both individually and by organized groups. Tool technology for food acquisition, storage, and preparation reflects the size and quantity of items procured. Small game was hunted with the use of curved throwing sticks, nets, slings, or traps. Bows and arrows were used for near-shore ocean fishing. Coiled and twined baskets were made for food gathering, preparation, storage, and serving. Other items used for food processing included large shallow trays for winnowing chaff from grain, ceramic and basketry storage containers, manos and metates for grinding seeds, and ceramic jars for cooking.

Villages had hereditary chiefs who controlled religious, economic, and territorial activities. An advisory council of ritual specialists and shamans was consulted for environmental and other knowledge. Large villages located along the coast or in inland valleys may have had more complex social and political structures than settlements controlling smaller territories. Most Luiseňo villages contained a ceremonial structure enclosed by circular fencing located near the center of the village. Houses were semi-subterranean and thatched with locally available brush, bark, or reeds. Earth-covered semi-subterranean sweathouses were also common and were used for purification and curing rituals.

The first Europeans to explore the west coast were with Francisco de Ulloa, who accompanied Hernan Cortés in his first expedition to California. The account of this voyage marks the first recorded application of the name "California." The Luiseňo first came into contact with Europeans in 1769, when the expedition led by Gaspar de Portolá arrived in their territory. That same year, the San Diego Mission was established just to the south, followed by the San Juan Capistrano Mission in 1776 and the San Luis Rey Mission in 1798. Poor living conditions at

the missions and introduced European diseases led to a rapid decline of the Luiseňo population. Following the Mission Period (1769-1834), Luiseňo Indians scattered throughout southern California. Some became serfs on the Mexican ranchos, other moved to newly founded pueblos established for them, some sought refuge among inland groups, and a few managed to acquire land grants. Later, many moved to or were forced onto reservations. Although many of their cultural traditions have been suppressed during the Mission Period, the Luiseňo were successful at retaining their language and certain rituals and ceremonies. Starting in the 1970's, there was a revival of interest in the Luiseňo language and classes were organized. Since then, traditional games, songs, and dances have been performed, traditional foods have been gathered and prepared, and traditional medicines and curing procedures have been practiced.

- **Creation Stories of Lake Elsinore and its Associated Hot Springs**. Site CA-RIV-2798 is not only significant archaeologically, but ethnohistorically as well. The Lake Elsinore area has an extensive history of human habitation. Referencing "Change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore": "In addition to a stable water supply and a variety of terrestrial floral and faunal species, the local area contains abundant high-quality lithic resources; hot springs that were significant to the Late Prehistoric peoples and probably earlier groups; and fish, waterfowl, and other aquatic resources that became increasingly scarce with climatic warming during the Holocene. As a result of this unique setting, people have found the site attractive since their initial entry into the region nearly 10,000 years ago, presumably moving throughout the area as resources became available in the different environmental zones."[116]

  Both Lake Elsinore and the hot springs to the north are ethnogeographically named in both the Juaneňo and Luiseňo languages. The Juaneňo referred to Lake Elsinore as *Paayaxtic* and the Luiseňo referred to it as *Paahashnan*. In Juaneňo tradition, man was created out of the mud of the lake. The area around the hot springs was known to the Luiseňo as *Atengvo*. "Luiseño territory extended from Agua Hediona Creek northwest to Aliso Creek along the coast, then east to Santiago Peak and south through the Lake Elsinore area to just south of Mount Palomar. Whereas other groups were familiar with Lake Elsinore, according to the relevant literature, the lake is clearly in Luiseño territory. . .Lake Elsinore itself plays a considerable role in the creation myth and religion of the Luiseño and Juaneño. Harrington states that 'according to the San Juan Indians, man was created out of the mud of the lake.' In addition, the Elsinore Hot Springs near the outlet channel is significant to both the Luiseño and the Juaneño. It was at this location, known as *Itengvu Wumowmu*, that Wiyot, a religious leader who let the people out of the north died. When Wiyot grew ill and started to die, the people took him to a number of hot springs in the area in an effort to cure him. Elsinore was the last of these hot springs, and it was here that he died."[117]

  The lake was recorded in 1982 and is viewed as a "traditional cultural property."[118,119]

[116]/ Grenda, Donn R., Continuity and Change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore, Statistical Research, Inc., Technical Series 59, January 1997, p. 3.
[117]/ Ibid., p. 22.
[118]/ Defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the

- **Location of Ethnohistoric Villages**. Kroeber's location of Paiahche near Lake Elsinore led one to believe that it corresponded to site CA-RIV-2798. Excavations at CA-RIV-2798, however, did not produce a major Late Prehistoric/Ethnohistoric component. It is not known whether this is because the village was in another location or whether settlement during this period consisted of small, seasonal, resource procurement camps, instead of a large habitation site.

  Hall and Slater hypothesize that Tenaja Village (CA-RIV-217) may have been the ethnohistoric village of *Palasakeuana*, as referenced by Kroeber, and that the area (Tenaja Valley) may have been a refuge area for "neophytes" escaping from Spanish control at San Luis Rey Mission. Keller shows the location of Tenaja Valley on Kroeber's (1925) map of *Palasakeuna*. They are not in the same location. While no scale is provided on the Kroeber map, the two villages are separated by nearly an inch. Nonetheless, it is clear that CA-RIV-271 is a major village heavily occupied during the Late Prehistoric. Moreover, its relatively remote location would argue for relatively late occupation into the Historic Period. Obsidian Butte hydration readings as low as 1.1 microns from the site also suggest possible occupation into the ethnohistoric period. It is possible that Kroeber did not visit the remote Tenaja Valley or that the location of the village on Kroeber's map is inaccurate.

- **Historic Setting**. The territory of the present State of California was "discovered" in 1542 by a Portuguese navigator in the Spanish service, J. R. Cabrillo. In 1578, Sir Francis Drake landed at Drake's Bay, opened communication with the natives, and took possession of the country in the name of England, calling it New Albion. It was explored by the Spaniard S. Viscayno in 1602 but no attempt was made at colonization until the Franciscan Fathers established a mission at San Diego in 1769. Within the next 50 years they founded 21 missions.[120]

  In 1769, the Spanish mission expeditions led by Junipero Serra and Gaspar de Portolá established settlements from San Diego to Monterey. Portolá camped at an Indian village north of San Onofre on July 22, 1769 on his way north to Monterey Bay. That same year, the San Diego Mission was established just to the south, followed by the San Juan Capistrano Mission in 1776 and the San Luis Rey Mission in 1798. It was in 1797 that Fray Juan Santiago set out from the Mission San Juan Capistrano in search of a new mission site. He and his party were among the first groups of white men to travel over what was then regarded as the Sierra de Santiago and descent into Lake Elsinore. Here, they likely camped along the shoreline before continuing their journey to Temecula. Ultimately, Fray Juan Santiago went on to identify the site of what was to become Mission San Luis Rey.

  The town of Lake Elsinore first appears in the land records as part of the Rancho La Laguna, the original land grant of three square leagues, given to Julian Manriquez by the Mexican Governor of California in 1844. The grant was roughly oval in shape and

community (Source: Parker, Patricia L. and King, Thomas F., National Register Bulletin – Guidelines for Evaluating and Documenting Traditional Cultural Properties, National Park Service, 1990, revised 1998, p. 1.

[119]/ Chambers Group, Inc., Lake Elsinore Advanced Pumped Storage Project (LEAPS) & Talega-Escondido/Valley-Serrano 500kV Interconnect Project – Historic Properties Management Plan, FERC No. 11858-002-California, February 2005, p. 2-11.

[120]/ Swanton, John R., The Indian Tribes of North America, Smithsonian Institution Bureau of American Ethnology Bulletin 145, 1952, p. 478.

included all of the lakebed and shoreline. In 1858, Abel Sterms sold the original La Laguna land grant to Augustine Machado. Augustin Machado and his wife (Ramona) and their twelve children lived on the land in an adobe located on the west and southwest side of the modern shoreline of Lake Elsinore. The Machado adobe was a regular stopping place for the Butterfield Overland Mail stage whose route ran from the Temecula Station up the valley, passing through Murrieta, Wildomar, along the westerly side of Lake Elsinore, and then toward Perris. Machado died in 1865 and, after receiving the patent for the land in 1872, his wife and children sold their shares to Charles Sumner in 1873. Sumner lost all the property in 1877 by defaulting on this mortgage loan and the land was purchased by a partnership of businessmen: Franklin Heald, Donald Graham, and William Collier. By 1885, the partnership had been able to pay off the mortgage with proceeds from the sale of plots of land.

Referencing the State's history resources inventory: "Lake Elsinore was known as Etengvo Wumoma to the Indians, Laguna Grande to the Mexicans, and became Lake Elsinore in 1884 when 'Margaret Collier Graham, wife of one of the town's founders and sister of another' named it Elsinore, 'not from the small city so named in Denmark, but rather from the immortality given it by Shakespeare and Campbell; and because it had a pleasant sound.'"[121] As illustrated in Figure 4.7.1-1 (1901 USGS Topographic Quadrangle), the name "Elsinore Mountains" appears on the 1901 USGS topographic quadrangle. Two of the pioneering families of the Elsinore Mountains were those of James H. Stewart and Bud Morrell. Around the turn of the century, James Stewart established a homestead in the Elsinore Mountains. The Morrell family homesteaded a ranch (Section 26, T6S). The Stewart and Morrell families were united when Stewart's daughter (Charlotte) married Bud Morrell's son (Arthur). Decker Canyon was named for another local pioneer.

The City of Lake Elsinore was incorporated in 1888. At that time, the town had a population of approximately two thousand people, with two banks, two hotels, two bathhouses, a water supply system, a schoolhouse, three churches, and a rail connection. In the 1910's and 1920's, the lake became a recreational center, attracting tourists and vacationers from Los Angeles. A lakeshore pavilion was erected in 1912 with the Lake Elsinore Boating and Bathing Resort opening in 1915. In 1924, excavation started for the Southern California Athletic and Country Club on the south shore of the lake, near the intersection of Grand Avenue and the future Ortega Highway. The entire lake and many acres of adjoining land were bought for the development of a golf course and clubhouse. By 1930, the Country Club had fallen into bankruptcy and was turned into a military school in 1933 (Lake Elsinore Naval Academy).

In August 1959, a wildfire ignited in the Elsinore Mountains (Decker Fire) and seven firefighters lost their lives. A monument commemorating these men was erected at the El Cariso Forest Service Fire Station. In their memory, seven small canyons on the north flack of the mountains were named in their behalf (Brooks, Johnson, Harlan, Stinson, Edwards, Guthrie, and Slater).

[121]/ California Department of Parks and Recreation, Historic Resources Inventory, 33-11009, July 26, 1982.

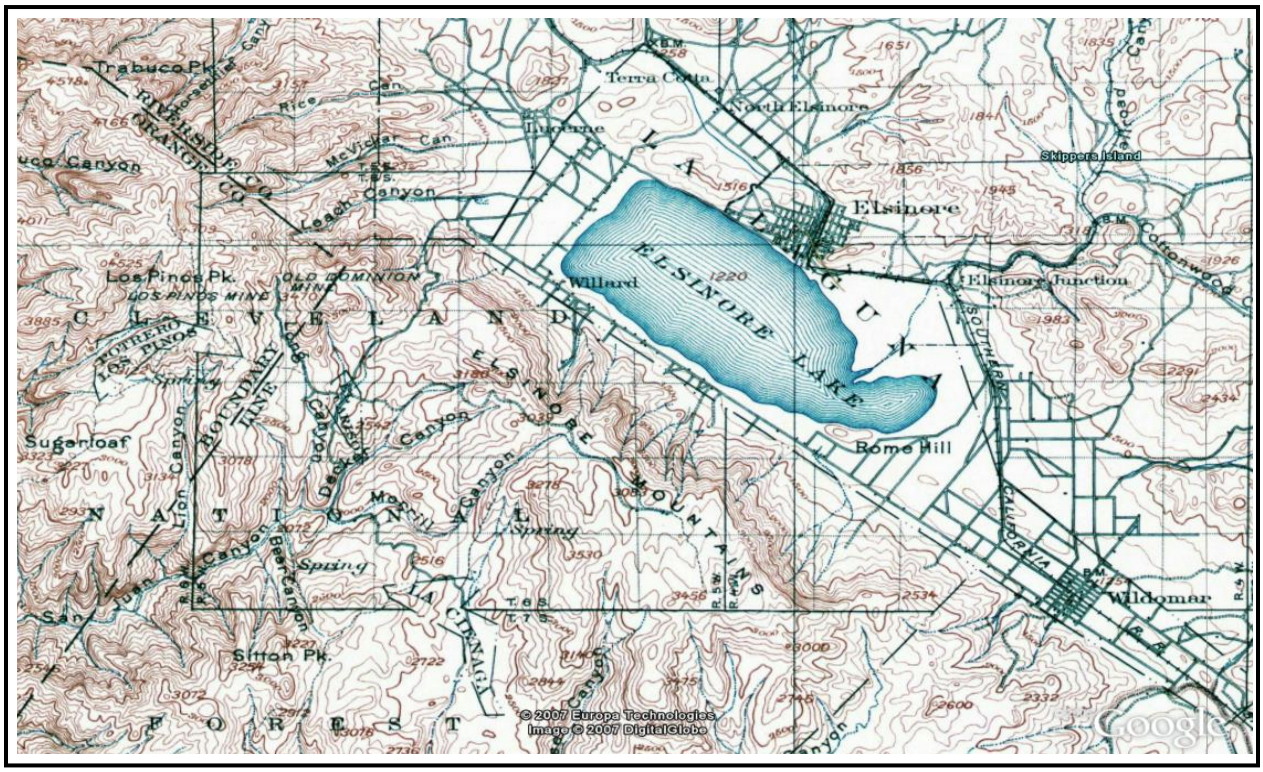

Figure 4.7.1-1. 1901 USGS Topographic Quadrangle
Source: United States Geological Survey

- **Cleveland National Forest – Trabuco Ranger District**. In the late 1860's, an influx of gold miners from northern California descended upon the Santa Ana Mountains. In addition to gold, zinc, lead, and silver were mined. Trees were cut for mine timbers and firewood and great expanses of brush were burned to make way for mineral exploration. Early reports from the 1870's and 1880's document uncontrolled fires that burned for weeks at a time. These events caused serious damage to irrigation works and threatened the water supplies of the surrounding rural areas and coastal towns. In response, the California Forestry Commission, established by Governor Stone in 1886, voiced the necessity for special protection of the watershed to prevent fires and subsequent erosion.

  The Forest Reserve Act, signed by President Benjamin Harrison in 1891, was intended to curb illegal timber cutting, mining, and other wasteful practices. In 1908, President Theodore Roosevelt combined the Trabuco Canyon and San Jacinto Forests to form the CNF. These were some of the earliest forest reserves established. The CNF originally encompassed over 1.9 million acres.

  Between the years of 1908 to 1925, several transfers of forest lands to private and public entities significantly reduced the size of the forest. The National Forest was created from the Trabuco Canyon and San Jacinto National Forests. The focus of attention in the forests was the control of fire and overgrazing on the homestead ranches developed under the Forest Homestead Act of 1906. Today, the Trabuco Ranger District consists of a total of approximately 420,000 acres.

In 1909, Forest Supervisor Harold Marshall included in a status report that the growing mountain resort industry and the ability of easier forest access through the automobile would likely make recreation an expanded use. In 1933, President Franklin D. Roosevelt signed the Emergency Conservation Work Act (ECW). The ECW included the creation of the CCC for unemployed men to expand and develop forest infrastructure. USDA Forest Service personnel supervised CCC crews in the construction of new administrative buildings, guard (fire watch) stations and lookouts, roads, trails and firebreaks, and camping and recreation facilities.

By late June 1933, eight CCC camps had been established in the CNF. Over the nine years of the program, CNF had seventeen recorded CCC camps, including Camp La Cienaga located in Elsinore. The Camp La Cienaga crews built the Tenaja Guard Station (fire warning station) and served as fire fighting crews throughout the southland of California. With the opening of the Ortega Highway in 1934, crews created public campgrounds along the highway, including camps in Trabuco Canyon and Tenaja Canyon. The CNF had seventeen recorded CCC camps over the nine years of the program. The permanent camps usually contained 180 to 200 enrollees. The La Cienaga Camp was an all-black crew located in Elsinore. Their primary projects included campground development, construction of truck trails and firebreaks, as well as reforestation. The crews established a temporary work camp in Tenaja Canyon while building the new Tenaja Guard Station in 1934-1936. By 1936, a residence, garage, 30-foot tall water tower, redwood water tank, and pump house were in place.

The opening of the new Ortega Highway in 1934, spurred the creation of public campgrounds in Trabuco and Tenaja Canyons. The campground was created next to the new guard station at Tenaja. The Tenaja Station remained open until 1987 when it was closed during a reallocation of manpower, and the Wildomar Fire Station took over responsibility for the area. The Tenaja Station was vacated and the site size was reduced from 106 to 13 acres. The campground has since been closed to public access. In 1984, 39,540 acres of land in the San Mateo Creek upper watershed were designated as the San Mateo Canyon Wilderness.

- **Field Surveys**. Field surveys of the then-existing APE were conducted by Archaeological Associates in August 1996 and January 1997. Based on an expanded APE (as submitted to SOPA), additional archaeological surveys of lands and architectural field surveys of accessible buildings were conducted by the Chambers Group in January 2005. The Draft HRMP reveals the current names of each cultural resource and location information associated with sites in the APE. The locations of these cultural resource sites has not been presented herein for the protection of those resources, except to public agencies, Native American groups and organizations, to professional archaeologists.

  The Draft HRMP note that there are 31 previously-recorded resources located on or directly adjacent to the APE. Twenty-one of these resources have not been evaluated for the National Register eligibility. Five of these resources are potentially eligible for the National Register or appear eligible locally, while four resources are likely not eligible. One of the resources was determined to be "not a site." SDG&E's existing Talega

Substation is located in proximity to a placard depicting California Historic Landmark No. 562 (La Cristianita Historic Site).[1]

Camp Pendleton straddles the boundaries between the ethnohistoric Luiseño and Juaneño cultural groups.[2] There are over 500 recorded archaeological sites on Camp Pendleton. Only about one-quarter of those sites have been evaluated for NRHP eligibility. Of those, about 50 sites have been determined eligible for the National Register (prehistoric sites), one National Register District (prehistoric village), two National Register Mexican and American Period Ranchos.[3] Forty-three previously recorded cultural resource sites were identified within the Talega-Escondido transmission line record search area (1,000-foot wide corridor centered on the existing transmission line.[4]

- **Regional Paleontology**. As mapped by Engel,[5] the area is underlain by undifferentiated granitic rock units of the Southern California Batholith, older fanglomerate, and undifferentiated fanglomerate and terrace deposits. The late Jurassic to early Cretaceous granitic rock units of the Southern California Batholith underlie much of the area and are composed of diorite, quartz diorite, granodiorite, and gabbro. Because of their igneous origin, the granitic rock units are unfossiliferous and are of no paleontologic importance.

  The older fanglomerate consists of sandstone, siltstone, and tuff. The age of this rock unit is undetermined, although Engel (1959) considered the rock unit to be possibly Miocene in age. Although no fossil remains are recorded from this rock unit, its similarity to rock units that have yielded the fossilized remains of land mammals in other nearby areas suggests a potential for similar fossil remains occurring in areas underlain by this rock unit. The older fanglomerate is considered to be of unknown paleontological importance. The undifferentiated fanglomerate and terrace deposits consist of pebble and cobble conglomerate and arkosic sand. Pleistocene land mammal remains from three previously recorded fossil sites in the general vicinity could be from this rock unit. Some or all of these specimens could be from the alluvium, which, as mapped by Engel (1959), immediately overlies the undifferentiated fanglomerate and terrace deposits and underlies most of the valley floor.

  Los Angeles County Museum (LACM) Fossil Site 6059 yielded camel remains near the airstrip at the northeastern corner of Lake Elsinore. Mammoth remains were recovered from California Institute of Technology (CIT) Fossil Site 571 south of Lake Elsinore, and at CIT Fossil Site 572 in the City of Lake Elsinore. These fossil occurrences suggest a

[1]/ Fathers Crespi and Gomez, while on the Portola expedition to find Monterey Bay, in 1769, performed the first baptisms in Alta California. This occurred a few days after leaving the site of the Presidio of San Diego in mid-July. As the expedition journeyed north, on July 22 it entered Cristianitos Canyon on the present Orange County line. Scouts told them that there were two small children dying in an Indian village nearby. The priests found one baby dying at its mother's breast and another small girl dying of burns. Father Gomez baptized the baby, naming her "Maria Magdalena." Father Crespi baptized the child, naming her "Margarita." The site of the baptisms, a spring in the Los Cristianitos Canyon (or "Valle de los Bautismos") is situated in Camp Pendleton (Source: San Diego Historic Society).

[2]/ Reddy, Seetha and Brewster, Alice, Applying GIS to Archaeological Site Prediction on Camp Pendleton, Southern California, Pacific Coast Archaeological Society Quarterly, Vol. 35. No. 1, p. 8.

[3]/ Berryman, Stan, Cultural Dimensions of Time: New Perspectives on the Archaeology of Camp Pendleton, Southern California, Pacific Coast Archaeological Society Quarterly, Vol. 35. No. 1, p. 3.

[4]/ Southern California Edison [URS], Proponent's Environmental Assessment for Replacement of the SONGS 2 & 3 Steam Generators, February 2004, p. 4-64.

[5]/ Engel, René, Geology of the Lake Elsinore Quadrangle, California, Geology and Mineral Resources of the Lake Elsinore Quadrangle, California, California Division of Mines and Geology, Bulletin 146, 1959.

potential for similar fossil remains occurring in areas underlain by the undifferentiated fanglomerate and terrace deposits.

- **Historic Properties Management Plan**. As part of FERC's hydropower licensing process, the Applicant prepared a historic properties management plan applicable to the proposed Project.[6] In accordance therewith, the Applicant prepared the "Lake Elsinore Advanced Pumped Storage Project (LEAPS) & Talega-Escondido/Valley-Serrano 500 kV Interconnect Project – Historic Properties Management Plan, FERC No. 11858-002-California – CONTAINS PRIVILEGED INFORMATION DO NOT RELEASE"[7] (HPMP), as received by FERC on March 3, 2005. FERC has listed the HPMP as a "no-public" document.

  The HPMP provides evidence of: (1) records search and field reconnaissance surveys; (2) letters verifying contacts with the Native American Heritage Commission (NAHC) to conduct a Sacred Lands search for the Project area to identify Traditional Cultural Properties; (3) letter to individuals that needed to be contacted to provide additional cultural resource information for the Project area; and (4) historic evaluations of structures within the Project area. As indicated in correspondence from the NAHC, dated February 7, 2005, as included in the HPMP: "A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project vicinity."

  The Applicant has executed a "Programmatic Agreement among the Federal Energy Regulatory Commission and the California Historic Preservation Officers for Managing Historic Properties that May be Affected by Issuing a License to the Elsinore Valley Municipal Water District and The Nevada Hydro Company for the Operation of the Lake Elsinore Advanced Pumped Storage Project in Riverside County, California (FERC No. 11858-002)" (PA), as issued by FERC on February 12, 2007. Listed signatories to the PA included: (1) Milford Wayn Donaldson, California State Historic Preservation Officer; (2) Tina Terrell, Forest Supervisor, USDA Forest Service; (3) Mike Pool, State Director, United States Bureau of Land Management, California State Office; (4) Col. John C. Coleman, Commanding Officer, United States Marine Corps, Marine Corps Base Camp Pendleton; (5) Clay J. Gregory, Regional Director, United States Bureau of Indian Affairs, Pacific Regional Office; (6) Robert Smith, Chairperson, Pala Band of Mission Indians; (7) John Currier, Chairperson, Rincon Band of Mission Indians; (8) Richard Estrada, Chairperson, San Luis Rey Band of Mission Indians; (9) Christobal C. Devers, Chairperson, Pauma/Yuima Band of Mission Indians; (10) Sonia Johnston, Tribal Chair, Juaneno Band of Mission Indians, Acjachemen Nation; (11) Richard Milanovich, Chairperson, Agua Caliente Band of Cahuilla Indians; (12) Tracy Lee Nelson,

[6]/ Section 106 of the National Historic Preservation Act requires FERC to take into account the effect of its undertakings on historic properties and to afford the Advisory Council on Historic Preservation (Council) reasonable opportuny to comment. FERC typically completes Section 106 by entering into a programmatic agreement or memorandum of agreement with the license applicant, the Council, and the State Historic Preservation Officer (SHPO). Additionally, FERC typically requires, as a license condition, that the licensee develop and implement a historic properties management plan. The historic properties management plan is a plan for considering and managing effects on historic properties of activities associated with constructing, operating, and maintaining hydropower prjects.

[7]/ DeBarros, Phillip, Dobson-Brown, Deborah, McKeehan, Judy, Underbrink, Susan, Sander, Jay, and Daly, Pamela (Chambers Group, Inc.), "Lake Elsinore Advanced Pumped Storage Project (LEAPS) & Talega-Escondido/Valley-Serrano 500kV Interconnect Project – Historic Properties Management Plan, FERC No. 11858-002-California, CONTAINS PRIVILEGED INFORMATION DO NOT RELEASE, Volues I-II, February 2005.

Chairperson, La Jolla Band of Mission Indians; (13) David Belardes, Juaneno Band of Mission Indians; (14) Anthony Rivera, Chairman, Juaneno Band of Mission Indians, Acjachemen Nation; and (15) Anthony Morales, Tribal Chairperson, Gabrieleno/Tongva Tribal Council of San Gabriel.[8,9] The California State Historic Preservation Officer has neither executed that programmatic agreement nor expressed written concern with the nature or contents of that agreement.

Because the HPMP discloses the location of sensitive cultural resources located within and in proximity to Project facilities, FERC has directed the Applicant not to publicly disclose the contents of that document to other than public agencies and accredited archaeologists. In accordance therewith, copies of the HPMP and the PA have been provided to the CPUC's environmental consultants (Aspen Environmental Group) in accordance with FERC's stipulations.

Additional baseline information concerning cultural resources within the City of Lake Elsinore, County of Riverside, and County of San Diego is presented below.

- **City of Lake Elsinore**. The prehistoric history of the Lake Elsinore is presented in "Continuity and Change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore."[10] An overview of the history of Lake Elsinore is contained in "Lake Elsinore Valley – Its Story 1776-1977"[11] published by the Lake Elsinore Downtown Business Association in 1988. As indicated in the City's "Background Reports," Lake Elsinore has an extensive history from the prehistoric and modern times. The City's record search resulted in the identification of 132 prehistoric and historic archaeological sites within the Project area. Two of those sites (CA-RIV-1022 and CA-RIV-2798) have been determined eligible for listing in the NRHP.[12]

- **County of Riverside**. As determined by the Riverside County BOS, based on an assessment of the programmatic environmental impacts associated with the implementation of the Riverside County General Plan, with regards to cultural resources, the following unmitigable impacts were identified: (1) Development allowed by implementation could have the potential to disturb buried human remains, including those interred outside of formal cemeteries, and buried cultural resources; (2) Development allowed by implementation could cause the destruction of or loss of an historical resource, as defined in CEQA Guidelines, Section 15064.5; (3) Development allowed by implementation could cause the destruction of known archaeological resources, as

[8]/ In correspondence from the Advisory Council on Historic Preservation (ACHP) to FERC, dated March 15, 2007, the ACHP stated: "The filing of the PA, and execution of its terms, completes the requirements of Section 106 of the National Historic Preservation Act and the ACHP's regulations."

[9]/ As indicated in correspondence from FERC to the Advisory Council on Historic Preservation, dated October 23, 2007, FERC noted that as of the date of that letter, the California State Historic Preservation Officer had not executed the PA.

[10]/ Grenda, Donn R., Continuity and Change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore, Statistical Research, Inc., Technical Series 59, January 1997.

[11]/ Hudson, Tom, Lake Elsinore Valley – Its Story 1776-1977, Lake Elsinore Downtown Business Association and City of Lake Elsinore Centennial, Second Printing 1988.

[12]/ Op. Cit., City of Lake Elsinore General Plan Update, Cultural Historical, and Paleontological Resources Background Report, January 2006, p. 7-17.

defined in CEQA Guidelines, Section 15064.5; and (4) Development could potentially destroy directly or indirectly a unique paleontological resource or site.[13]

- **County of San Diego**. An overview of San Diego County's "cultural background" is found in the County's "County of San Diego Guidelines for Determining Significance – Cultural Resource: Archaeological and Historic Resources."[14] As indicated therein, archaeological sites, dated to circa 2,000 years ago, are found in the Camp Pendleton area. "Luiseňo occupation in northern San Diego County during the late Holocene has been viewed as an occupation that migrated from the desert to the coast, an incursion called 'the Shoshonean Wedge.'"[15] Additional information on the history of San Diego is presented in the City of San Diego's "Historic Resource Guidelines."[16]

  As indicated in SDG&E's PEA, the area of the Talega-Escondido 230 kV transmission line "lies within the traditional territory of the Luiseňo. The Luiseňo lived primarily by hunting and gathering and resided in semi-sedentary, politically autonomous villages or Rancherias. The Mission San Luis Rey was established in 1798, bringing an end to aboriginal lifeways. Little development occurred in the project area during the Spanish colonial and Mexican periods. . .the main impetus for development came with the completion of the San Diego Southern Railroad in 1882 and other rail-links to eastern markets. Most of the area remained undeveloped or agricultural until the 1970's."[17]

  A records search was conducted at the regional clearinghouses of the California Historical Resources Information System at San Diego State University, California State University at Fullerton, and the University of California at Riverside. The records search study area included a 1,000-foot wide corridor centered on the existing Talega-Escondido 230 kV transmission line. The entire Talega-Escondido transmission line, including access roads, was surveyed prior to construction in the late 1970's. In addition, subsequent block surveys have covered several areas, including Camp Pendleton. About 50 previous cultural resources investigations have been conducted and 43 previously recorded cultural resource sites have been identified in the records search area. These include bedrock milling stations, lithic scatters, a quarry, a rock art site, possible temporary camps, and a historic barn complex.[18]

4.7.2 Cultural Resources Regulatory Setting[19]

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's regulatory setting with respect to cultural resources.

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[13]/ Op. Cit., CEQA Findings of Fact and Statement of Overriding Considerations of the Board of Supervisors of Riverside County for the 2003 Riverside County General Plan, Findings of Fact for Riverside General Plan Impacts and Mitigation Measures, Environmental Impacts 4.7.1, 4.7.2, 4.7.3, and 4.7.4.

[14]/ County of San Diego, Guidelines for Determining Significance – Cultural Resource: Archaeological and Historic Resources, Department of Planning and Land Use, September 26, 2006, pp. 2-7.

[15]/ Ibid., pp. 4-5.

[16]/ City of San Diego, San Diego Municipal Code, Historic Resource Guidelines, amended August 2004, Appendix A, San Diego History, pp. 37-55.

[17]/ Op. Cit., Valley-Rainbow Interconnect Proponent's Environmental Assessment, p. 4-194.

[18]/ Ibid., p. 4-196.

[19]/ Cultural resource information is confidential under the Archaeological Resource Protection Act of 1979 (16 U.S.C. 470hh) and Protection of Archaeological Resources: Uniform Regulations (36 CFR 296.18).

- National Historic Preservation Act of 1966. As stipulated in the National Historic Preservation Act of 1966 (16 U.S.C. 470) (NHPA), "each Federal agency shall initiate measures to assure that where, as a result of Federal action or assistance carried out by such agency, a historic property is to be substantially altered or demolished, timely steps are taken to make or have made appropriate records, and that such records then be deposited, in accordance with section 101(a), in the Library of Congress or with such other appropriate agency as may be designated by the Secretary, for future use and reference" (Section 110[b]). Under Federal criteria, in order for a building or structure to be significant, it must be found eligible for listing in the National Register of Historic Places.[20] The NRHP comprises the nation's inventory of historic places and the national repository of documentation on the variety of historic property types, significance, abundance, condition, ownership, needs, and other information. Federal listing generally requires that a building or structure be at least fifty years of age and possess "the quality of significance in American history, architecture, archaeology, engineering and culture. . .present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, material, workmanship, feeling and association."[21]

  Section 106 of the NHPA requires FERC to take into account the effects of its undertakings on historic properties and to afford the Advisory Council on Historic Preservation (Council) a reasonable opportunity to comment. Section 106 is implemented through the Council's regulations, "Protection of Historic Properties" (36 CFR Part 800). For hydropower licensing actions, FERC typically completes Section 106 by entering into a programmatic agreement (PA) or memorandum of agreement (MOA) with the license applicant, the Council, and the State and/or tribal historic preservation officer (SHPO/THPO). This agreement is then incorporated by reference into the hydropower license when issued.

  On February 8, 2007, FERC executed a "Programmatic Agreement among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation and the California State Historic Preservation Officer for Managing Historic Properties that may be Affected by Issuing a License to the Elsinore Valley Municipal Water District and The Nevada Hydro Company for the Operation of the Lake Elsinore Advanced Pumped Storage Project in Riverside County, California (FERC No. 11858-02)" (Programmatic Agreement). As stipulated in the Programmatic Agreement, within one year of issuance of the hydropower license, the licensee will file for FERC's approval a final historic properties management plan (Final HPMP) specifying how historic properties will be managed within the area of potential effect (APE), as defined in 36 CFR 800.16(d), during the term of the license.[22] After the hydropower license is issued, but before the Final HPMP has been approved by FERC, the licensee shall consult with the appropriate parties specified in the PA.

[20]/ The federal criteria includes buildings and structures that: (1) are associated with events that have made a significant contribution to the broad patterns of our history; (2) are associated with the lives of persons significant in our past; (3) that embody the distinctive characteristics of a type, period, or method of construction that represents the work of a master or that possesses high artistic values or that represents a significant and distinguishable entity whose components may lack individual distinction; or (4) that have or are likely to yield information important in prehistory or history.

[21]/ 36 CFR Part 800.

[22]/ The "Draft Lake Elsinore Advanced Pumped Storage Project (LEAPS) & Talega-Escondido/Valley-Serrano 500kV Interconnect Project – Historic Properties Management Plan, FERC No. 11858-002-California" (Draft HRMP) was submitted to the Commission in February 2005.

Through an approved HPMP, FERC can require consideration and appropriate management of effects on historic properties throughout the term of the license.[23] As stipulated in the Programmatic Agreement, the final HPMP shall be developed by or under the supervision of a person who meets the professional qualifications standards for architectural history and archeology in the "Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines"[24] (Secretary's Standards).

- Archaeological Resources Protection Act of 1979. The Federal Archeological Resources Protection Act (16 U.S.C. 470aa-470mm) (ARPA) expands the protections provided by the Preservation of American Antiquities Act of 1906 in protection archaeological resources and sites located on public and Indian lands. The ARPA regulates finds on Federal and Indian lands and seeks to prevent looting and destruction of archeological resources. ARPA defines "archaeological resources" as items of archeological interest over 100 years old and found in an archaeological context on Federal or Indian lands and requires finders to obtain a Federal permit before excavating these objects.

  As specified: "Information concerning the nature and location of any archaeological resource for which the excavation or removal requires a permit or other permission under this act or under any other provision of Federal law may not be made available to the public under Subchapter II of Chapter 5 of Title 5 of the United States Code [5 U.S.C. 551 et seq.] or under any other provision of law unless the Federal land manager concerned determined that such disclosure would (1) further the purpose of this act or the act of June 27, 1660 [16 U.S.C. 469-469c], and (2) not create a risk of harm to such resources or to the site at which such resources are located" (16 U.S.C. 470hh).

- Preservation of American Antiquities Act of 1906. The Preservation of American Antiquities Act of 1906 (16 U.S.C. 431-433) provides for the protection of historic or prehistoric remains on Federal lands, establishes criminal sanctions for unauthorized destruction or appropriation of antiquities, authorizes the President to declare by proclamation national monuments, and authorizes the scientific investigation of antiquities on Federal lands, subject to permit and regulations.

  Federal agencies may withhold any information pertaining to the location of archaeological sites if the agency determines that disclosing such information would put the resource at risk. ARPA specifically excludes such information from a Freedom of Information Act of 1982 (5 U.S.C. 552) filing which includes all archaeological resources, not just those that are NRHP listed or eligible. In recognition of the sensitive nature of known prehistoric and historic resources within the general area, detailed information regarding those resources is not presented herein but has been disseminated to specific State and Federal agencies and tribal organizations.

- Native American Graves Protection and Repatriation Act. The Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001-3013) (NAGPRA) provides a process for museums and Federal agencies to return certain Native American cultural

[23]/ Federal Energy Regulatory Commission, Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects, May 20, 2002, p. 1.
[24]/ 48 FR 44716-44740, September 29, 1983.

items, such as human remains, funerary objects, sacred objects, or objects of cultural patrimony, to lineal descendants and culturally affiliated Indian tribes and Native Hawaiian organizations. NAGPRA includes provisions for unclaimed and culturally unidentifiable Native American cultural items, intentional and inadvertent discovery of Native American cultural items on Federal and tribal lands, and penalties for noncompliance and illegal trafficking.

- Protection of Archaeological Resources Uniform Regulations. The Protection of Archaeological Resources Uniform Regulations (36 CFR Part 296) implements provisions of the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa–mm) by establishing uniform definitions, standards, and procedures to be followed by all Federal land managers in providing protection for archaeological resources located on public lands (including NFS lands) and Indian lands of the United States. These regulations enable federal land managers to protect archaeological resources, taking into consideration provisions of the American Indian Religious Freedom Act (42 U.S.C. 1996), through permits authorizing excavation and/or removal of archaeological resources, through civil penalties for unauthorized excavation, through provisions for the preservation of archaeological resource collections and data, and through provisions for ensuring confidentiality of information about archaeological resources when disclosure would threaten the archaeological resources (36 CFR 296.1[a]).

- Reservoir Salvage Act of 1960. As stipulated under the Reservoir Salvage Act of 1960 (16 U.S.C. 469-469c-1), Federal policy provides for the "preservation of historical and archaeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as the result of (1) flooding, the building of access roads, the erection of workmen's communities, the relocation of railroads and highways, and other alterations of the terrain caused by the construction of a dam by any agency of the United States, or by any private person or corporation holding a license issued by any such agency or (2) any alteration of the terrain caused as a result of any Federal construction project or federally licensed activity or program" (16 U.S.C. 469).

- California Government Code. Sections 25373 and 37361 of the CGC authorizes county and city governments to enact zoning ordinances for the protection and regulation of buildings and structures of special historical value. Section 65860 of the CGC enlarges the scope of those zoning powers to allow those agencies to regulate the use of buildings, structures, and land between business, industry, residential, and open space.

  With regard to California Native American traditional tribal cultural places,[25] Senate Bill 18 (SB18), as approved by the Governor on September 29, 2004, stipulates that, subject to the limitations outlined therein, certain tribal consultation and notice requirements shall apply to local governments when adopting or amending general and specific plans. As specified in SB18 and as outlined in the Governor's Office of Planning and Research's "Supplement to General Plan Guidelines – Tribal Consultation Guidelines"[26] (Tribal Consultation Guidelines), prior to adoption or amendment of a general or specific plan, the local government must: (1) notify the appropriate California Native American

[25]/ As defined in Sections 4097.9 and 5097.995 of the PRC.
[26]/ Governor's Office of Planning and Research, Supplement to General Plan Guidelines – Tribal Consultation Guidelines, April 15, 2005.

tribe[27] of the opportunity to conduct consultation for the purpose of preserving or mitigating impacts to cultural places; (2) refer the proposed action to those tribes that are on the NAHC contact list that have traditional lands within the agency's jurisdiction; and (3) send notice of a public hearing, at least ten days prior to the hearing, to tribes that have filed a written request for such notice. Pursuant to Section 65352.3, only if a tribe is identified by the NAHC and the tribe requests consultation after being contacted by a local government, must the local government consult with the tribe on the plan proposal.

- California Public Resources Code. Pursuant to Section 5020.1(k) of the Public Resources Code (PRC), a "historic resource" must be listed on a "local register of historical resources." A "local register" is a "list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution." Resources that are listed in a local historic register or deemed significant in a historical resource survey as provided under Section 5024.1(g) of the PRC are to be presumed historically or culturally significant unless "the preponderance of evidence" demonstrates they are not. Section 5020.1 establishes the threshold of "substantial adverse change" as inclusive of demolition, destruction, relocation, or other alteration activities that would impair the significance of the historic resource. Section 5097.5 of the PRC makes it a misdemeanor for anyone to knowingly disturb any archaeological, paleontological, or historical features situated on public lands.

  The California State Office of Historic Preservation (OHP) is mandated under Section 5024.6(n) of the PRC to maintain the state Historic Resources Inventory for planning and to maintain comprehensive records of historic resources pursuant to Federal and State laws. Section 6254.10 of the CGC establishes that the records of the State Historic Resources Inventory relating to archaeological resources are exempt from disclosure requirements of the California Public Records Act (Sections 6250-6270, CGC).

- California Code of Regulations. As described in Section 21084.1 of CEQA and Section 15064.5(a)(4) in Title 14 of the California Code of Regulations (CCR), "[t]he fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources [CRHP], not included in a local register of historical resources, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 shall not preclude a lead agency from determining whether the resource may be a historical resource for purposes of this section."[28] Section 15064.5 establishes general rules for the analysis of historical (including archaeological) resources in order to determine whether a proposed project may have a substantial adverse effect on the

[27]/ SB18 defines the term "California Native American tribe" as "a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the Native American Heritage Commission." "Federal recognition" is a legal distinction that applies to a tribe's rights to a government-to-government relationship with the federal government and eligibility for federal programs (Source: Governor's Office of Planning and Research, Supplement to General Plan Guidelines – Tribal Consultation Guidelines, April 15, 2005, p. 6).

[28]/ A "historic resource" includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR; (2) a resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in a historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, shall be presumed to be historically or culturally significant (pubic agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant); or (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

significance of that resource. Section 15064.5(a) defines a "historic resource" (relying on the holding in League for Protection of Oakland's Architectural and Historic Resources v. City of Oakland to describe the relative significance of resources listed in the CRHR, listed in a local register or survey or eligible for listing, or that may be considered locally significant despite not being listed or eligible for listing).[29,30]

As described in Section 21084.1 of CEQA and Section 15064.5(a)(4) of the CCR, "[t]he fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources [CRHP], not included in a local register of historical resources, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 shall not preclude a lead agency from determining whether the resource may be a historical resource for purposes of this section."[31] Section 15064.5 of the State CEQA Guidelines establishes general rules for the analysis of historical (including archaeological) resources in order to determine whether a proposed project may have a substantial adverse effect on the significance of that resource. Section 15064.5(a) defines a "historic resource" (relying on the holding in League for Protection of Oakland's Architectural and Historic Resources v. City of Oakland to describe the relative significance of resources listed in the CRHR, listed in a local register or survey or eligible for listing, or that may be considered locally significant despite not being listed or eligible for listing).[32]

- California Penal Code. Under the provisions of the California Penal Code (CPC), it is a misdemeanor offense for any person, other than the owner, to willfully damage or destroy archaeological or historical features on public or privately owned land (14 CPC Part 1, Section 622.5).

[29]/ A resource does not need to have been identified previously either through listing or survey to be considered significant under CEQA. In addition to assessing whether historic resources potentially impacted by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria prior to making a finding as to a proposed project's impacts to historic resources (Section 21084.1, PRC; Section 15064.5[a][3], CCR).

[30]/ Section 15064.5(b) describes those actions that have or that may have substantial adverse effects and include the following: (1) physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired; (2) the significance of an historical resource is materially impaired when a project: (A) demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; (B) demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a "local register" of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or (C) demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources, as determined by a lead agency for purposes of CEQA.

[31]/ A "historic resource" includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR; (2) a resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in a historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, shall be presumed to be historically or culturally significant (pubic agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant); or (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

[32]/ A resource does not need to have been identified previously either through listing or survey to be considered significant under CEQA. In addition to assessing whether historic resources potentially impacted by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria prior to making a finding as to a proposed project's impacts to historic resources (Section 21084.1, PRC; Section 15064.5[a][3], CCR).

- California Health and Safety Code. Section 7050.5 of the H&SC stipulates that if human remains are discovered during construction, the project owner is required to contact the county coroner.

4.8 Geology and Soils[33]

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations and existing Etiwanda Generating Station and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, geology and soils are not further addressed herein.

4.8.1 Geology and Soils Environmental Setting

Lake Elsinore is a shallow lake (13 meters maximum depth based on historic records) with a relatively small drainage basin (<1,240 square kilometers) from which the San Jacinto River flows (semi-annually) into and terminates within the lake's basin. Lake Elsinore has overflowed to the northwest through Walker Canyon very rarely, only three times in the 20th Century and 20 times since 1769 based on Mission diaries. Each overflow event was very short-lived (<several weeks), demonstrating that Lake Elsinore is essentially a closed-basin lake system. Conversely, Lake Elsinore has dried completely on four occasions since 1769.[34]

Lake Elsinore sits within a structural depression (a down-dropped graben) along the Elsinore fault. Lake Elsinore is surrounded by a combination of predominantly igneous and metamorphic rocks. Lake Elsinore is constrained along its southern edge by the steep, deeply incised Elsinore Mountains. The Elsinore Mountains provide a local sediment source. Total sediment thickness underlying Lake Elsinore is estimated to be between 600 and 1,000 meters (m). Two exploratory wells have been drilled at the east end of the lake to 542 m and 549 m, respectively, with sediment described as mostly fine-grained.

Presented in Figure 4.8.1-1 (Physiographic Provinces of Southern California) is a map showing the Project's general location relative to physiographic provinces of southern California. Colored areas define structural assemblages. The approximate location of most faults having large displacement or length are shown. The Peninsular Ranges Province is sharply bounded to the east by the San Andreas fault zone but its northern extent is poorly defined. The inferred boundary between the Peninsular Ranges and the San Gabriel Mountains assemblage is hidden under thick Quaternary deposits and its location and character are highly speculative.[35]

- **City of Lake Elsinore Background Reports**. Information from the City's "Background Reports" provides general information concerning the Project's existing geologic setting.

[33]/ For additional information about geologic, geotechnical, and seismic hazards, stakeholders are referred to: (1) "Riverside Operational Area – Multi-Jurisdictional Local Hazard Mitigation Plan" (County of Riverside, October 5, 2004); (2) "Multi-Jurisdictional Hazard Mitigation Plan, San Diego County, CA" (County of San Diego, March 2004); and (3) "State of California Multi-Hazard Mitigation Plan" (Governor's Office of Emergency Service, September 2004).

[34]/ Kirby, Matthew E. and Anderson, Michael, Developing a Baseline of Natural Lake-Level/Hydrologic Variability and Understanding Past Versus Present Lake Productivity Over the Late-Holocene: A Paleo-Perspective for Management of Modern Lake Elsinore, A Final Contract Report to the Lake Elsinore and San Jacinto Watershed Authority, March 2005, pp. 18-20.

[35]/ Morton, Douglas M. and Miller, Fred, Geologic Map of the San Bernardino and Santa Ana 30' x 60' Quadrangle, California, Open File Report 2006-1217, United States Geological Survey, 2006.

As indicated therein and as illustrated in Figure 4.8.1-2 (City of Lake Elsinore – Geologic Formations): "West of the Elsinore Valley, the Santa Ana Mountains uplift is dominated by primarily granitoid rocks of Cretaceous age belonging to the Peninsular Ranges batholith. Immediately above Lake Elsinore, rocks are primarily potassium feldspar – bearing tonalite and granodioorite. Bodies of biotite and hornblende granodiorite are present to the northwest and southwest; farther to the west, hornblende gabbro occurs locally. Roof pendants consisting of metasedimentary rocks of Mesozoic age are also present to the west. To the west and north, siliceous metasediments of Jurassic Bedford Canyon Formation are exposed in a broad east-west trending belt. Where drainages debouch on the valley floor, alluvial fan deposits comprising gravel, sand, silt and ranging in age from mid-Pleistocent to Holocene are conspicuous. Unconsolidated Holocene deposits of bouldery to sandy alluvium are present in active and recently active drainage channels. . .The Elsinore Valley itself is floored primarily by unconsolidated sand, silt, and clay of latest Pleistocene and Holocene age, recording riverine drainage along the valley axis. Immediately surrounding Lake Elsinore is a broad expanse of late Holocene lake deposits consisting of grey, fine-grained sediments (clay, silt, and fine-grained sand) documenting the lake's former extent."[36]

As further noted therein, as illustrated in Figure 4.8.1-3 (Seismic Hazards) and indicated in Table 4.8.1-1 (Maximum Credible Earthquakes and Recurrence Intervals for Key Southern California Faults), the City and surrounding areas have the potential to experience significant groundshaking as a result of seismic activities on a number of active faults. Figure 4.8.1-4 (Liquefaction Susceptibility in the Lake Elsinore Area) presents a generalized map of liquefaction potential based on data on file with the City.

Table 4.8.1-1. Maximum Credible Earthquakes and Recurrence Intervals for Key Southern California Faults

Fault	Magnitude of Maximum Credible Earthquake	Approximate Recurrence Interval
Newport-Inglewood	M_W 6.0 – 7.4	Unknown
Whittier	M_W 6.0 – 7.2	Unknown
Raymond Hill	M_W 6.0 – 7.0	Unknown
Cucamonga	M_W 6.0 – 7.0	Estimated at 600-700 years
Elsinore	M_W 6.5 – 7.5	250
San Jacinto	M_W 6.5 – 7.5	100-300 years on each segment
San Andreas	M_W 6.8 – 8.0	Ranges from less than 20 years at Parkfield in the north to more than 300 years; Averages about 140 years on Mojave segment of fault
North Frontal fault of the San Bernardino Mountains	M_W 6.0 – 7.1	Uncertain
Pinto Mountain	M_W 6.5 – 7.5	Uncertain
Kickapoo (source of 1992 M7.3 Landers earthquake)	M_1 4.8 – 7.5	Uncertain; Probably about 7,000 years
Notes: M_W = Richter (local) magnitude M_1 = Moment magnitude		

Source: City of Lake Elsinore

[36]/ Op. Cit., City of Lake Elsinore General Plan, Background Reports, pp. 12-6 and 12-7.

- **United States Geological Survey Geologic Maps**. With the exception of the Talega-Escondido 69/230-kV transmission upgrade and a segment of the southern portion of the TE/VS Interconnect (located within the area of the USGS 7.5-Minute Wildomar quadrangle), the Project area is presented on one or more of the following USGS maps. The source map scales differ and, because each map has a separate key (legend), those source documents should be consulted.

  ◊ **30x60-Minute Santa Ana Quadrangle**.[37] A preliminary geologic map of the Santa Ana 30 X 60-Minute USGS quadrangle is included, in part, as Figure 4.8.1-5 (Preliminary Geologic Map - Santa Ana 30' x 60' USGS Quadrangle [1999]).[38]

  In total, the quadrangle covers an area of about 2,000 square miles in southeastern Los Angles, most of Orange, and southwestern Riverside Counties. As illustrated, a portion of the Project is located in and proximal to the Elsinore Mountains of the Santa Ana Mountain Range, which form the northernmost range of the Peninsular Ranges Province. The Peninsular Ranges Province is characterized by a northwest-striking geologic fabric (faulting and folding) influenced by the San Andreas tectonic regime.

  Physiographically, as illustrated in Figure 4.8.1-1 (Physiographic Provinces of Southern California) and in Figure 4.8.1-6 (Major Structural Blocks of the Northern Peninsular Ranges Batholith),[39] the northern part of the Peninsular Ranges Province is divided into three major, fault-bounded blocks: the Santa Ana Mountains, Perris, and San Jacinto Mountains. The Santa Ana Mountains block is the westernmost of the three, extending eastward from the coast to the Elsinore fault zone. Tertiary sedimentary rocks, ranging in age from Paleocene through Pliocene, underlie most of the western part of this block.

  East of these tertiary rocks, in the Santa Ana Mountains, a highly faulted anticlinal structure is cored by a basement assemblage of Mesozoic meta-sedimentary and Cretaceous volcanic and batholithic rocks. Overlying this basement is a thick section of primarily upper Cretaceous marine and Paleocene marine and non-marine rocks. In the southern part of the Santa Ana Mountains, the anticlinal nature of the mountains passes into an extensive, nearly horizontal erosional surface that is partly covered by Miocene basalt flows. Over the top of this basement assemblage is a thick section of primarily upper Cretaceous marine rocks and Paleocene marine and non-marine rocks.

  ◊ **San Bernardino and Santa Ana 30x60-Minute Quadrangles**. A geologic map of a portion of the San Bernardino and Santa Ana 30' x 60' Quadrangles is included in Figure 4.8.1-7 (Geologic Map – San Bernardino and Santa Ana

[37]/ Morton, D.M., Preliminary Digital Geologic Map of the Santa Ana 30' X 60' Quadrangle, Southern California, Version 1.0, Open-File Report 99-172, United States Geological Survey, 1999.
[38]/ Readers should refer to the published USGS geology map for a description of the legend.
[39]/ Morton, Douglas M. and Weber, Harold F. Jr., Geology Map of the Lake Mathews 7.5- Quadrangle, Riverside County, California, Open-File Report 01-479, United States Geological Survey, 2001.

30x60-Minute Quadrangles [2006]).[40] As more thoroughly described therein, the Santa Ana Mountains block is divided longitudinally into an eastern half consisting of the Puente Hills and the Santa Ana Mountains and a western half of relatively low-lying sedimentary rocks extending west from the flank of the Santa Ana Mountains to the coast.

The tectonic development of the Santa Ana Mountains anticline appears to be the result of the angular discordance between the strike of the Elsinore fault and the more westerly striking Whittier fault. The length of the Santa Ana Mountains elevated by the discordance between the two faults extends south of the Santa Ana River about 35 kilometers (km). Further south, the summit elevation decreases to 600-800 m over a distance of about 12 km where it is the near-horizontal, low-relief Santa Rosa Plateau.

The Santa Ana Mountains consist of three topographically distinct segments. All three segments are bounded on the east by a steep escarpment along the Elsinore fault zone. The northern segment extends southward to the north end of Lake Elsinore at Leach Canyon where there is a distinct job in the mountain front. The east flank of the mountains is deeply dissected and the crest of the range is at elevation of 1200-1700 meters above msl. Drainages extend four to six km into the mountains from the eastern margin and head against extensively developed drainages on the west flank of the mountains. On the west side of the mountains, the northern segment extends south to the upper part of Hot Springs Canyon.

The east face of the central segment between Leach Canyon to about Slaughterhouse Canyon drainage basin area is moderately dissected but more subdued that the northern segment. Summit elevations are about 1000-1100-meters above msl, the highest elevation is Elsinore Peak (1090-meters above msl). The physiography of the central segment is a broad low relief area having short, steep gradient drainages extending about two to three km from the east margin of the mountains and that are paired with extensive drainages on the western slope. There is no sharp difference between the north and central segments on the west side of the mountains.

The Perris block is a rectangular-shaped block, has low relief, and is bounded on the east by the San Jacinto fault zone and on the west by the Elsinore fault zone. The northwestern part of the block is somewhat ill-defined north of City of Corona where the Elsinore fault becomes the more westward striking Whittier fault and in the Pomona-San Jose Hills area where it is poorly defined beneath thick Quaternary and Tertiary cover. The Perris block consists of two distinct parts, a northern and a southern part. Upstream from Corona, the northern part consists of the largely alluvial valley area of the Santa Ana River. The southern part of the block consists of widespread exposures of basement and a series of interconnected alleviated valley areas. Most elevations range from 450-700 m above msl.

[40]/ Morton, Douglas M. and Miller, Fred, Geologic Map of the San Bernardino and Santa Ana 30' x 60' Quadrangle, California, Open File Report 2006-1217, United States Geological Survey, 2006.

As illustrated in Figure 4.8.1-8 (Major Earthquake Faults),[41] a number of fault bounded basins are located along the margin of the Perris block and within adjacent blocks. A number of pull-apart basins are located along the Elsinore fault zone; most notably, the Elsinore basin, a relatively shallow depression bounded on the northeast by the Willard fault and on the southwest by the Wildomar fault, both segments of the Elsinore fault zone. The Elsinore fault zone consists of a complex assemblage of right-stepping and left-stepping en echelon faults. Movement on these faults have produced a series of extensional basins that, in aggregate, result in an elongate, composite, structural trough. The trough includes numerous minor compressional uplifted domains, some of which separate the constituent extensional basins. The largest of these extensional basins, the Elsinore structural basin, is largely filled by Lake Elsinore.

In the vicinity of the City of Corona, the Elsinore fault zone either branches into or intersects two independent faults, the Whittier fault which has a more westerly strike and the Chino fault which continues for about 15 km with the same strike as the Elsinore fault. The juncture of these faults is obscured beneath young alluvium. The Elsinore, Whittier, and Chino fault zones have commonly been combined as a single, related fault complex. North of Wildomar, the Hot Springs fault is considered to be a branch of the Elsinore fault zone. Estimates of lateral displacement along the Elsinore fault zone vary widely.

◊ **7.5-Minute Elsinore Quadrangle**.[42] A preliminary geologic map of the Elsinore 7.5-Minute USGS Topographic Quadrangles has been released by the USGS and is included, in part, as Figure 4.8.1-9 (Geologic Map - Elsinore 7.5-Minute USGS Quadrangle [2003]). The 7.5-minute quadrangle covers an area of about 62 square miles in southwestern Riverside County. The Elsinore quadrangle is located in the northern part of the Peninsular Ranges Province and includes parts of two structural blocks, or structural subdivisions of the province. The active Elsinore fault zone diagonally crosses the southwest corner of the quadrangle and is a major element of the right-lateral strike-slip San Andreas fault system. The Elsinore fault zone separates the Santa Ana Mountains block west of the fault zone from the Perris block to the east. Internally, both blocks are relatively stable and within the quadrangle are characterized by the presence of widespread erosional surfaces of low relief.

Within the quadrangle, the Santa Ana Mountains block is underlain by undifferentiated granitic rocks of the Cretaceous Peninsular Ranges batholith but, to the west, includes widespread pre-batholithic Mesozoic rocks. The Perris block is underlain by a combination of batholithic and prebatholithic rocks, the latter consisting of metasedimentary rocks of low metamorphic grade; sub-greenschist grade. The most abundant lithology is phyllite but includes locally thick sections of impure quartzite. Minor sills, dikes, and small elongate plutons

[41]/ Morton, Douglas M. and Miller, Fred, Geologic Map of the San Bernardino and Santa Ana 30' x 60' Quadrangle, California, Major Faults, Open File Report 2006-1217, United States Geological Survey, 2006.

[42]/ Morton, D.M, and Weber, F.H., Preliminary Geologic Map of the Elsinore 7.5' Quadrangle, Riverside County, California: United States Geological Survey Open-File Report OF 03-281, 2003; Morton D.M. and Weber, F.H., Geologic Map of the Elsinore Quadrangle, Southern California: United States Geological Survey Open-File Report 90-700, 1991.

of fine-grained hornblende gabbro intrude the phyllite. Thin layers of tremolite-bearing marble occur locally. Also local are thin layers of manganese-bearing rocks. Both rhodonite and manganese oxides occur in these layers. The phyllite has a regular northwest strike throughout the main body of metamorphic rock, giving rise to a homoclinal section over 25,000-feet thick. The layering-schistocity of these rocks is transposed bedding.

In the northwest corner of the quadrangle is a series of Cretaceous volcanic and associated sedimentary rocks containing widespread primary sedimentary structures that appears to post date the metamorphism of the phyllite. The volcanic rocks are part of the Estelle Mountain volcanics of primarily rhyolitic composition. The sedimentary rocks are well indurated, perhaps incipiently metamorphosed, siliceous rocks containing local conglomerate beds.

Within the quadrangle are parts of three plutonic complexes, all part of the composite Peninsular Ranges batholith. In the southeast corner is the northwest part of the Paloma Valley ring complex, which is elliptical in plan view and consists of an older ring-dike and two subsidiary short-arced dikes that were emplaced into gabbro by magmatic stoping. Small to large stoped blocks of gabbro are common within the ring-dikes. A younger ring-set, made up of hundreds of thin pegmatite dikes, occur largely within the central part of the complex. Only the northern part of the older ring dike occurs within the quadrangle. Stoped gabbro masses occur near the southeast margin of the quadrangle.

In the northern part of the quadrangle is the southern part of the composite Gavilan ring complex of mostly tonalite composition. Hypersthene, although not usual in tonalite in the batholith, is a characteristic mineral of most of the rock of this complex. The Gavilan ring complex is a shallow intrusive that appears to be tilted up to the northeast. Fabric of the rocks changes in texture from hypauthomorphic-granular in the east to semiporphyritic in the west. The main part of the complex appears to have been emplaced by magmatic stoping. Several inactive gold mines (e.g., Goodhope, Gavilan, Santa Rosa) are located within the complex. Within the Gavilan ring complex is the south-half of the Arroyo del Toro pluton. This near circular-in-plan pluton consists of massive-textured granodiorite that is essentially devoid of inclusions, and at one time was quarried for building stone.

The Elsinore fault zone forms a complex series of pull-apart basins. The largest and most pronounced of these pull-apart basins forms a flat-floored closed depression (La Laguna) which is partly filled by Lake Elsinore. This basin forms the terminus for the San Jacinto River. During excessively wet periods the La Laguna fills and the overflow passes through Warm Springs Valley into Temescal Wash, before joining the Santa Ana River in the City of Corona. La Laguna, bounded by active faults, is flanked by both Pleistocene and Holocene alluvial fans emanating from both the Perris block and the Santa Ana Mountains. North of La Laguna are exposures of the Paleocene Silverado Formation. Clay beds of

the Silverado Formation have been an important source of clay. Overlying the Silverado Formation are discontinuous exposures of conglomeratic younger Tertiary sedimentary rocks that are tentatively correlated with the Pauba Formation.[43]

◊ **15-Minute Lake Elsinore Quadrangle**.[44] The Lake Elsinore 15-minute quadrangle coves about 250 square miles and includes parts of the southwest margin of the Perris Block, the Elsinore trough, the southeastern end of the Santa Ana Mountains, and the Elsinore Mountains. The oldest rocks consist of an assemblage of metamorphics of igneous effusive and sedimentary origin. They are intruded by diorite and various hypabyssal rocks, then in turn by granitic rocks which occupy over 40 percent of the area. Following the last igneous activity of probable Lower Cretaceous age, an extended period of sedimentation started with the deposition of the marine Upper Cretaceous Chico formation and continued during the Paloecene under alternating marine and continental conditions on the margins of the block. A marine regression towards the north, during the Neocene, accounts for the younger Tertiary strata in the region. Outpourings of basalts to the southeast indicates that igneous activity was resumed toward the close of the Tertiary.

The fault zone which characterizes the Elsinore trough marks one of the major tectonic lines of southern California. It separates the upthrown and tilted block of the Santa Ana Mountains to the south from the Perris Block to the north. Most of the faults are normal in type and nearly parallel to the general trend of the trough or intersect each other at an acute angle. Vertical displacement generally exceeds horizontal and several periods of activity are recognized.[45] The principal structural element of the Elsinore trough consists of a system of faults which can be divided into two major groups: (1) piedmont or longitudinal faults, forming the northeast and southwest boundaries of the trough and separating it from the highlands of the Perris and Santa Ana-Elsinore Mountain blocks, respectively; and (2) internal or transverse faults which are between and intersect the faults of the first group.

The major piedmont or longitudinal faults that may be traversed by either the proposed lines, penstocks, and tailrace systems are illustrated, in part, in Figure 4.8.1-10 (Geologic Map - Lake Elsinore 15-Minute Quadrangle [1959]) and are briefly described below.

♦ **Glen Ivy fault zone**. The Glen Ivy fault zone is a prominent feature that enters the Lake Elsinore quadrangle in the northwest corner near Glen Ivy Hot Springs and extends southeast toward Lucerne at the northwest end of the lake. About one mile northwest of this point, the fault zone leaves the margin of the Santa Ana-Elsinore Mountain block to pass under the

[43]/ Morton, Douglas M. and Weber, F. Harold Jr., Preliminary Geologic Map of the Elsinore 7.5' Quadrangle, Riverside County, California, United States Geological Survey Open-File Report OF 03-281, 2003, pp. 8-9.
[44]/ Op. Cit., Geology of the Lake Elsinore Quadrangle, California, Geology and Mineral Resources of the Lake Elsinore Quadrangle, California, California Division of Mines and Geology, Bulletin 146, 1959.
[45]/ Ibid., pp. 9-10.

alluvium and crosses the trough along the Clevelin Hills on the northeast side of Lake Elsinore. It disappears again under the alluvium and the fanglomerate at the southeast end of the lake. The northwestern segment of this fault zone, between Glen Ivy and Lucerne, represents the piedmont fault system on the northeast side of the Santa Ana Mountain block. It consists of several parallel to sub-parallel step faults that correspond to different lines of breaks, kerncols, and kernbuts. These faults can be traced only for distances of less than a mile and appear to be en echelon or to intersect each other at acute angles. This fault zone is as much as a quarter of a mile wide and apparently decreases in width toward the southeast.[46]

- **Willard fault zone**. The Willard fault zone forms the northwest face of the Elsinore Mountains and extends southeasterward to the end of the Elsinore trough south of Temecula where it ends against the Agua Tibia Mountains. The fault line is well marked by the bold scarp of the Elsinore Mountains. It is traceable as a straight line for about 11 miles and is marked at a few places by triangular facets. The recency of the movements of this fault or its parallel subsidiaries is shown by small hills and knolls detached form some of the mountain spurs. The fault zone consists of several major faults. The first is marked by a slope break at an elevation of 1450-feet above msl and is entirely in metamorphic rocks. The second lies along the contact between the metamorphic rocks and quartz diorite at an elevation of about 1700 feet above msl. The third is shown by a slope break encountered in quartz diorite at an elevation of 1850 feet above msl, where an extensive line of kernbuts and cols lie along the mountain face. Another slope break marked yet another fault is at an elevation of about 2100 feet above msl and probably represents the southern limit of the fault zone. The straightness of the fault line suggests that the dip of the fault surface is nearly vertical or steeply dipping to the northeast. On the upthrown side of this fault is the Elsinore Mountain block to the southwest and on the downthrown side is the Elsinore trough to the northeast.[47]

- **Tenaja fault**. The Tenaja fault is a reverse fault, with a general tilt to the southeast, caused by hinge line adjustments of the Santa Ana-Elsinore Mountain block during its elevation on the northeast side of the Elsinore trough.

- **Los Pinos fault**. This fault is a straight-line feature extending from Hot Springs Canyon to the Elsinore trough, separating the Los Pinos Peak block to the north on the upthrown side from the Potrero de los Pinos block on the downthrown side to the south. The fault is evidenced by abrupt termination of rock patches at its trace, prominent physiographic alignments, and some fracture zones.

[46]/ Ibid., pp. 52-53.
[47]/ Ibid., p. 54.

- ♦ **Harris fault**. The Harris fault is a prominent feature and can be traced from about eight miles either through displacements of outcrops or physiographic features.[48]

◊ **Other USGS Geologic Maps**. USGS geologic maps depicting the area of the proposed Case Springs Substation and a portion of the proposed Southern (Santa Rosa-Case Springs) transmission line, are presented, in part, in Figure 4.8.1-11 (Geologic Maps - Fallbrook and Margarita Peak 7.5-Minute Quadrangles).[49] A USGS geologic map depicting the easterly portion of the Talega-Escondido 69/230-kV transmission line upgrade, including the Escondido Substation, is presented, in part, in Figure 4.8.1-12 (Geologic Map – Oceanside 30x60-Minute Quadrangle)[50] The Oceanside 30x60-minute quadrangle is a compilation of the more detailed Margarita Peak, Fallbrook, Temecula, Pechanga, Pala, Valley Center, and Escondido 7.5-minute quadrangles. Because the proposed 230-kV transmission line upgrades will be constructed on existing towers and on involve existing facilities, the more detailed USGS geologic maps are not presented herein.

▪ **Regional Geology**. There are eleven geomorphic provinces in California. The Peninsular Ranges Geomorphic Province encompasses the area of the Project in western Riverside and northern San Diego Counties. The Peninsular Ranges Province terminates at the Transverse Ranges Province at the north, in the area of the San Jacinto Mountains. This province is a well-defined geologic and physiographic unit characterized by elongated ranges and valleys with a general northwesterly trend. Excluding the Talega-Escondido 69/230-kV transmission upgrade, the Project spans the boundary between two geologic environments - an actively subsiding fault-bounded basin (Elsinore Basin) containing Lake Elsinore and a more stable mountain block underlain by minor metamorphic rocks and undivided granitic rocks. The Elsinore Mountains are a portion of the Santa Ana Mountain Range, which form the northernmost range of the Peninsular Ranges Province. The Peninsular Ranges Province is characterized by a northwest-striking geologic fabric (faulting and folding) influenced by the San Andreas tectonic regime.

The Elsinore Basin is located in the southeast part of the Los Angeles Basin. The Los Angeles Basin is a region of alluvial outwash, encompassing most of Los Angeles and Orange Counties, as well as western Riverside and San Bernardino Counties. The Elsinore Basin is a down-faulted (trough) portion of the earth's crust about 8 miles long and between 2-3 miles wide. The long axis of the valley parallels the northwesterly regional structural trend and rugged hills and mountains border the basin on all but the southeastern side. The lowest portion of the basin floor is a broad, relatively flat area known as "La Laguna," which is partially occupied by Lake Elsinore. La Laguna forms the terminus for the San Jacinto River, which flows into the Elsinore Basin from the northeast. To the southwest, are the steep slopes of the Elsinore Mountains. The

[48]/ Ibid., pp. 56-57.

[49]/ Tan, Siang S., Geologic Map of the Fallbrook 7.5' Quadrangle, San Diego and Riverside Counties, California: A Digital Database, California Division of Mines and Geology, 2000; Tan, Siang S., Geologic Map of the Margarita Peak 7.5' Quadrangle, San Diego County, California: A Digital Database, California Division of Mines and Geology, 2001; Tan, Siang S., Geologic maps of the Northwestern Part of San Diego County, California, Open-File Report 96-02, California Division of Mines and Geology, 1996.

[50]/ Kennedy, Michael P. and Tan, Siang S., Geologic Map of the Oceanside 30'x60' Quadrangle, California, 2005.

northeastern edge of the basin is bordered by the Sedco and Cleveland Hills, part of the Temescal Mountain range. The Elsinore (Glen Ivy) fault parallels the base of the Cleveland Hills and marks the structural edge of the basin in this area. The southeastern end of the basin is formed by a low alluvial divide built up by streams draining the Elsinore Mountains.

Lake Elsinore is a structural depression formed within a graben along the Elsinore fault. Geologically, Lake Elsinore is surrounded by a combination of igneous and metamorphic rocks, some of which outcrop in the lake's littoral zone along the northern edge. Lake Elsinore is constrained along its southern edge by the steep, deeply incised Elsinore Mountains. The San Jacinto Mountains lie about 70 km to the northeast of Lake Elsinore.

The geology of the Elsinore Valley comprises essentially three major units. At the surface lies alluvium from a variety of sources. Underneath the surface alluvium, is the sedimentary Pauba Formation. Under that lies the "basement rocks" of the Peninsular Ranges Batholith. The alluvial formation covers the lower portions of the valley and can be divided into alluvial fan deposits, floodplain deposits, and recent lacustrine deposits.

As illustrated in Figure 4.8.1-13 (General Soil Map – Western Riverside and Northern San Diego Counties), most of the soils in Elsinore Valley surrounding Lake Elsinore are of the Hanford-Tujunga-Greenfield association. These soils are generally sandy loams, loamy sands, although some areas contain loams and coarse sandy loams with gravel and cobble. Erosivity of these soils generally ranges from slight to moderate; however, wind-caused erosion can be high in some areas. Permeability is generally moderate to rapid and the shrink-swell potential is low. Soil depths range can reach 60 inches. The soils in the back basins of Lake Elsinore are primarily Waukena loamy fine sand and Willows silty clay with some Traver loamy fine sand. All three of these soils are saline-alkali soils because of the repeated wetting and drying of these lakebed soils, as well as accumulation of salts. Wind-caused erosion of these finer (silt and clay) soils is assumed to be moderate to high. Soils to the west of Lake Elsinore at the location of the proposed powerhouse sites are Hanford sandy loams. These soils are generally well-drained soils on alluvial fans and alluvial plains formed of granitic alluvium. Permeability is moderate and, if the soil is bare, runoff is slow to moderate and the erosion hazard is slight to moderate.

As illustrated in Figure 4.8.1-14 (Soil Survey Map – Upper Reservoir Sites),[51] there are three distinct soil types in the vicinity of the proposed Decker Canyon upper reservoir. In the canyon bottom, the soil is Blasingame-Vista complex. This moderately steep mapping unit is about 50 percent Blasingame loam and 40 percent Vista course sandy loam. The Blasingame series consists of well drained soils in the mountains. These soils formed in material weathered from metamorphic or granitic rocks. The soil is moderately slowly permeable. The Vista series consists of well-drained soils in the mountains. The soil is moderately rapidly permeable. The upslope area consists of well-drained Las Posas series soils formed in material weathered from gabbro. Permeability is moderately slow. Adjoining slopes are Cieneba-Blasiname-Rock outcrop complex. This strongly

[51]/ Soil Conservation Service, Soil Survey of Orange County and Western Part of Riverside County, California, United States Department of Agriculture, 1978.

sloping to moderately steep mapping unit is about 35 percent Cieneba sandy loam, 30 percent Blasingame loam, and 25 percent rock outcrop and large boulders. If soil is bare, runoff is rapid and the erosion hazard is high.

Most of the transmission alignments travel through mountainous or hilly terrain. Soil conditions can vary markedly between specific sites; however, along these alignments the dominant soil series include the Cieneba and Friant series. The Friant Series consists of somewhat excessively drained soils that formed in the mountains from material weathered from fine-grained metasedimentary rock. Slopes are generally steep and range from 30 to 70 percent. A typical Friant soil is a shallow, gravelly fine sandy loam with rock outcrops. Permeability is moderately rapid and, if the soil is bare, runoff is rapid and the erosion hazard is high. The Cieneba Series comprises shallow, somewhat excessively drained sandy loams on steep to very steep slopes. Some soils in this series are only 5-15 inches deep over bedrock. Gullies cut through these soils, and intermittent drainage channels and small landslides are common. Bare soil is susceptible to rapid runoff, and the erosion hazard is high.

The soils found in proximity to SR-74 (Ortega Highway), as it parallels San Juan Creek include calcareous loamy sands and fine sandy loams soils that are on nearly level ground, alluvial fans and floodplains, along with pockets of moderately well-drained sandy loams with strongly developed subsoil occurring on terraces and level to moderately steep ground.

As illustrated in Figure 4.8.1-15 (Soil Survey Map – Santa Rosa Substation and LEAPS Powerhouse Sites), exclusing those areas located within the Congressional boundaries of the CNF (which were not included in surveys performed by the Soil Conservation Service), there are two distinct soil types in the vicinity of the proposed Santa Rosa Substation and LEAPS Powerhouse sites.[52] North of the CNF boundaries, in the vicinity of the Santa Rosa Substation and LEAPS Powerhouse sites, the dominant soils type is Honcut series. In the Honcut series are well-drained soils on alluvial fans. These soils developed in alluvium from dominantly basic igneous rocks. In the typical profile, the surface layer is dark-brown snady loam about 22 inches thick. The underlying material is brown fine sandy loam or sandy loam and extends to a depth greater than 60 inches. Vegetation is chiefly annual grasses, forbs, and chamise. Runoff is medium and the hazard of erosion is moderate. Near the shoreline, Grangeville series soils are identified. The Grangeville series consists of moderately well drained to poorly drained soils on alluvial fans and floodplains. These soils developed in alluvium from granitic materials. The vegetation is chiefly annual grasses, saltgrass, and forbs. In a typical profile, the suface layer is grayish-brown loamy find sand and loamy very fine sand about 17 inches thick. The underlying layers are stratified and range from grayish brown to light brownish gray in color and from loamy fine dand to very fine sandy loam in texture. Runoff is medium and the hazard of erosion is moderate.

In general, Camp Pendleton is underlain by Holocene to late Pleistocene unconsolidated sedimentary deposits that include alluvium in canyon bottoms and coastal terraces,

[52]/ Soil Conservation Service, Soil Survey of Western Riverside Area, California, United States Department of Agriculture, November 1971.

Eocene to Pliocent sedimentary rocks of marine and non-marine origin, and Cretaceous to Triassic bedrock that includes highly consolidated and cemented sedimentary rock and plutonic and metamorphic crystalline rock.

- **Geologic Hazards**. Potential geologic hazards include ground rupture from active faulting, strong ground motions from earthquakes, landslides or rockfalls (induced by earthquake, rainfall and saturation, or other triggers), liquefaction and seismic settlement, and debris flows.

  As previously described, the Elsinore Valley is a complexly faulted trough formed by the movement along a series of parallel northwest-trending faults. This Elsinore fault zone, illustrated in Figure 4.8.1-16 (Portion of Fault Map of California),[53] is a part of the Whittier-Elsinore fault system. The parallel series of faults within this zone includes the Willard, Rome Hill, Wildomar, Lake, Burchkhalter, Sedco, Glen Ivy, and Freeway faults. The three main faults within the Elsinore Valley are the Willard, Wildomar, and Glen Ivy faults. These faults appear very young in age, evidenced by features such as the steep northeast side of the Elsinore Mountains to the southwest of Lake Elsinore. At its northern end, the Elsinore fault zone splays into two segments, the Chino fault and the Whittier fault. At its southern end, the Elsinore fault is cut by the Yuha Wells fault from what amounts to its southern continuation, the Laguna Salada fault.

  The Elsinore fault in southern California is a part of the San Andreas system of faults and runs southeast from the Los Angeles basin for approximately 250 km to the border of Mexico, where it continues southeast as the Laguna Salada fault. To the east are the San Jacinto and San Andreas fault zones and faults associated with the Eastern California Shear Zone. To the west is the Newport - Inglewood - Rose Canyon fault zone, which only locally comes on shore, and the offshore zone of deformation including the Coronado Bank, San Diego Trough and San Clemente faults. A comparison of the Elsinore and San Jacinto fault zones suggests that the Elsinore fault may produce larger, less frequent earthquakes on longer segments than the nearby San Jacinto fault zone.

  It is estimated that the Elsinore fault accommodates 10-15 percent of the plate-boundary slip in southern California. Previous work on the Elsinore fault has established the late Quaternary slip rate at about 4.5 to 5.5 millimeters per year (mm/yr), apparently decreasing to the southeast. The fault has been divided into five major segments, based on geometry and geomorphology, which are from north to south, the Whittier, Glen Ivy, Wildomar-Wolf Valley-Pala-Temecula, Julian, and Coyote Mountain segments. Geologic study of the past behavior of this fault reveals that it is capable of producing large earthquakes and, therefore, poses a major potential seismic hazard to southern California. The Elsinore fault zone is segmented. The central part of the fault zone near Julian fails infrequently in large (M7.5?) earthquakes, on the average of several thousand years, with the most recent earthquake having occurred 1.5-2 thousand years ago. The adjoining segment to the north, from near Pala to Lake Elsinore, ruptures more frequently in M7

[53]/ Wallace, Robert E. (ed), The San Andreas Fault System, Second Printing, United States Geological Survey, 1991.

sized events about every 600 years, with the most recent large earthquake between A.D. 1655 and 1810.[54]

The southeastern extension of the Elsinore fault zone (the Laguna Salada fault) ruptured in 1892 in a magnitude 7 earthquake, as measured on the Richter scale; however, the main trace of the Elsinore fault zone has only seen one historical event greater than magnitude 5.2, a magnitude 6 earthquake near Temescal Valley on May 15, 1910, northwest of Lake Elsinore, which produced no known surface rupture and did little recorded damage.

The Elsinore fault zone separates the upthrown and tilted block of the Santa Ana Mountains west of the fault zone from the Perris block to the east. Internally, both blocks themselves are relatively stable. This is evidenced by the presence of widespread erosional surfaces of low relief. Most faults within the Elsinore fault zone are normal in type and nearly parallel to the general trend of the trough or intersect each other at an acute angle. Vertical displacement generally exceeds horizontal, and several periods of activity are recognized. Research studies have been conducted to assess faulting on most of the sections and have documented Holocene activity for the length of the fault zone with a slip rate around 4-5 millimeter per year. Multiple events have only been dated on the Whittier fault and Glen Ivy North fault strand, so interaction between faults and adjacent sections is not well-known. The west edge of the fault zone, the Willard fault, is marked by the high, steep eastern face of the Santa Ana Mountains. The east side of the zone, the Wildomar fault, forms a less pronounced physiographic step.[55]

The Elsinore fault zone forms a complex of pull-apart basins. The principal structural element of the Elsinore trough is a system of faults that can be divided into two major groups: piedmont or longitudinal faults, forming the northeast and southwest boundaries of the trough; and internal or transverse faults, which are between the faults of the first group and intersect them. In addition, a number of major faults are located within the Santa Ana-Elsinore Mountain block. The closest faults to the proposed LEAPS Powerhouse site are the Willard and Wildomar faults, located west of Lake Elsinore, considered right-lateral, strike-slip faults. As illustrated in Figure 4.8.1-17 (Willard and Wildomar Faults), the Wildomar fault is mapped within the limits of Lake Elsinore. While the Willard and Wildomar faults are not identified as "active" (ground rupture during Holocene time), portions of the Elsinore fault zone have been designated as "active" by the State of California.[56]

Geomorphic evidence of active faulting has been identified along the traces of the Willard and Wildomar faults. If a moderate to large earthquake were to occur on the

[54]/ Thorup, Kimberly M., Paleoseismology of the Central Elsinore Fault in Southern California: Results from Three Trench Sites, United States Geological Survey, 1997.

[55]/ Kennedy, Michael P. and Morton, Douglas M., Preliminary Geologic Map of the Murrieta 7.5' Quadrangle, Riverside County, California, Open-File Report OF 03-189, United States Geological Survey, 2003, p. 9.

[56]/ The Willard and Wildomar faults are not identified as "active" by the State of California. The Elsinore fault zone, however, is defined as active by the State of California and the Uniform Building Code (UBC, 1997) identifies the Willard and Wildomar faults as within the Glen Ivy segment of the Elsinore fault zone. Weber (1977) also identifies geomorphic evidence of active faulting along the traces of the Willard and Wildomar faults. Consequently, for conceptual-level purposes, the Willard and Wildomar faults should be considered active (Source: GENTERRA Consultants, Inc., Geotechnical Feasibility Report – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, Riverside, California, August 28, 2003).

Elsinore fault, the Willard fault area could be the primary site of potential ground surface rupture and significant lateral displacement. The potential lateral displacement of this fault in a magnitude 7-7.5 earthquake, as measured on the Richter scale, is estimated to be in the order of 5-16 feet.

As assessment of seismic activity along the Elsinore fault zone splays located along the south side of Lake Elsinore was presented in a technical report prepared for the Geological Society of North America. As noted therein: "At Lake Elsinore (Riverside County), the Elsinore Fault Zone (EFZ) forms a ~2-km wide, right-oblique, transtensional, pull-apart tectonic basin bordered by the active (Holocene) Glen Ivy North and Glen Ivy South faults on the north and the Willard and Wildomar faults on the south. Immediately south of Lake Elsinore, the structural relationships and relative activity of these faults have heretofore been poorly constrained owing to a lack of geomorphic expression and to a ~10-m thick cover of late Pleistocene and Holocene lacustrine and fluvial (San Jacinto River) distal fan and deltaic deposits. Now, however, interpretations of data from new 20 to 30-m deep cone penetrometer test soundings and continuous borings, from seismic refraction logs, from soil-stratigraphic documentation of unbroken paleosols and other stratigraphic markers exposed in up to 12-m deep trenches, and from several internally consistent radiocarbon dates and related rates of fine-grained sedimentation, we determine that last displacement of pull-apart faults in a subsurface, ~60-m wide zone, occurred about 33 to 39 ka ago. The subsurface faults are right stepping and decrease in displacement to the south. We interpret these faults as the bifurcating and 'dying out' southern extension of the Glen Ivy North fault, which has demonstrable Holocene offset some 18 km to the north. Accordingly, most neotectonic slip on the south side of Lake Elsinore is now likely taken up by the Wildomar fault zone, expressed geomorphically by the nearby transpressional horst of Rome Hill and by escarpments along the east side of the Elsinore Trough at Murrieta and Temecula. Accordingly, previous southward projections and inferred Holocene activity of the Glen Ivy faults on the east and south side of Lake Elsinore now appear to be unfounded."[57]

As illustrated in Figure 4.8.1-18 (Percent Slope Map) and as indicated in the City's "Background Reports," a substantial portion of the City and surrounding areas is located on slopes 30 percent or greater, representing areas at "substantial risk of seismically induced slope failure."[58] Under certain conditions, strong ground motions can cause loose, sandy soils to liquefy and settle. These soft, fine-grained sediments can lose strength under such strong ground motions. The fine-grained sediments associated with the young lake deposits of Lake Elsinore could have the potential for liquefaction and seismic settling. Because the proposed location for the tailrace structure are located on the shores of Lake Elsinore, segments of these hydropower components could be founded on materials susceptible to liquefaction and seismic settling.

Debris flows are a common and widespread phenomenon during periods of intensive winter rainfall in southern California. Most debris flows occur during winters with above normal rainfall, especially during "El Nino" winters. Then can cause considerable

[57]/ Shemon, Roy, J., The Location and Relative Activity of Elsinore Fault Zone Splays, South Shore of Lake Elsinore, Riverside County, California, 97th Annual Meeting of American Association of Petroleum Engineers, April 11, 2001.
58/ Op. Cit., Lake Elsinore General Plan Update, Geology and Mineral Resources Background Report, January 2006, p. 12-10.

damage and result in loss of life. These debris flows originate as small, shallow landslides, commonly referred to as soil slip. Most soil slips initiate as debris slide blocks with a form of an elliptical-shaped slab. Debris slide blocks are a from of translational slides. Most soil slips deaggregate into debris flows, fluid slurries of soil and rock detritus that commonly converge in stream channels, where they flow down channel at various speeds for various distances. Unlike bedrock or deep-seated landslides that are generally recognizable for long periods of time, soil-slip debris flow scars quickly absorb into the ambient physiography leaving little record of their prior existence. The most lasting record of debris flows are deposits that accumulate on fans or as relatively steep ravine or gully fill.

Soil-slips pose relatively little hazard at the sites of initial failure but the debris flows that form from them can be a serious hazard to people and structures in their flow paths. As illustrated in Figure 4.8.1-19 (Soil-Slip Susceptibility Map – Santa Ana 30'x 60' Quadrangle), the USGS has prepared preliminary soil-slip susceptibility maps for the general Project area. These maps serve as a preliminary regional assessment of the relative susceptibility for initiating soil-slip debris flows during periods of intense winter rains. The soil-slip susceptibility maps identify those natural slopes most likely to be the sites of debris flow. Recently burned areas have exceptionally great potential for producing debris flows with little rainfall. Due to the change in physical properties of surface material during wildfires, any subsequent debris flow activity is markedly different from that of unburned areas. Surface material in recently burned areas is commonly hydrophobic and does not require saturation of the soil to form soil slips.[59]

- **Geotechnical Feasibility Report**. The following information is derived from a feasibility-level geotechnical assessment of the proposed Project.[60,61] The level of analysis is sufficient for CEQA compliance purposes but, if approved, additional design-level investigations will be required prior to the commencement of any construction activities. The feasibility-level analysis concluded that, based on the results of the investigation, from a geotechnical perspective, there are no apparent geotechnical constraints that would prevent the construction of the Project. The following information summarizes the report's findings regarding proposed facility sites.

  - ◊ **Decker Canyon Reservoir**. The geological units at the proposed Decker Canyon Reservoir site include granitic bedrock, alluvium, and colluvium. The bedrock is mapped as granodiorite, quartzdiorite, and tonalite. These rocks are typically light gray medium to coarse grained, and moderately fractured. Weathering of the granitic rock is variable in the near-surface. This variability in weathering was evidenced by the observation of nearly unweathered granitic "corestones" surrounded by highly weathered intact bedrock.

[59]/ Morton, D.M., Alvarez, R.M., and Campbell, R.H., Preliminary Soil-Slip Susceptibility Maps, Southwestern California, Open File Report OF 03-17, California Geological Survey, 2003, pp. 3-4.
[60]/ GENTERRA Consultants, Inc., Geotechnical Feasibility Report – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, Riverside, California, August 28, 2003.
[61]/ Prior to the release of the FEIS, the USDA Forest Service elected not to issue the Applicant an investigative SUP allowing destructive geotechnical investigations within the National Forest. An application for Forest Service authorization to conduct additional geotechnical investigations has been pending since February 2005.

The granitic rocks are cut by occasional darker and finer-grained intrusive dikes. The intrusive dikes are typically more resistant to weathering. Alluvium was not observed and no thick accumulation of colluvium was noted. Erosion gullies into the sideslopes and base of Decker Canyon show only a minor amount (less than two inches) of soil development overlying intact bedrock. Evidence of groundwater near the surface was not observed during the geologic investigation.

◊ **LEAPS Powerhouse**. The proposed LEAPS Powerhouse is located between the base of the Elsinore Mountains and Lake Elsinore. The surface geologic unit is a relatively young alluvial fan deposit. It is anticipated that the alluvial fan deposits are underlain by granitic bedrock at depth.

Geophysical surveys were performed at both the proposed Santa Rosa Substation, LEAPS Powerhouse, and alternative Ortega Oaks Powerhouse sites. Geophysical survey data at the Santa Rosa site found 10-30 feet of loose alluvial soils underlain by 60-125 feet of dense, unsaturated alluvial soils and/or weathered bedrock. Crystalline bedrock was encountered at depths ranging from 70-145 feet below the ground surface.

Survey data at the alternative Ortega Oaks Powerhouse site indicates 10-20 feet of loose alluvial soils underlain by 20-50 feet of dense, unsaturated alluvial soils, which was underlain by 70-90 feet of saturated alluvial soils and/or weathered bedrock. Crystalline bedrock was encountered at depths ranging from 110-160 feet below the ground surface. For both sites, it is anticipated that granitic rock will be encountered above the required powerhouse depth.

◊ **LEAPS penstocks**. It is anticipated that the penstock between the upper reservoir and the powerhouse site will be excavated into granitic bedrock, similar to that described for the upper reservoir sites. The bedrock should generally be sound and competent, although faults, fractures, joints, and groundwater will likely be encountered during the excavation of the proposed shaft and tunnel components of the penstock.

◊ **LEAPS inlet/outlet structure**. Between the LEAPS Powerhouse and Lake Elsinore, there are strands/splays of the active Elsinore fault zone. The strands consist of the Willard fault, near the base of the slope, and the Wildomar fault, mapped within the limits of Lake Elsinore. The Willard and Wildomar faults separate different geological units. Rock units are likely to be hard granitic rocks to the west of the faults with younger, less competent sedimentary deposits to the east of the faults. The proposed tailrace tunnel will extend from the proposed powerhouse (located on granitic bedrock), across the Willard fault and probably across the Wildomar fault into Lake Elsinore. It is anticipated that a portion of the tailrace tunnel will be constructed in soft or loose saturated sedimentary deposits.

◊ **Talega-Escondido transmission line**. The Talega-Escondido transmission line is situated in the west central peninsular Ranges Geomorphic Province, within the

Santa Ana Mountains subunit. Cretaceous age granitic rocks, generally in the eastern section, and Jurassic to Cretaceous age marine sedimentary rocks, in the western section, underlie this area. The western end of the alignment is underlain by Miocene marine sedimentary bedrock. The line crosses a region of locally steep terrain and deeply incised canyons. Due to the steep terrain, there is a moderate potential for rockslides and falls along the transmission line during a seismic event or following heavy rainfall. The marine sedimentary bedrock within the western portion of the alignment is susceptible to landslides.

The Talega-Escondido transmission line is situated between the active Newport-Inglewood fault and the Whittier-Elsinore fault, both subsidiary faults of the San Andreas fault system. The transmission line does not cross any known active faults; however, the line does cross several potentially active earthquake faults, including the Harris, Tenaja, Aliso, and Cristianitos faults.[62] Because of steep terrain, there is a moderate potentialfor rockslides and falls along the transmission line during a seismic event or following heavy rainfall. The marine sedimentary bedrock within the western portion of the Talega-Escondido transmission line is susceptible to landslides.

◊ **TE/VS Interconnect**. The TE/VS Interconnect would traverse the Elsinore (Glen Ivy) fault. Moderate to strong ground shaking should be expected in the event of an earthquake on the active Elsinore fault. Over its operational life, it is likely that the transmission facilities would be subjected to one or more moderate or larger earthquake occurring close enough to produce strong ground shaking. Portions of the transmission line would be subject to strong ground shaking with vertical and horizontal ground accelerations that could exceed lateral wind loads. In addition, conditions similar to those described for the Talega-Escondito transmission line would be anticipated.

4.8.2 Geology and Soils Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's regulatory setting.

- California Public Resources Code. Prompted by damaging earthquakes in northern and southern California in 1990, the State Legislature passed the Seismic Hazards Mapping Act (SHMA), codified in Sections 2690 through 2699.6 in Division 2, Chapter 7.8 of the PRC, which became operative on April 1, 1991. The SHMA was adopted for the purpose of protecting the public from the effects of strong ground shaking, liquefaction, landslides and other ground failure, and other hazards attributable to earthquakes. As required under the SHMA, the California Department of Conservation, Division of Mines and Geology (DMG)[63] was directed to delineate the various "seismic hazard zones" throughout the State.

[62]/ Op. Cit., Valley-Rainbow Interconnect Proponent's Environmental Assessment, p. 4-180 through 182.
[63]/ Now the California Geological Survey (CGS).

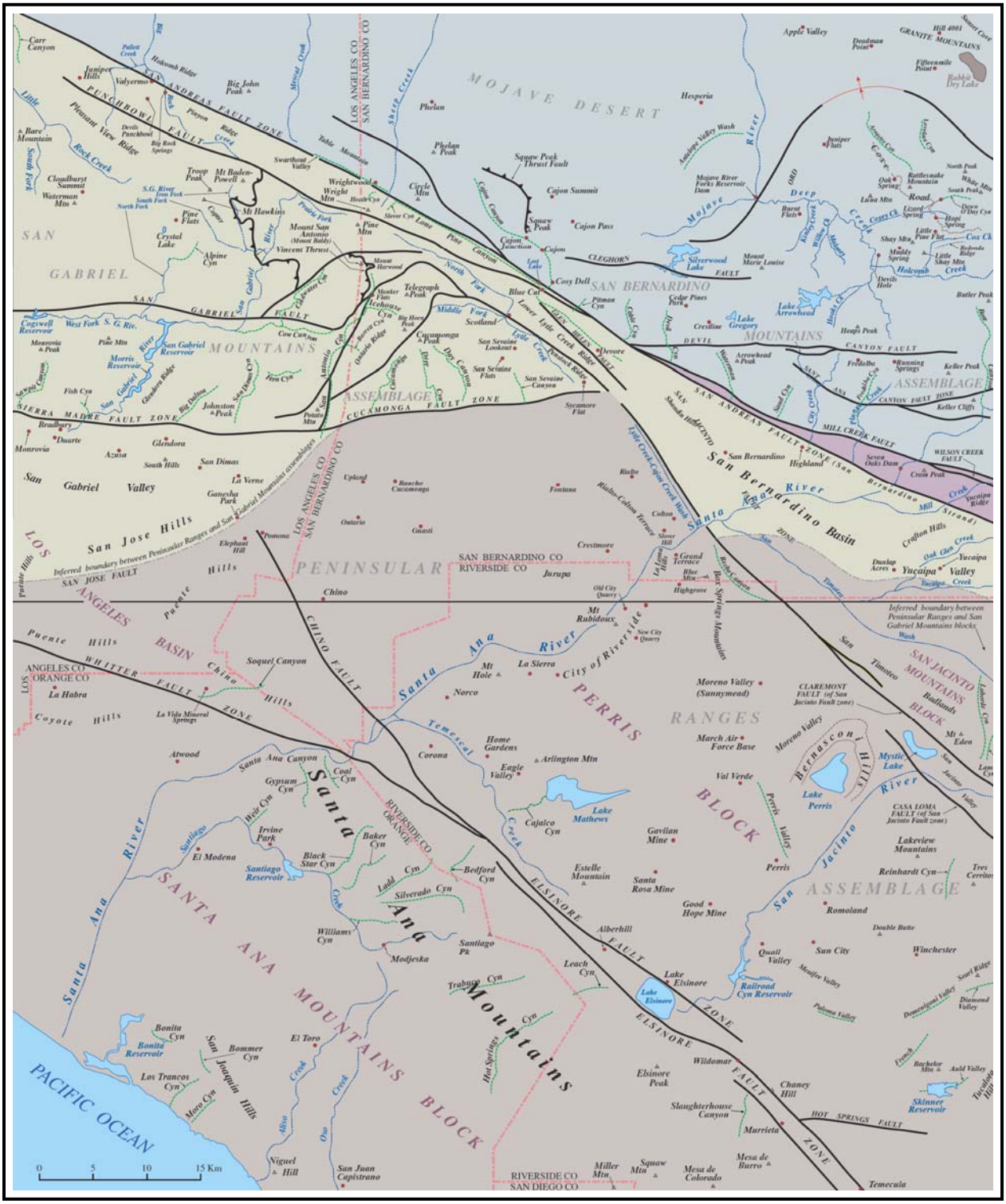


Figure 4.8.1-1. Physiographic Provinces of Southern California
Source: United States Geological Survey

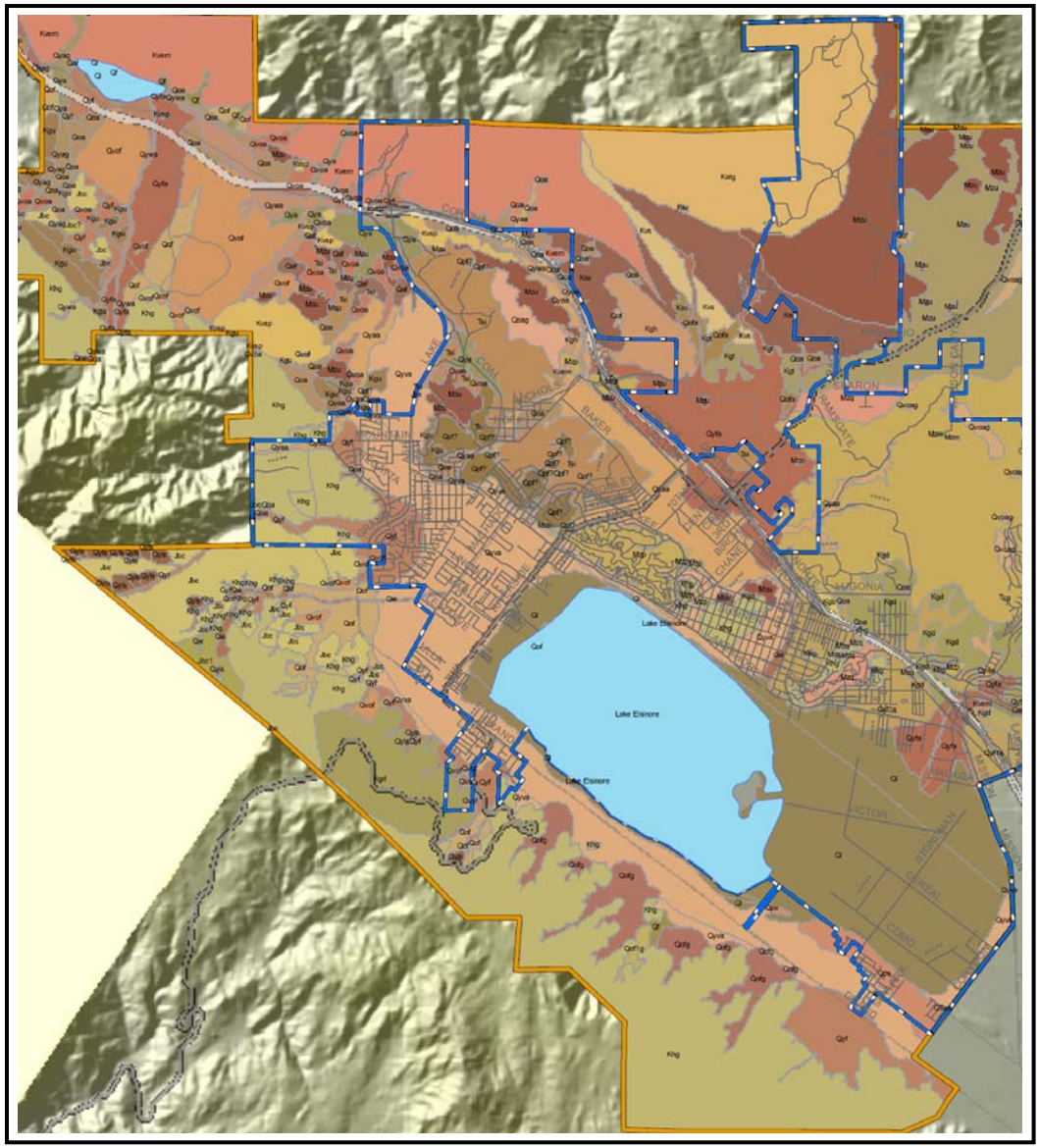
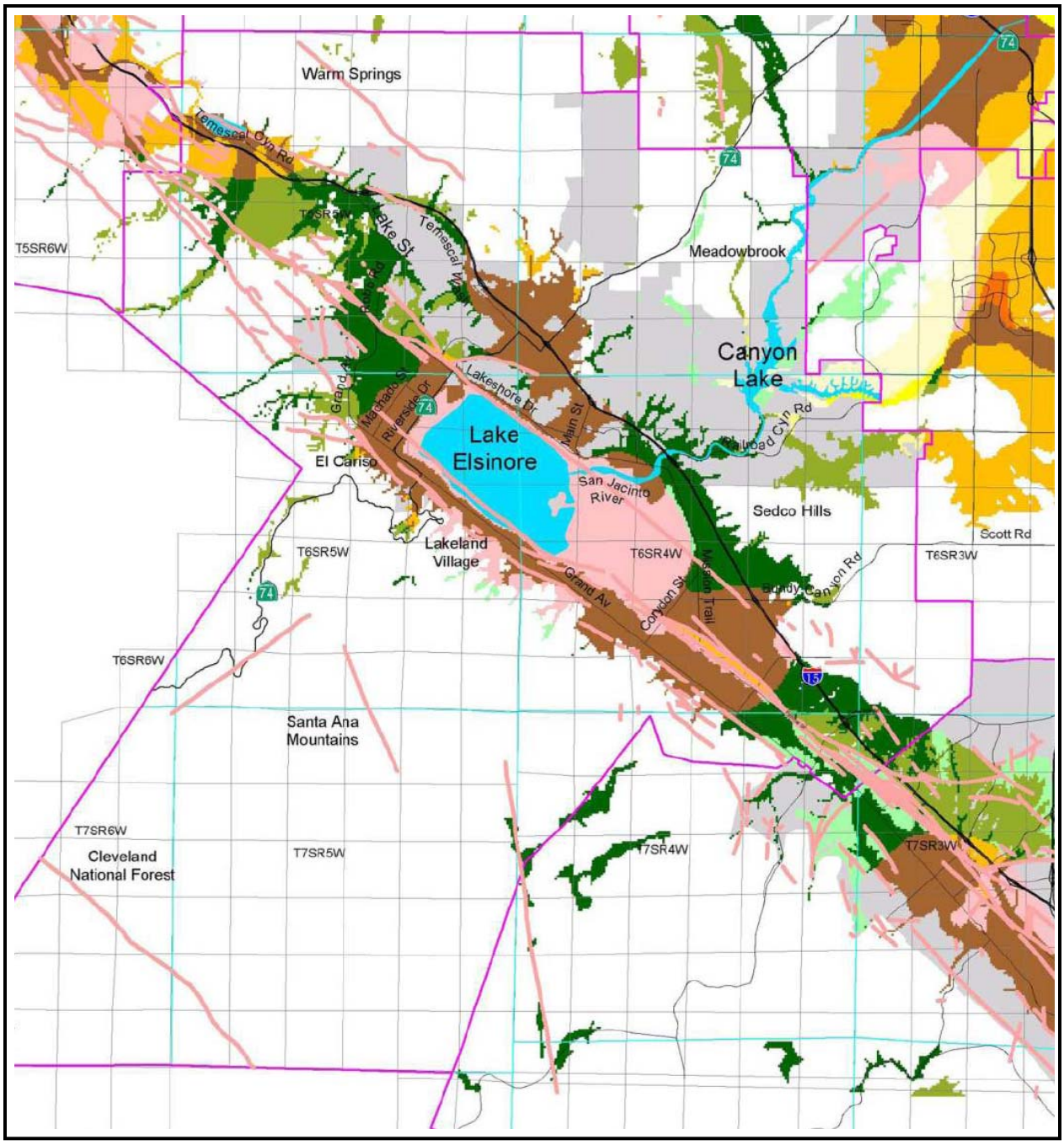


Figure 4.8.1-2. City of Lake Elsinore Geologic Formations
Source: City of Lake Elsinore



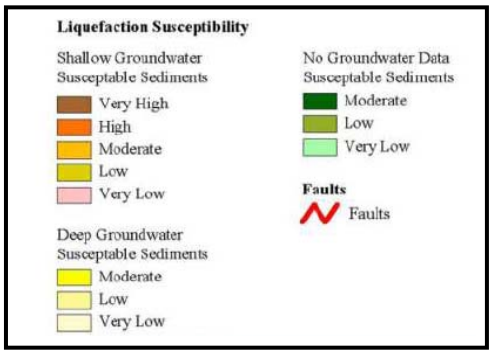


Figure 4.8.1-3. Seismic Hazards
Source: City of Lake Elsinore

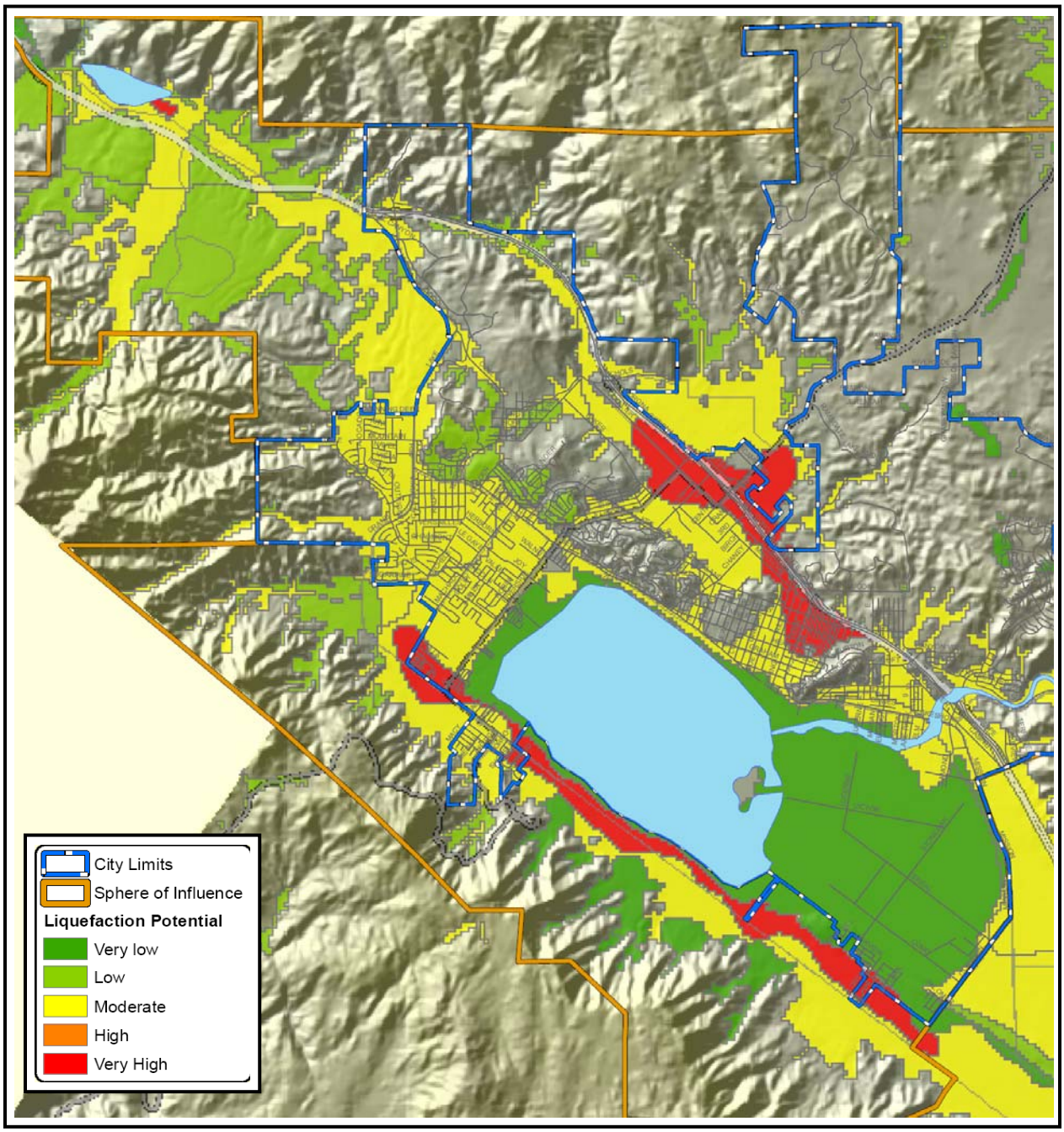


Figure 4.8.1-4. Liquefaction Susceptibility in the Lake Elsinore Area
Source: City of Lake Elsinore

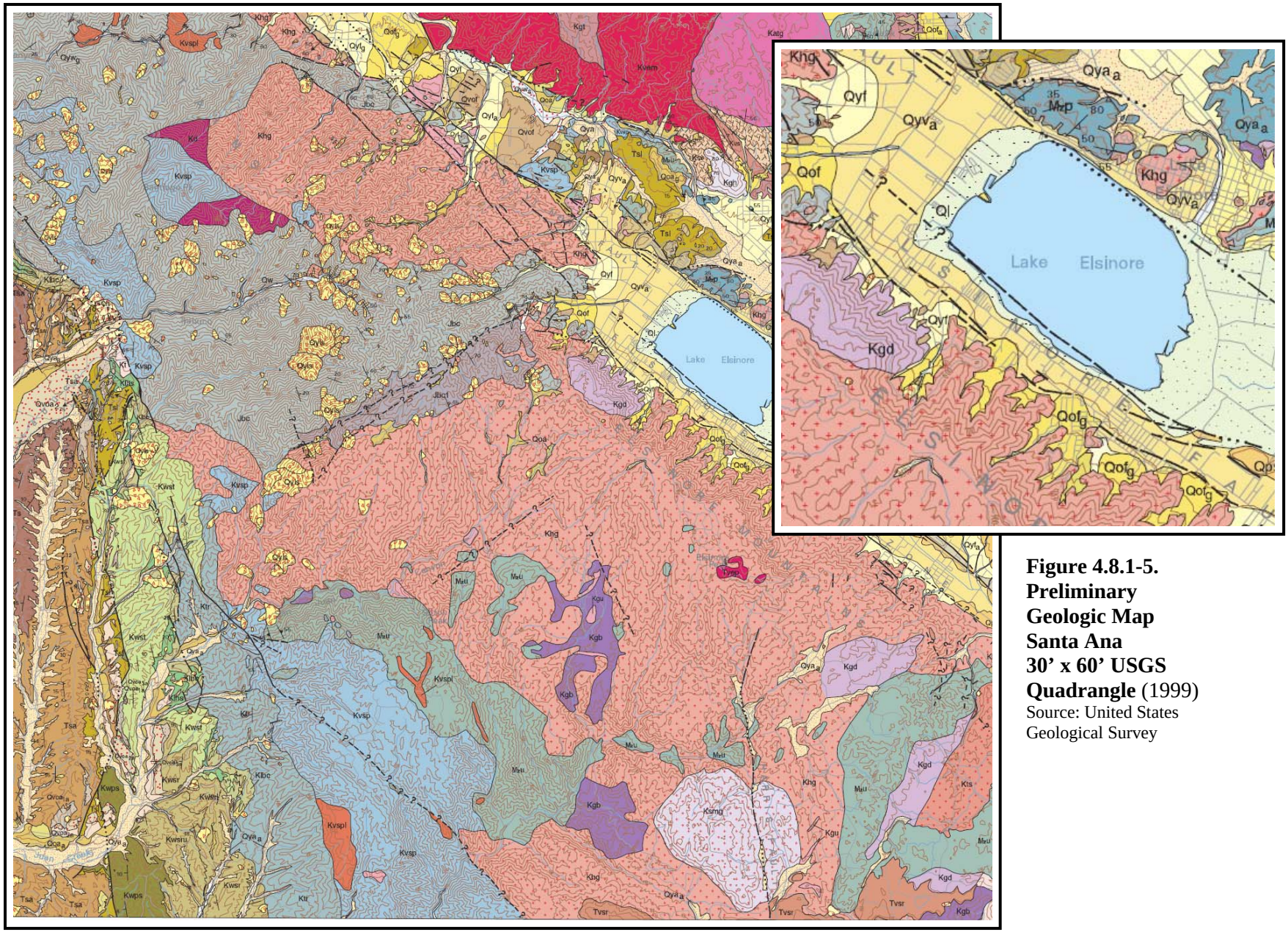


Figure 4.8.1-5. Preliminary Geologic Map Santa Ana 30' x 60' USGS Quadrangle (1999)
Source: United States Geological Survey

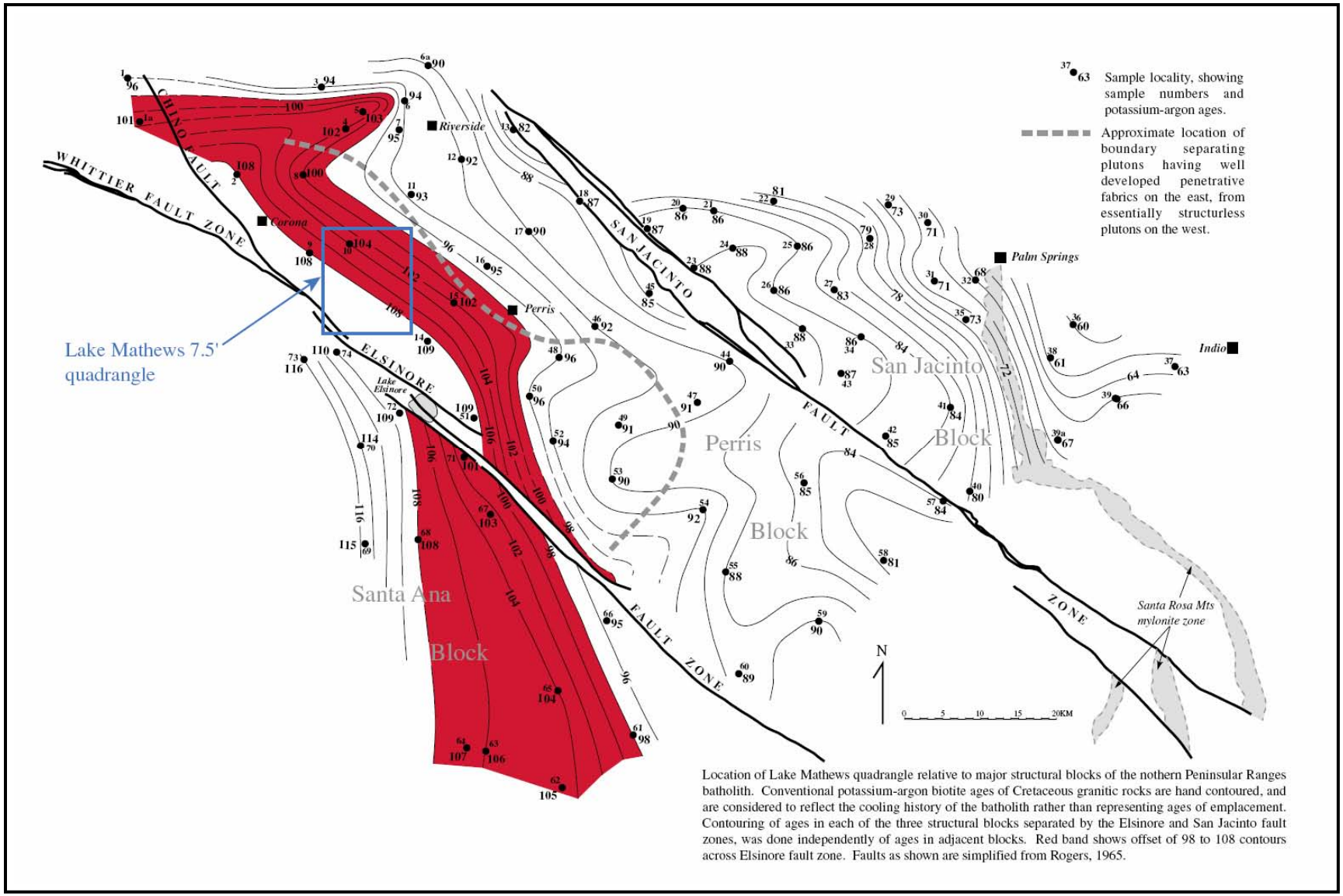


Figure 4.8.1-6. Major Structural Blocks of the Northern Peninsular Ranges Batholith
Source: United States Geological Survey

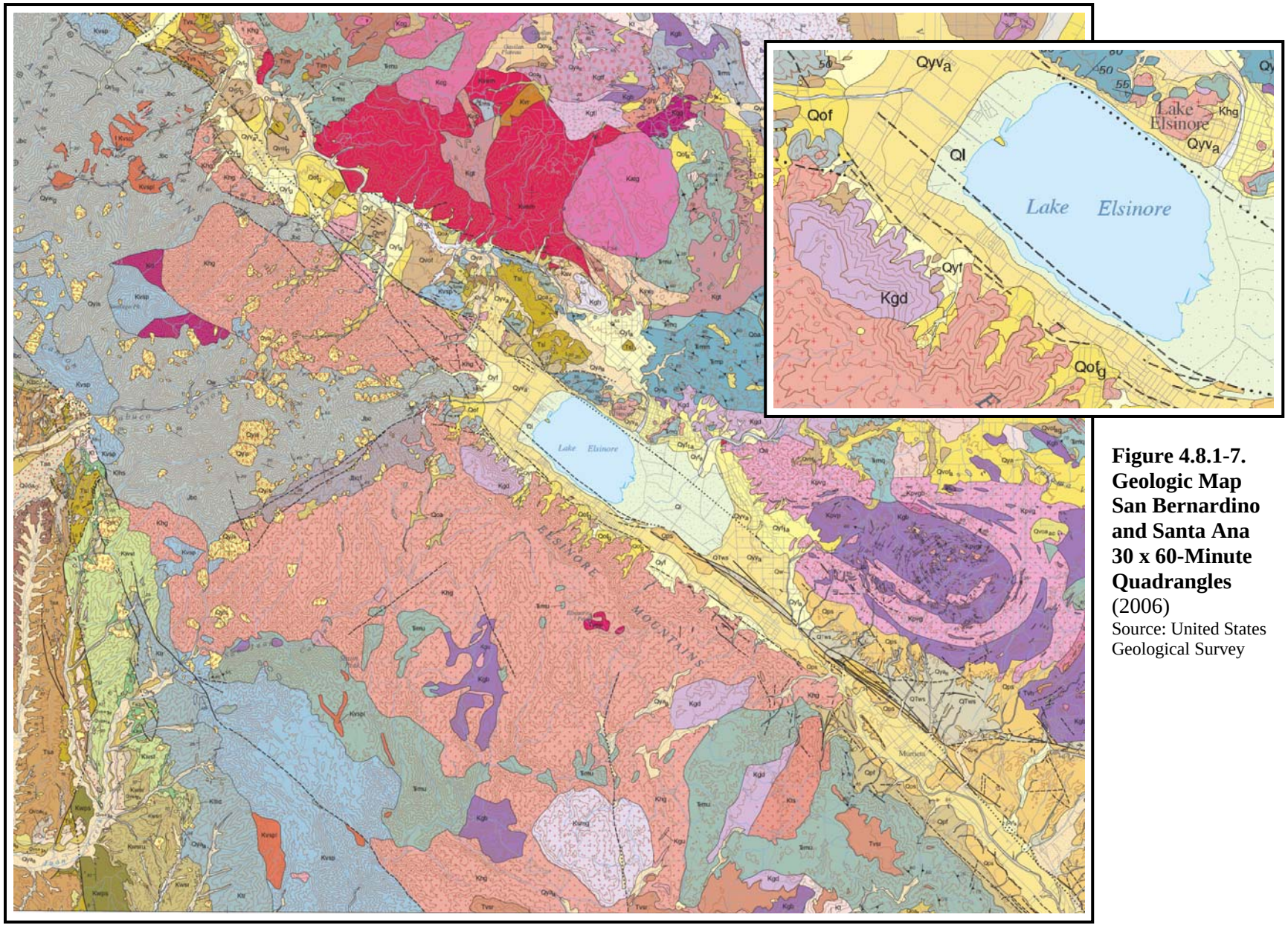


Figure 4.8.1-7. Geologic Map San Bernardino and Santa Ana 30 x 60-Minute Quadrangles (2006)
Source: United States Geological Survey

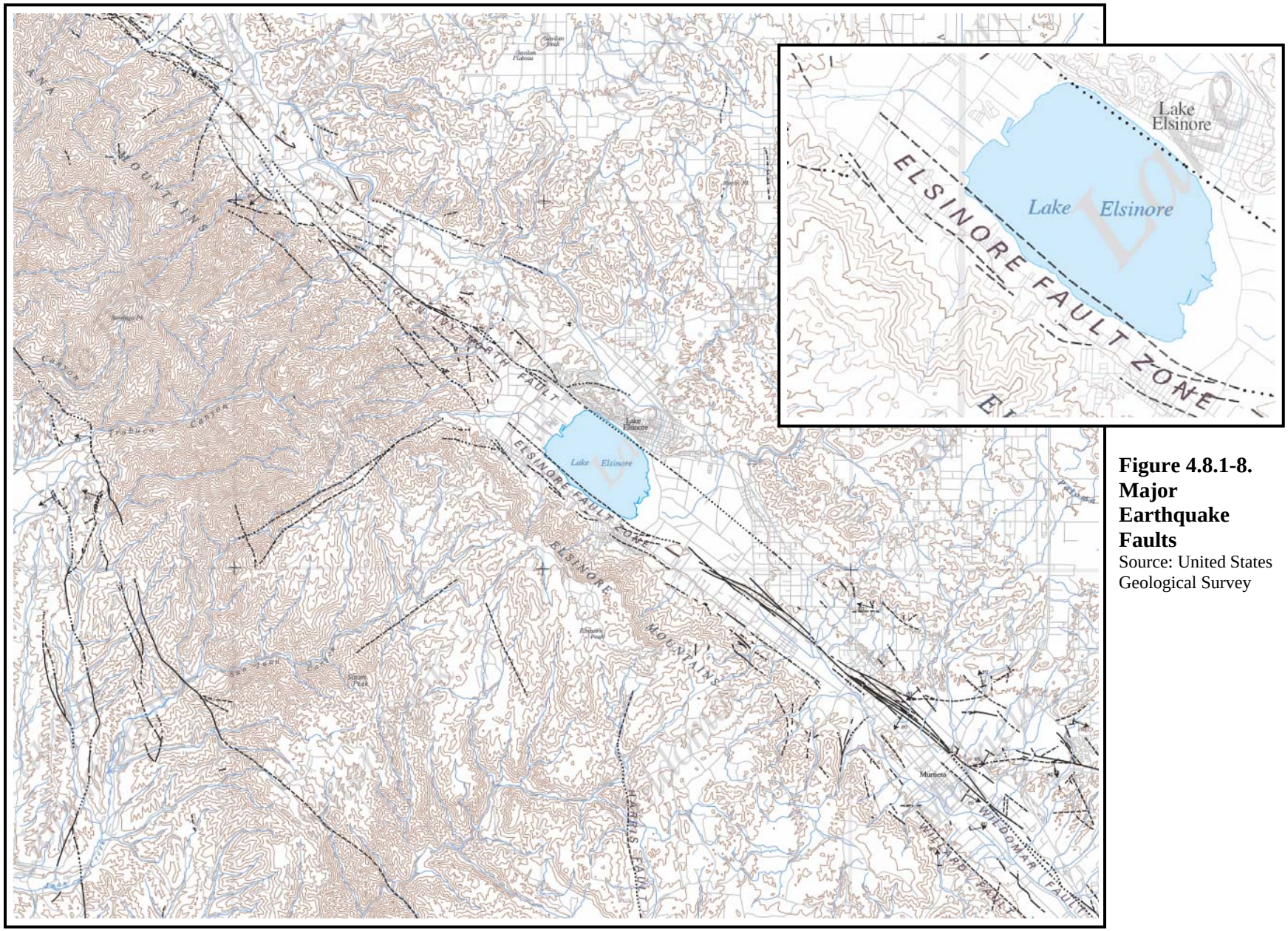
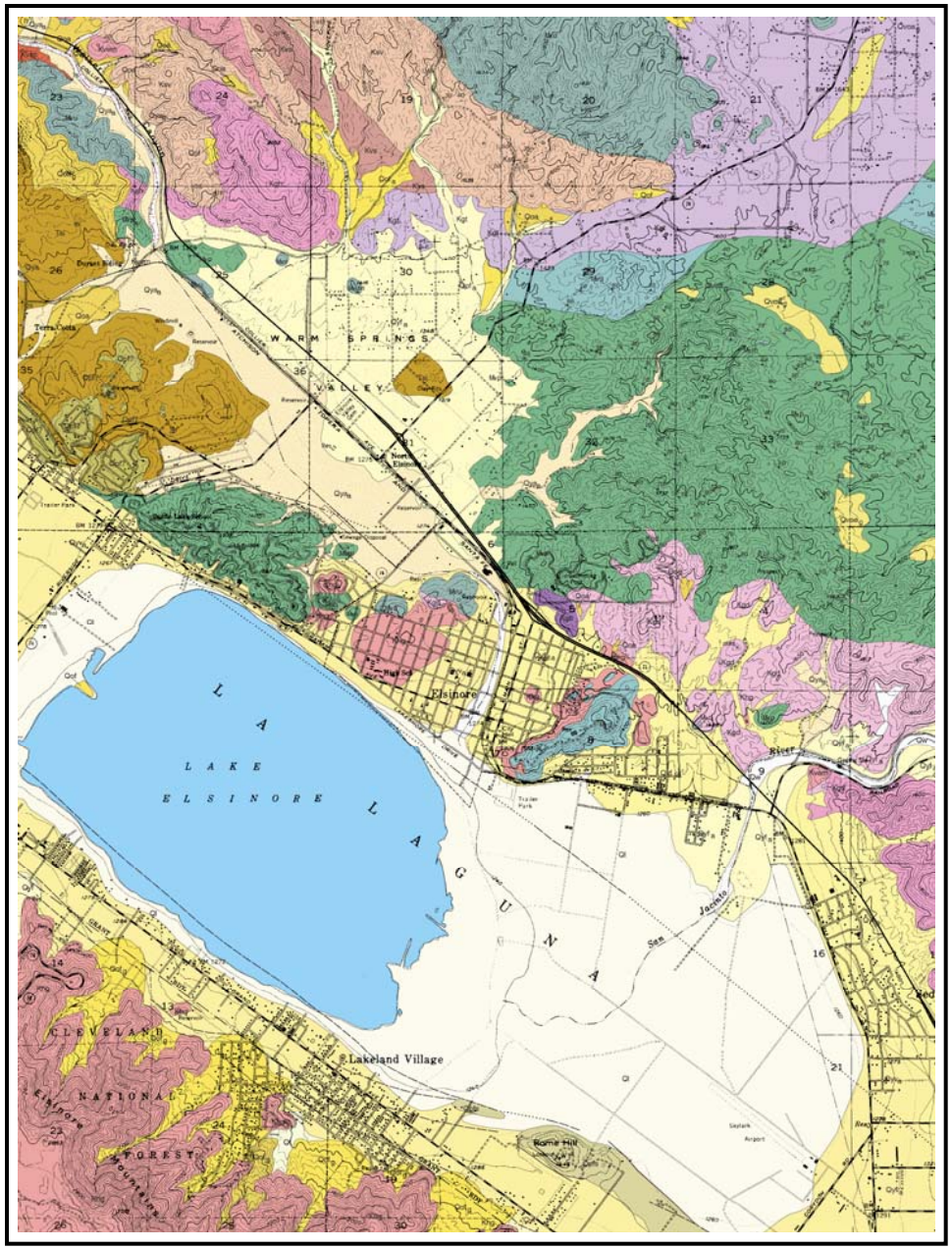


Figure 4.8.1-8. Major Earthquake Faults
Source: United States Geological Survey



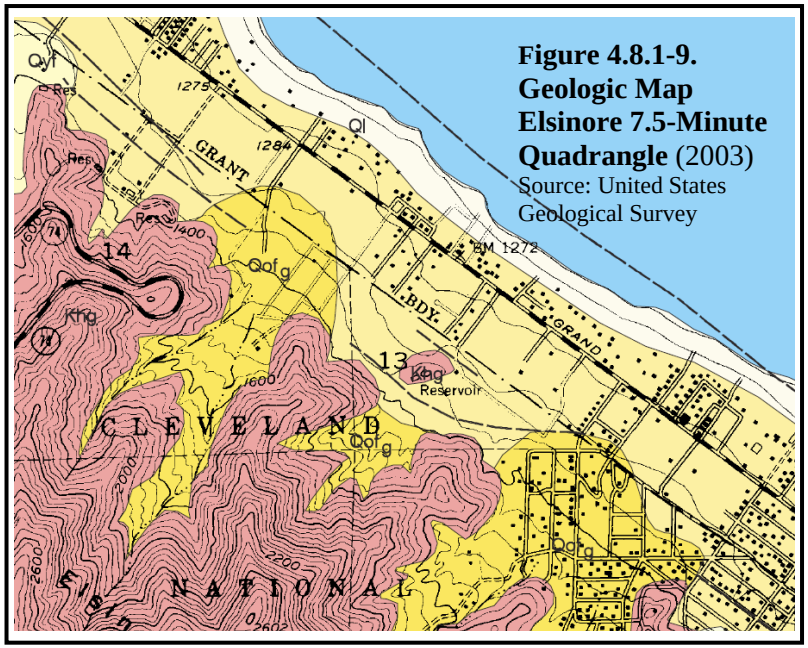


Figure 4.8.1-9. Geologic Map Elsinore 7.5-Minute Quadrangle (2003)
Source: United States Geological Survey

Geologic Summary

The Elsinore quadrangle is located in the northern part of the Peninsular Ranges Province and includes parts of two structural blocks, or structural subdivisions of the province (Fig. 1). The active Elsinore Fault Zone diagonally crosses the southwest corner of the quadrangle, and is a major element of the right-lateral strike-slip San Andreas Fault system. The Elsinore Fault Zone separates the Santa Ana Mountains block west of the fault zone from the Perris block to the east. Internally both blocks are relatively stable and within the quadrangle are characterized by the presence of widespread erosional surfaces of low relief.

Within the quadrangle the Santa Ana Mountains block is underlain by undifferentiated granitic rocks of the Cretaceous Peninsular Ranges batholith, but to the west, includes widespread pre-batholithic Mesozoic rocks.

The Perris block is underlain by a combination of batholithic and prebatholithic rocks, the latter consisting of metasedimentary rocks of low metamorphic grade; sub-greenschist grade. The most abundant lithology is phyllite but includes locally thick sections of impure quartzite. Minor sills, dikes, and small elongate plutons of fine-grained hornblende gabbro intrude the phyllite. Thin layers of tremolite-bearing marble occur locally. Also local are thin layers of manganese-bearing rocks. Both rhodonite and manganese oxides occur in these layers. The phyllite has a regular northwest strike throughout the main body of metamorphic rock giving rise to a homoclinal section over 25,000 feet thick. The layering-schistocity of these rocks is transposed bedding and is not stratigraphic thickness.

In the northwest corner of the quadrangle is a series of Cretaceous volcanic and associated sedimentary rocks in the northwest corner of the quadrangle contain widespread primary sedimentary structures and appear to post date the metamorphism of the phyllite. The volcanic rocks are part of the Estelle Mountain volcanics of primarily rhyolitic composition. The sedimentary rocks are well indurated, perhaps incipiently metamorphosed, siliceous rocks containing local conglomerate beds.

Parts of three plutonic complexes are included within the quadrangle, all part of the composite Peninsular Ranges batholith. In the southeast corner is the northwest part of the Paloma Valley ring complex, which is elliptical in plan and consists of an older ring-dike and two subsidiary short-arced dikes that were emplaced into gabbro by magmatic stoping. Small to large stoped blocks of gabbro are common within the ring-dikes. A younger ring-set, made up of hundreds of thin pegmatite dikes, occur largely within the central part of the complex. Only the northern part of the older ring dike occurs within the quadrangle. Stoped gabbro masses occur near the southeast margin of the quadrangle.

In the northern part of the quadrangle is the southern part of the composite Gavilan ring complex of mostly tonalite composition. Hypersthene, although not usual in tonalite in the batholith, is a characteristic mineral of most of the rock of this complex. The Gavilan ring complex is a shallow intrusive that appears to be tilted up to the northeast. Fabric of the rocks changes in texture from hypauthomorphic-granular in the east to semiporphyritic in the west. The main part of the complex appears to have been emplaced by magmatic stoping. Several inactive gold mines, Goodhope, Gavilan, and Santa Rosa, are located within the complex.

Within the Gavilan ring complex is the south-half of the Arroyo del Toro pluton. This near circular-in-plan pluton consists of massive-textured granodiorite that is essentially devoid of inclusions, and at one time was quarried for building stone.

The Elsinore Fault Zone forms a complex series of pull-apart basins. The largest and most pronounced of these pull-apart basins forms a flat-floored closed depression, La Laguna, which is partly filled by Lake Elsinore. This basin forms the terminus for the San Jacinto River. During excessively wet periods the La Laguna fills and the overflow passes through Warm Springs Valley into Temescal Wash which joins the Santa Ana River at Corona. La Laguna, bounded by active faults, is flanked by both Pleistocene and Holocene alluvial fans emanating from both the Perris block and the Santa Ana Mountains. North of La Laguna are exposures of the Paleocene Silverado Formation. Clay beds of the Silverado Formation have been an important source of clay. Overlying the Silverado Formation are discontinuous exposures of conglomeratic younger Tertiary sedimentary rocks that are tentatively correlated with the Pauba Formation.

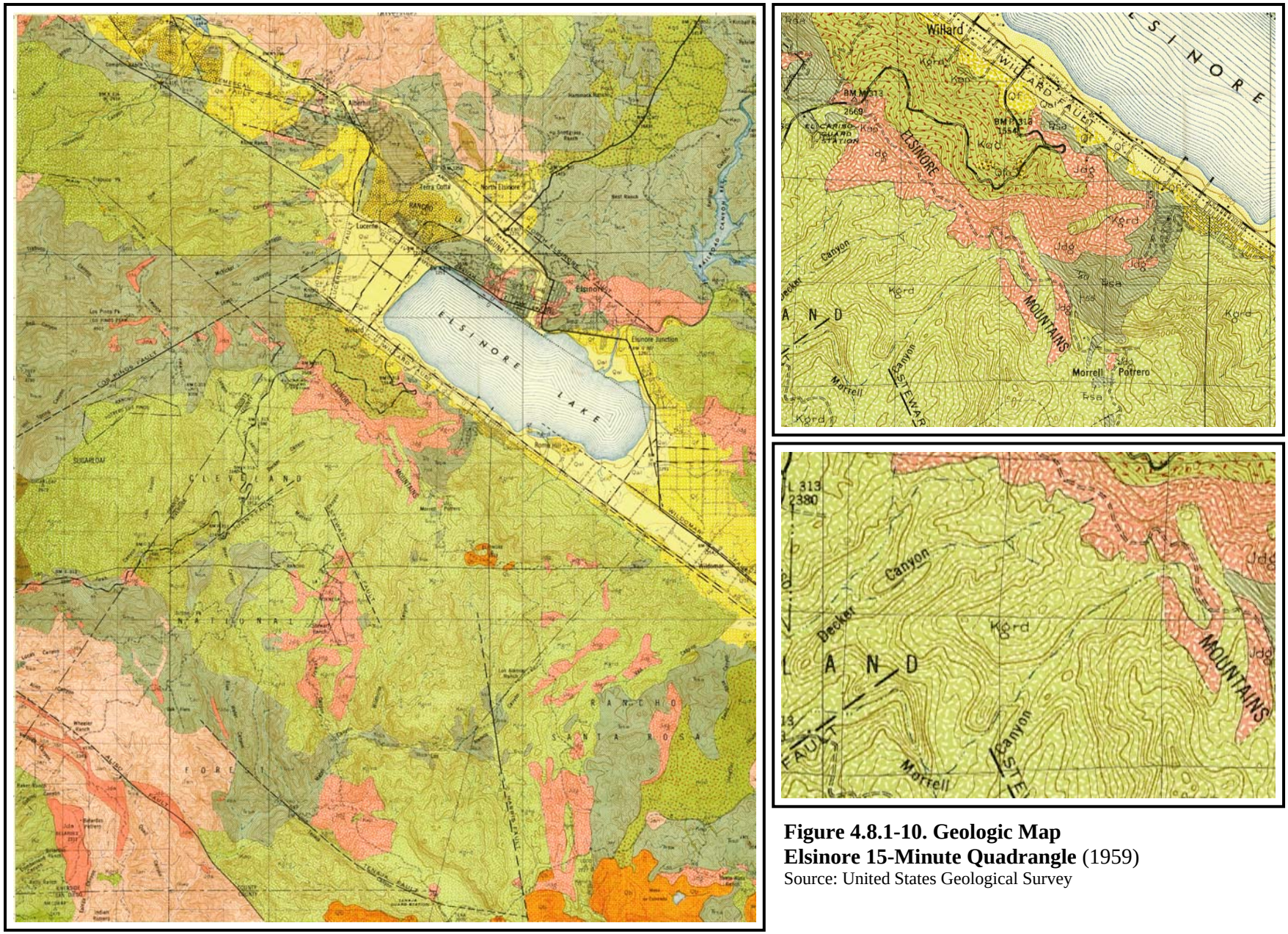


Figure 4.8.1-10. Geologic Map
Elsinore 15-Minute Quadrangle (1959)
Source: United States Geological Survey

Figure 4.8.1-11. Geologic Map
Fallbrook 7.5-Minute Quadrangle (1 of 2)
Source: United States Geological Survey (2000)

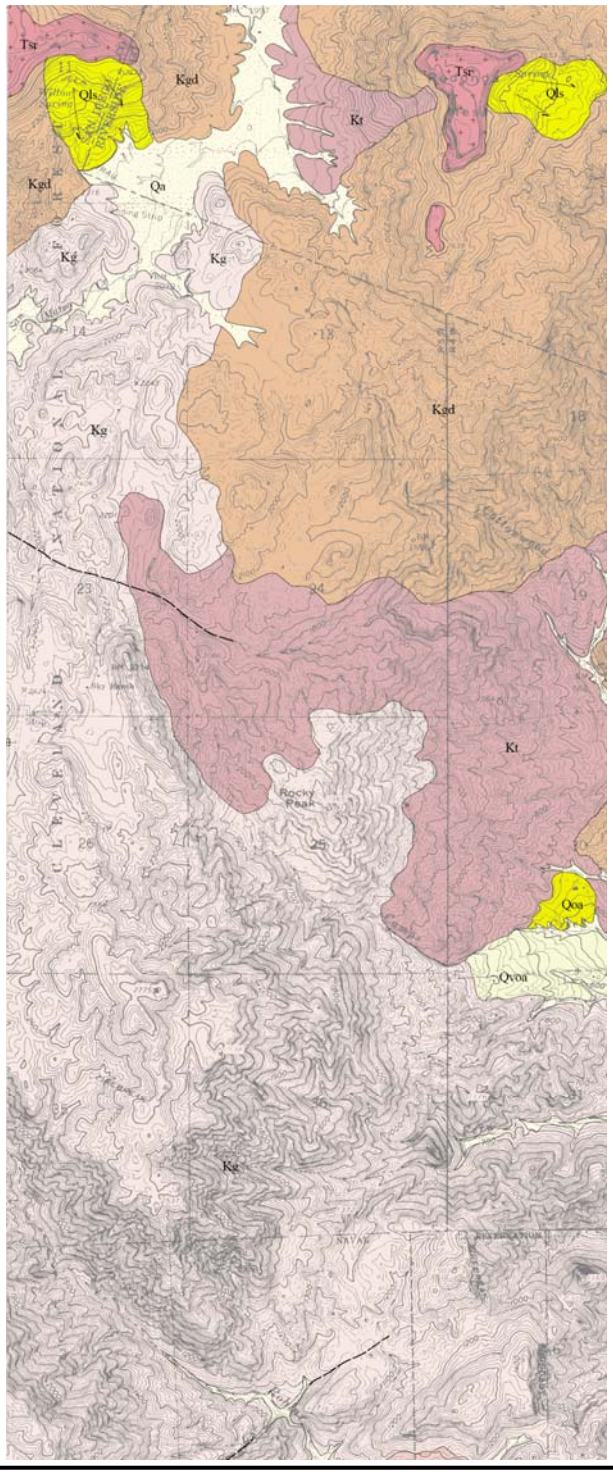
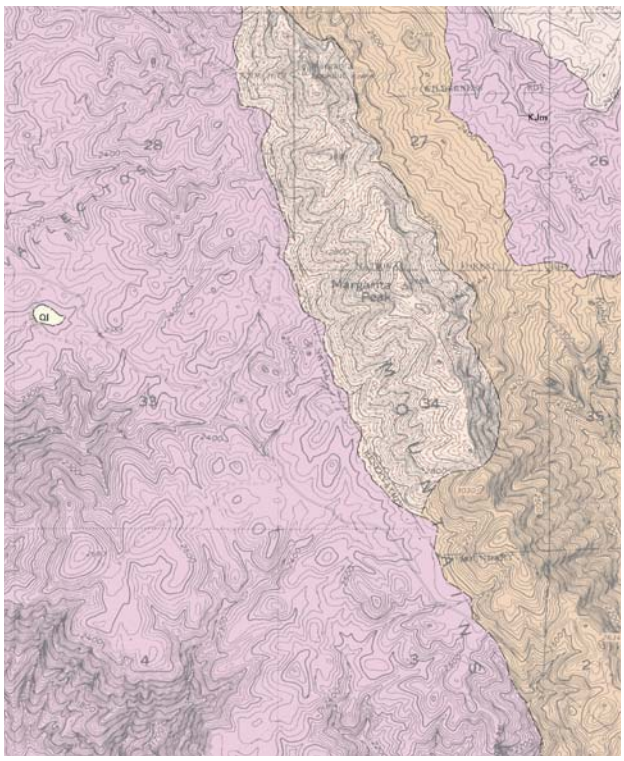


Figure 4.8.1-11. Geologic Map
Margarita Peak 7.5-Minute Quadrangle (2 of 2)
Source: United States Geological Survey (2001)



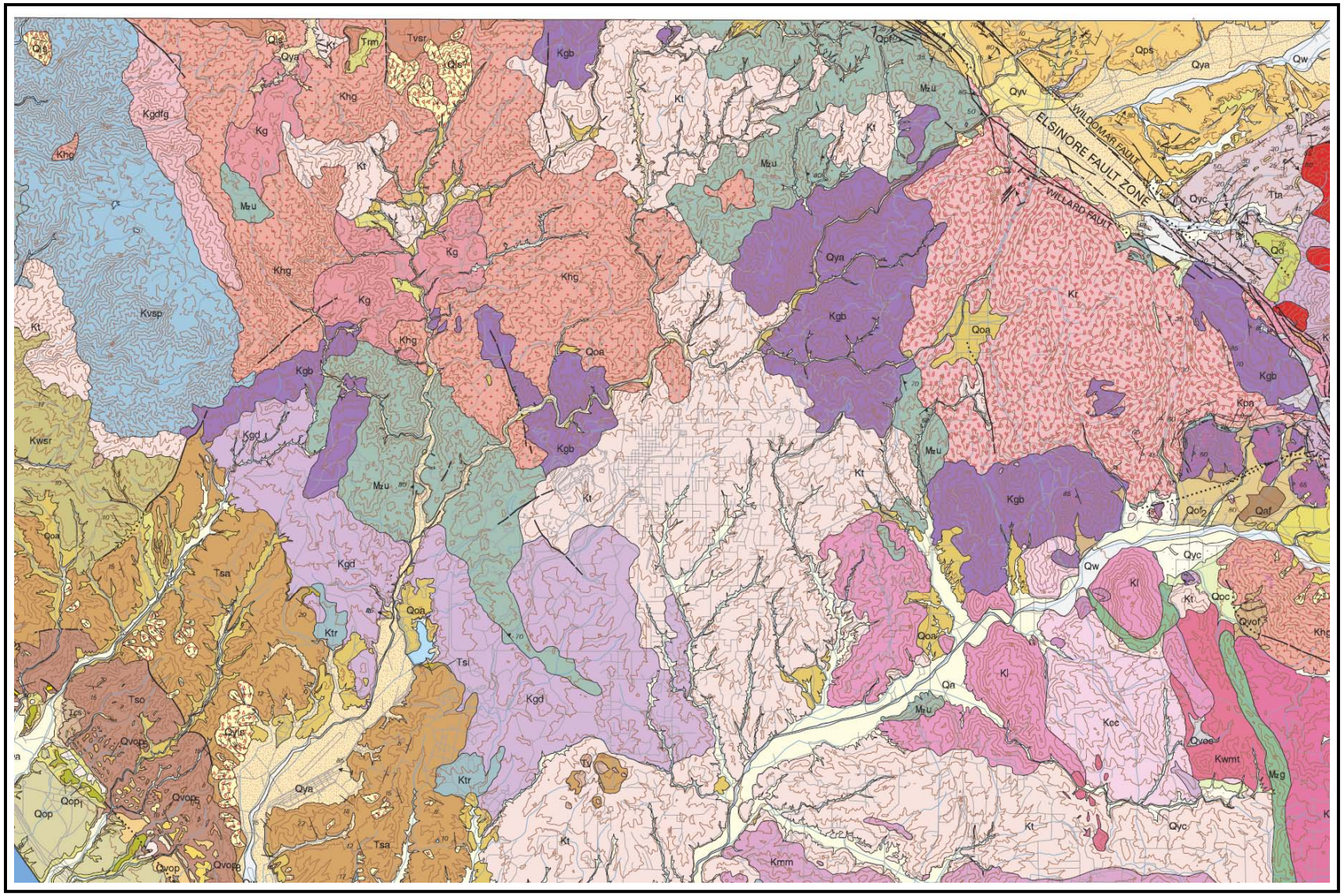
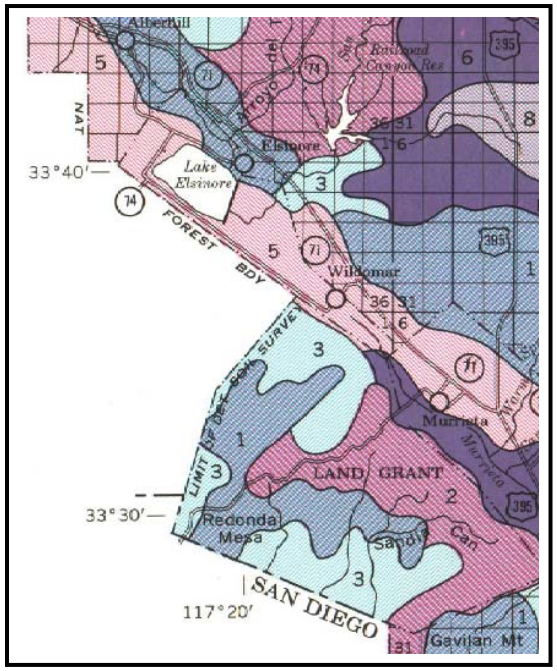


Figure 4.8.1-12. Geologic Map Oceanside 30x60-Minute Quadrangle
Source: United States Geological Survey



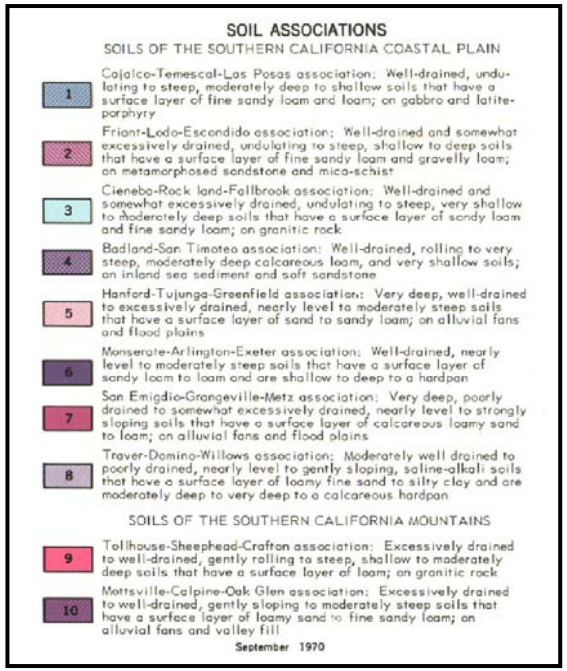
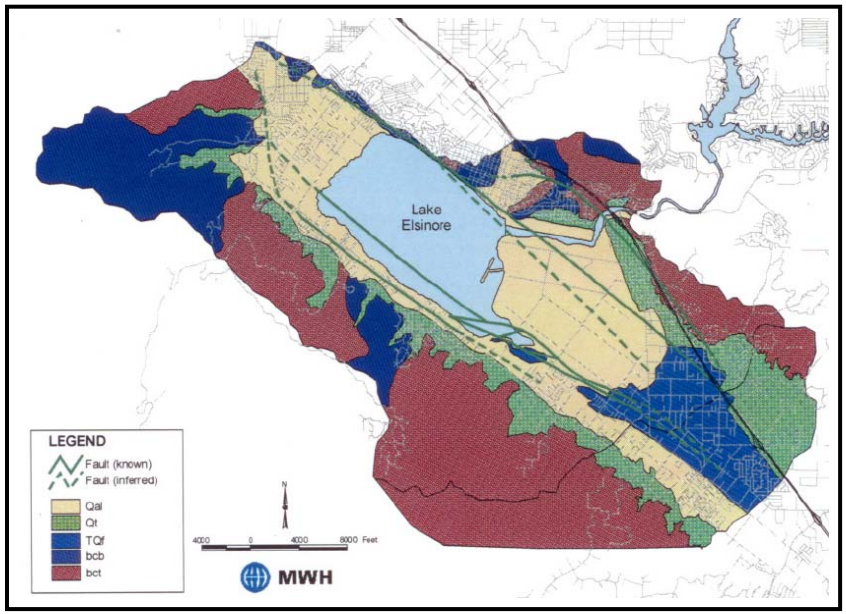


Figure 4.8.1-13 (Upper Left)**.**
General Soil Map
Western Riverside County (1 of 2)
Source: United States Department of Agriculture

Figure 4.8.1-13 (Lower Left)**.**
General Soil Map
Western Riverside County (2 of 2)
Source: United States Department of Agriculture



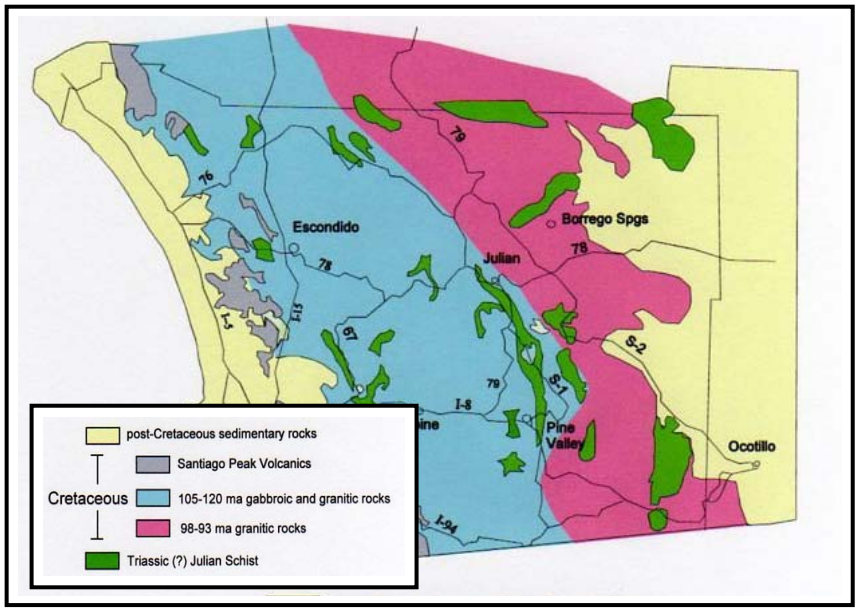


Figure 4.8.1-13 (Lower Right)**.**
General Soil Map
Northern San Diego County)
Source: United States Department of Agriculture

Figure 4.8.1-14. Soil Survey Map – Upper Reservoir Sites
Source: Soil Conservation Service (1978)

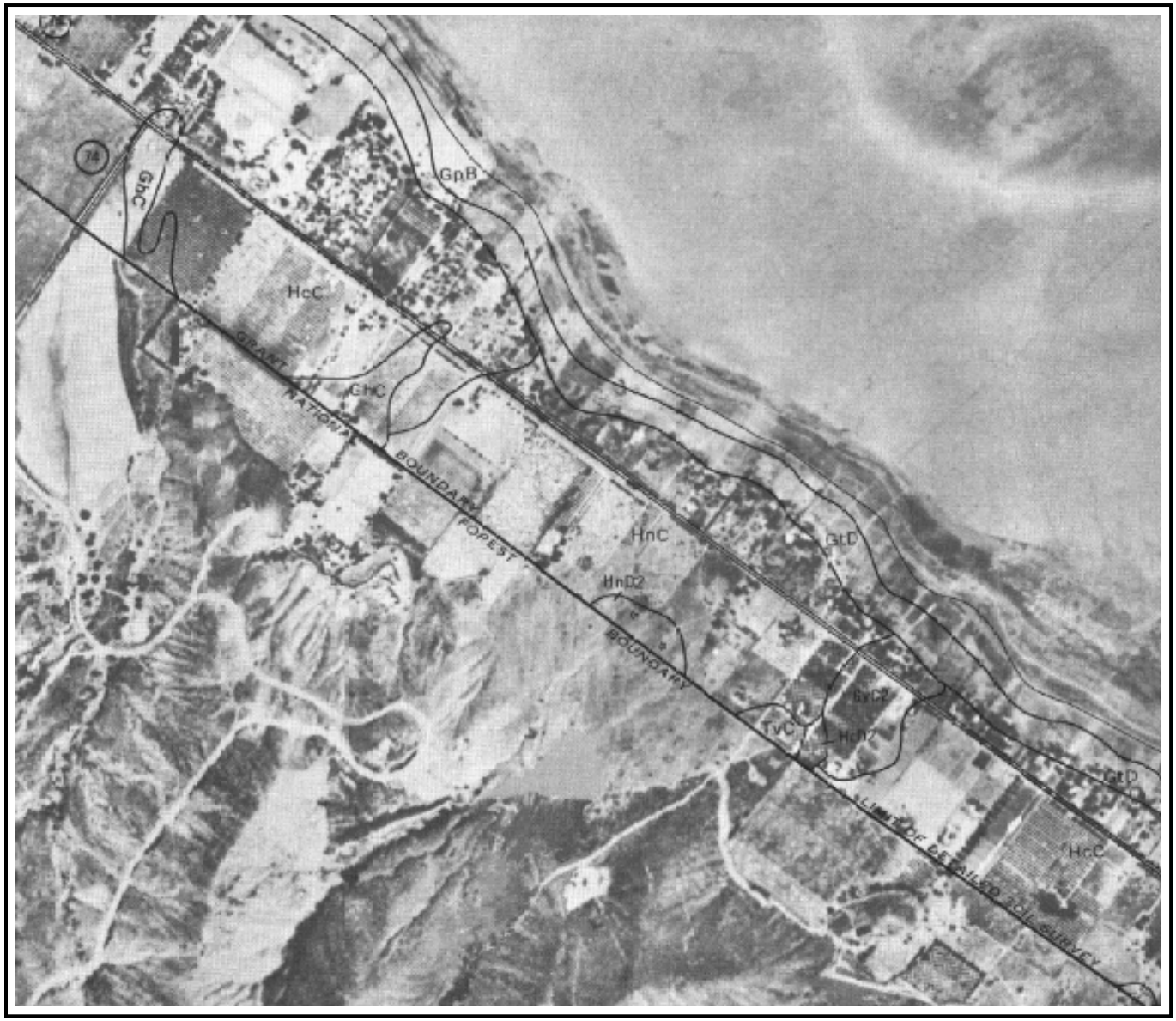


Figure 4.8.1-15. Soil Survey Map – Santa Rosa Substation and LEAPS Powerhouse Sites
Source: Soil Conservation Service (1971)

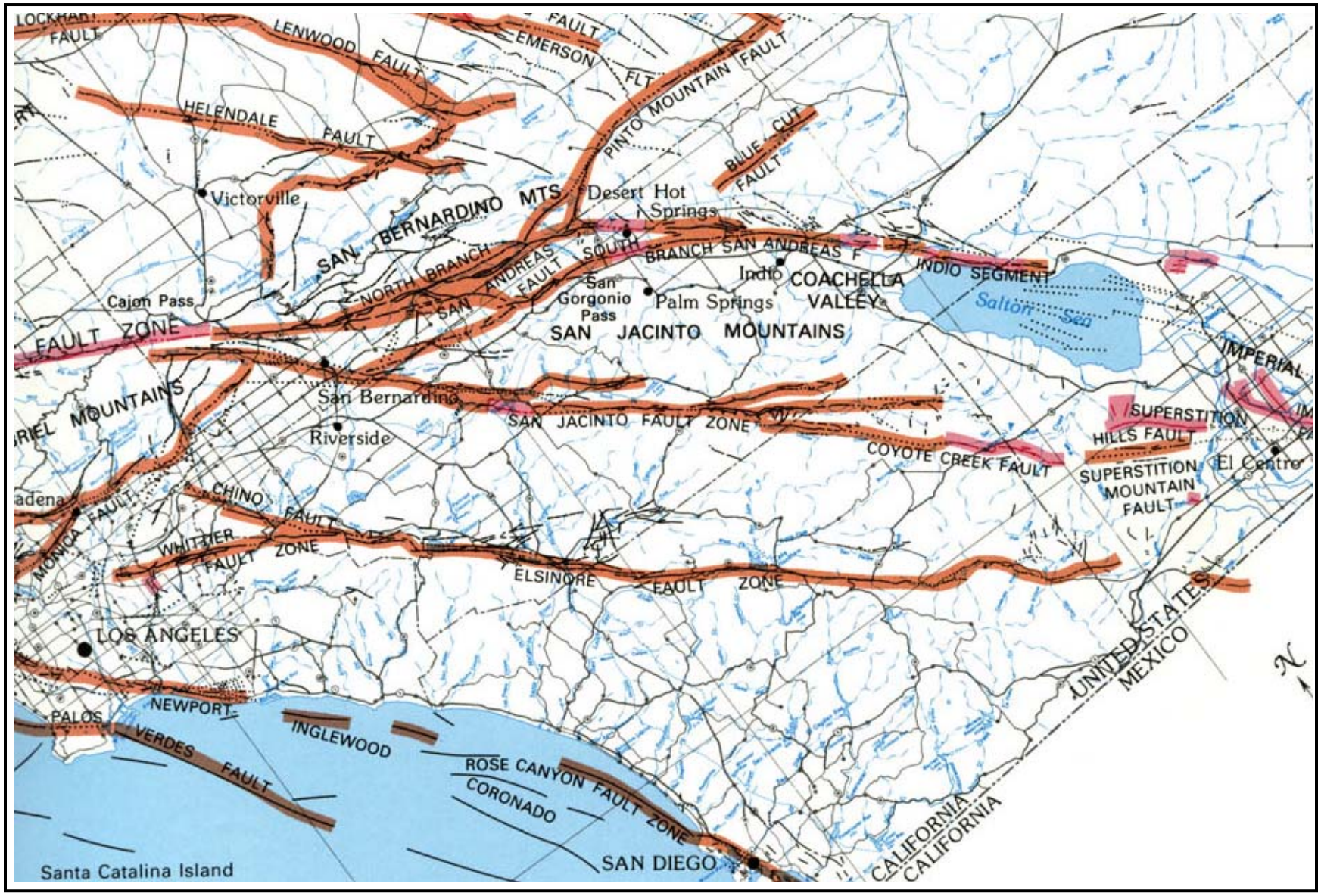


Figure 4.8.1-16. Portion of Fault Map of California
Source: California Division of Mines and Geology (1975)

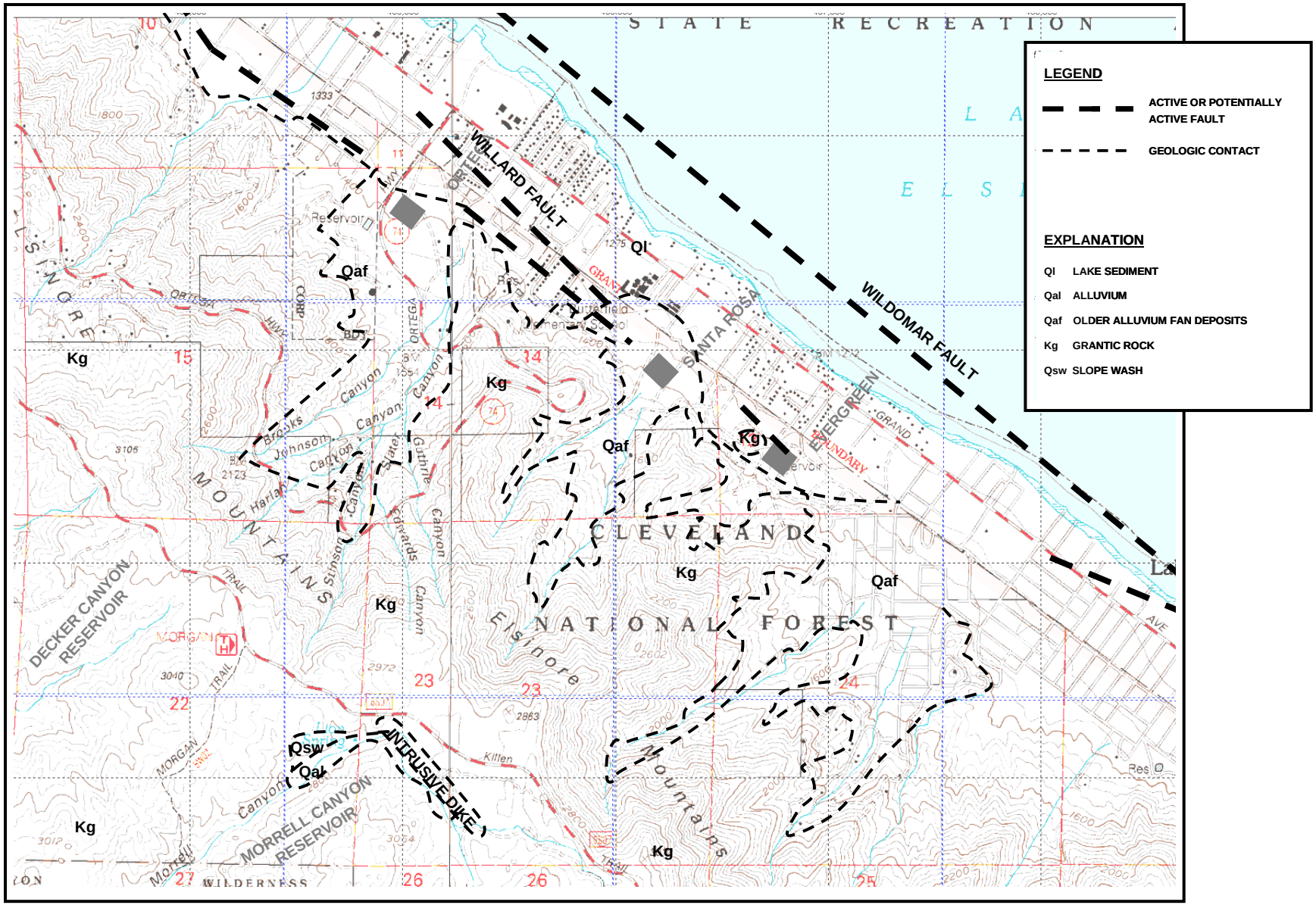


Figure 4.8.1-17. Willard and Wildomar Faults
Source: GENTERRA Consultants, Inc.

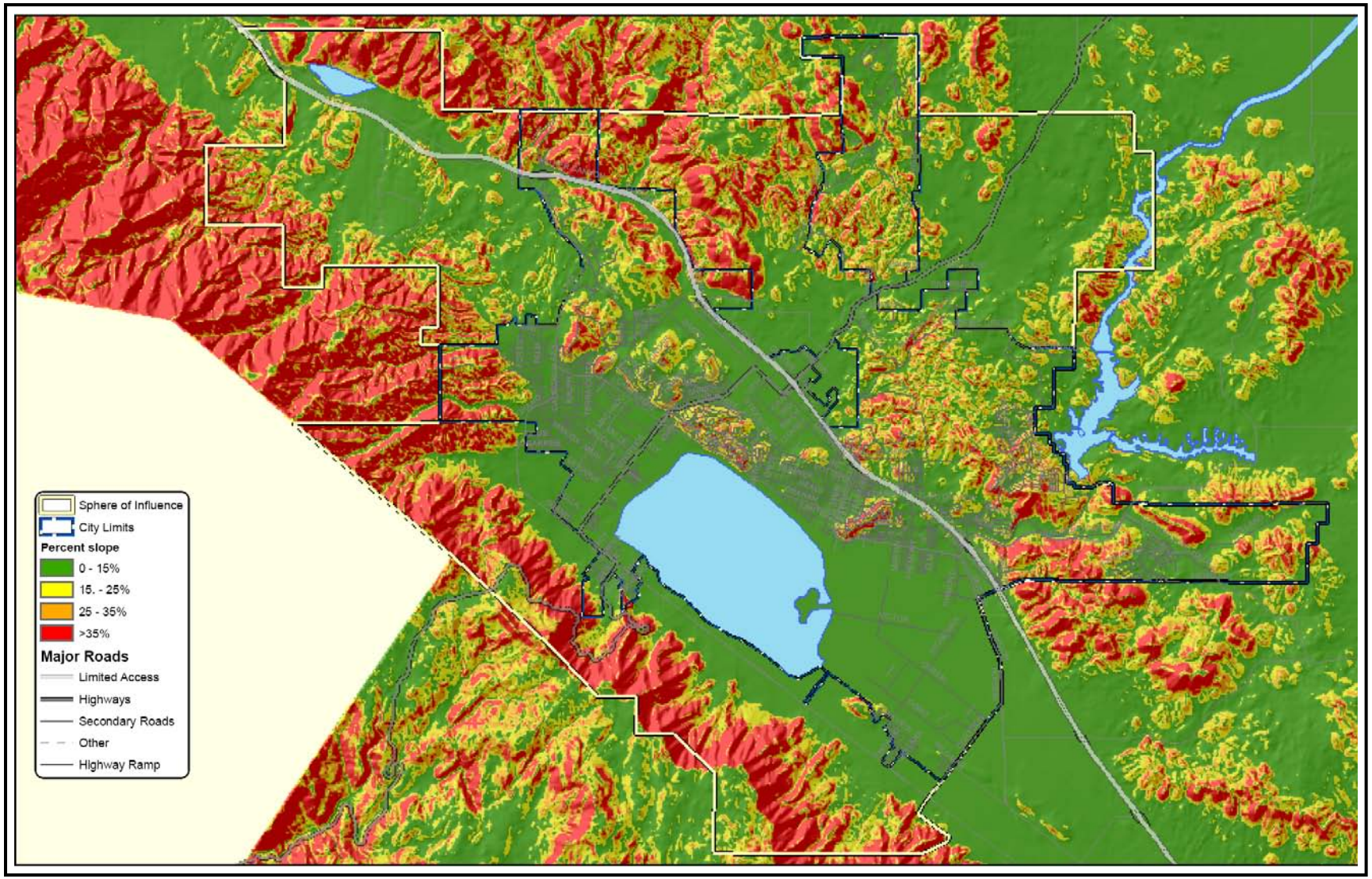


Figure 4.8.1-18. Percent Slope Map
Source: City of Lake Elsinore

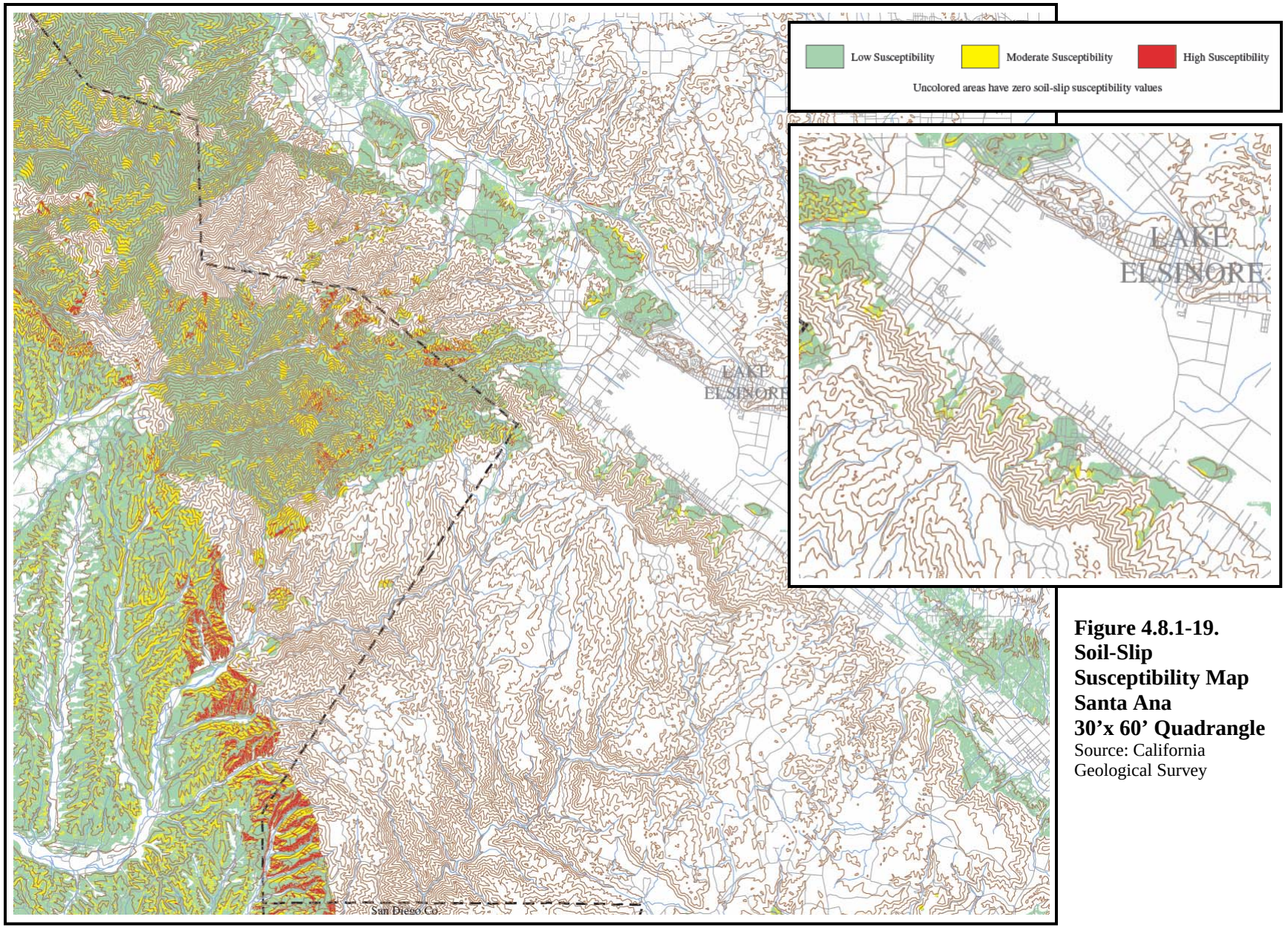


Figure 4.8.1-19.
Soil-Slip Susceptibility Map
Santa Ana
30'x 60' Quadrangle
Source: California Geological Survey

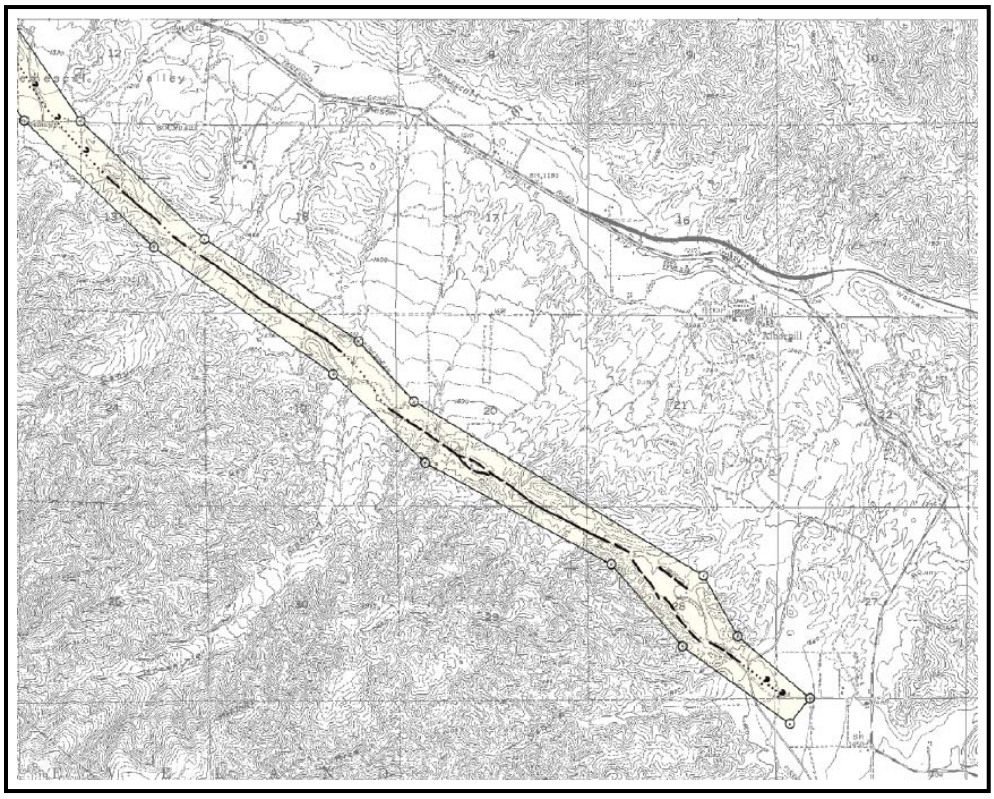


Figure 4.8.2-1. Earthquake Fault Zones - Alberhill Quadrangle (1 of 2)
Source: California Department of Conservation

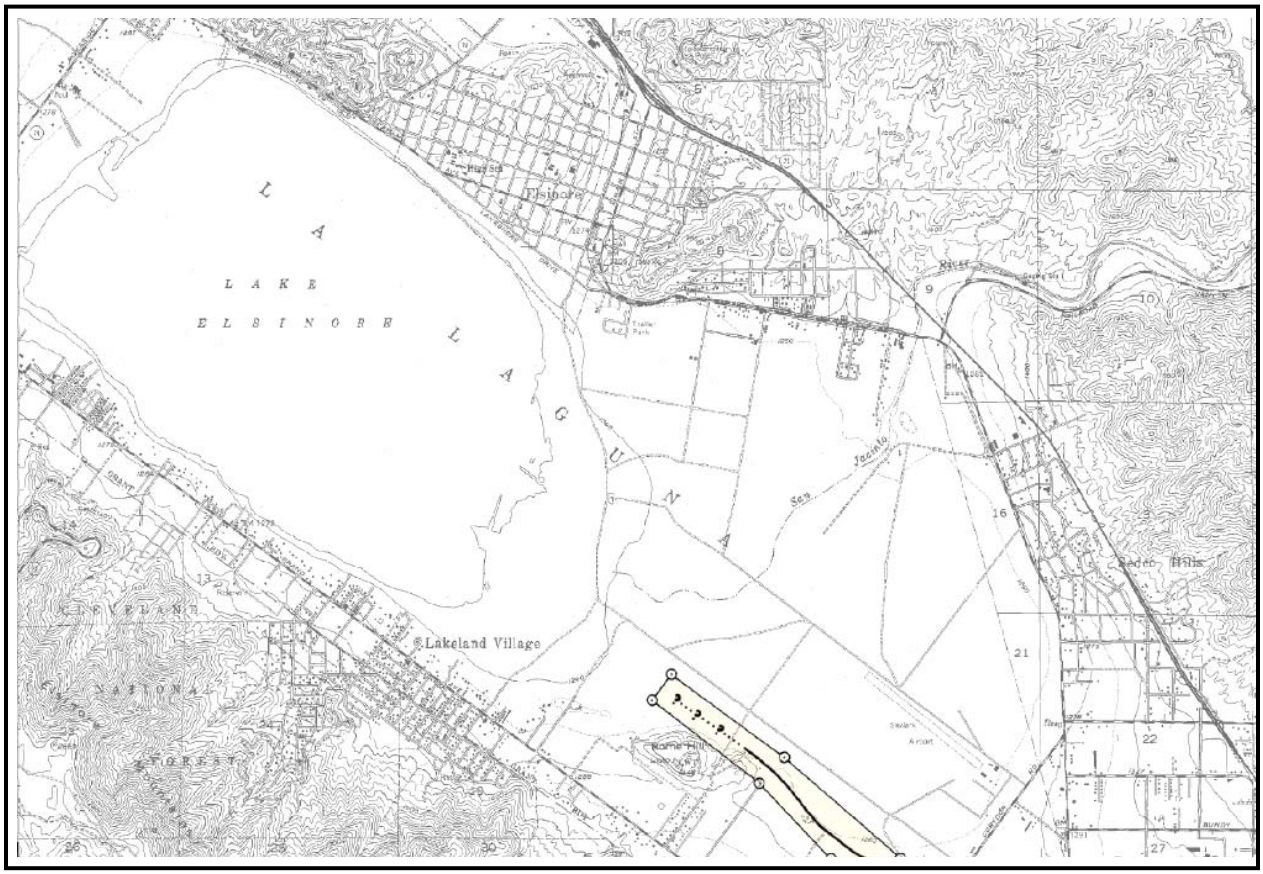


Figure 4.8.2-1. Earthquake Fault Zones - Alberhill Quadrangle (2 of 2)
Source: California Department of Conservation

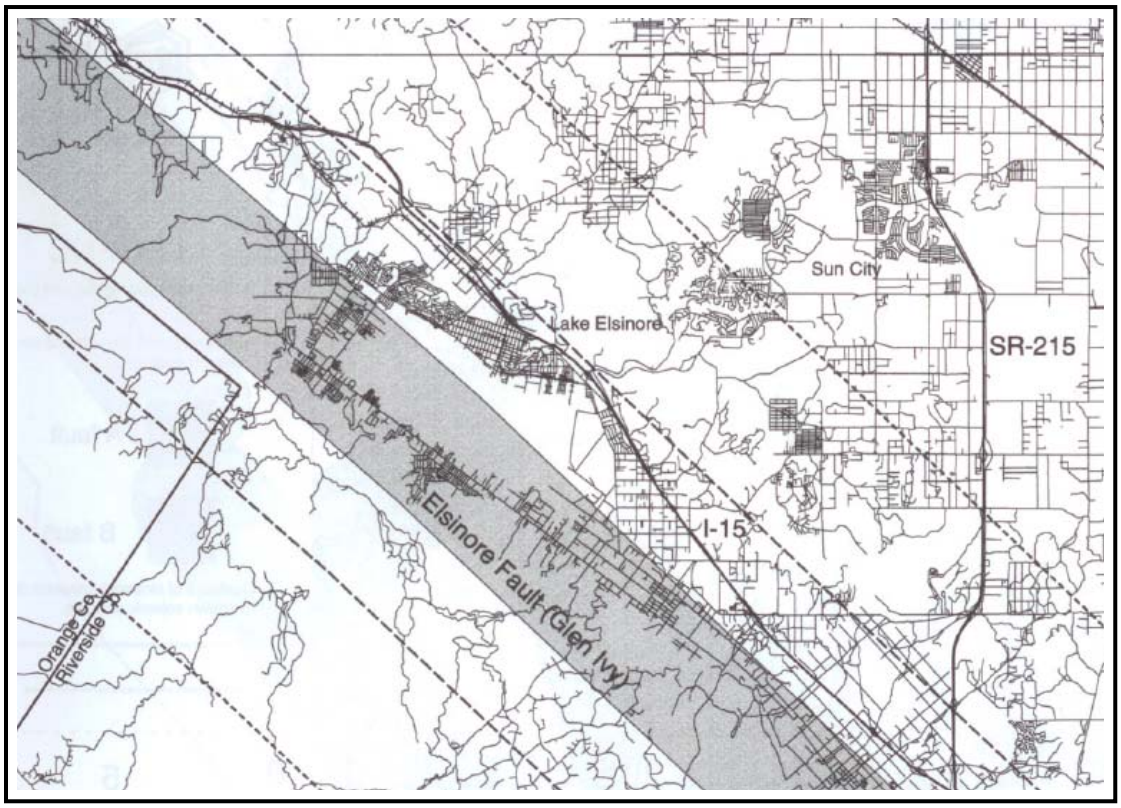


Figure 4.8.2-2. Elsinore Fault (Glen Ivy) (1 of 2)
Source: International Conference of Building Officials

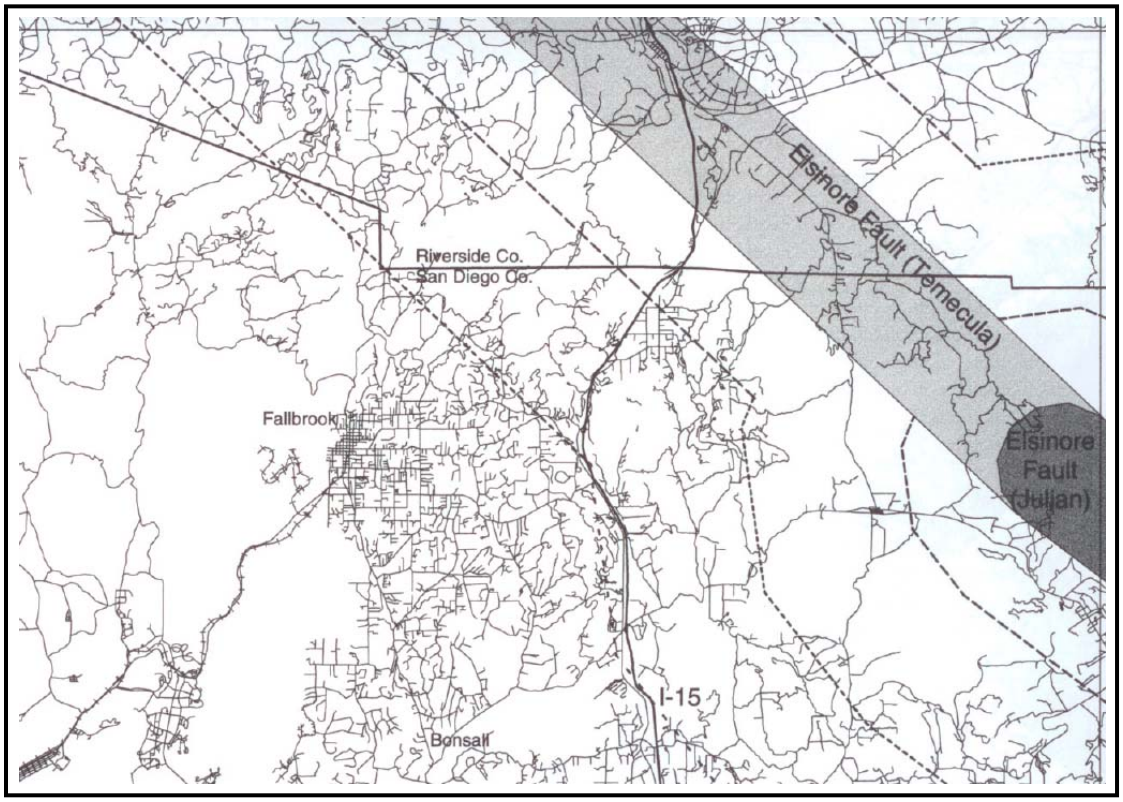


Figure 4.8.2-2. Elsinore Fault (Temecula) (2 of 2)
Source: International Conference of Building Officials

As specified under Section 2696(a) therein, the "State Geologist shall compile maps identifying seismic hazard zones, consistent with the requirements of Section 2695. The maps shall be compiled in accordance with a time schedule developed by the director and based upon the provisions of Section 2695 and the level of funding available to implement this chapter."

The SMGB's "Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication No. 117"[1] provides guidelines for evaluating and mitigating seismic hazards (other than surface fault rupture) and for recommending mitigation measures as required under Section 2695(a) of the PRC.[2] As specified therein: "The fact that a site lies outside a mapped zone of required investigation does not necessarily mean that the site is free from seismic or other geologic hazards, nor does it preclude lead agencies from adopting regulations or procedures that require site-specific soil and/or geologic investigations and mitigation of seismic or other geologic hazards."[3]

With the exception of area encompassing SDG&E's existing Talega Substation, no SHMA maps have yet been prepared for those areas in which the following Project facilities are located: Lake Switchyard, Santa Rosa Substation, LEAPS Powerhouse, Case Springs Substation, lower reservoir (Lake Elsinore), upper reservoir (Decker Canyon Reservoir), Lake-Case Springs 500-kV transmission line, SDG&E's Eastern (Case Springs-Escondido) 230-kV transmission line, and SDG&E's 69-kV subtransmission line. SDG&E's existing Talega Substation is located within the area illustrated on the USGS 7.5-Minute San Clemente Quadrangle (released June 2, 2002).[4] Although located in close proximity to a liquefaction hazard zone,[5] no hazard zones have been identified which would directly impact the Talega Substation facility.

Following the 1971 San Fernando earthquake, the State Legislature passed the Alquist-Priolo Earthquake Fault Zoning Act (APEFZA), formerly the Alquist-Priolo Special Studies Zone Act, codified in Section 2621 et seq. in Chapter 7.5 of Division 2 of the PRC. The APEFZA provides "policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults."[6] An "active fault" is one along which surface displacement has occurred within Holocene time (during the past 11,400 years).

The purpose of the APEFZA is to regulate land development near active faults in an effort to mitigate the hazard of surface fault rupture. The law requires the State Geologist

[1]/ State Mining and Geology Board, Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication No. 117, March 13, 1997.

[2]/ As defined in Section 2693(c) of the PRC, "mitigation" means those measures that are consistent with established practice and that will reduce seismic risk to acceptable levels." As further defined in Section 3721(a) therein, "acceptable level" means that level that provides reasonable protection of the public safety, though it does not necessarily ensure continued structural integrity and functionality of the project."

[3]/ Op. Cit., Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication No. 117, p. 15.

[4]/ California Department of Conservation, Seismic Hazard Zone Report for the San Clemente 7.5-Minute Quadrangle, Orange County, California, Seismic Hazard Zone Report 062, 2002.

[5]/ Defined as "[a]reas where historic occurrence of liquefaction, or local geological, geotechnical and ground-water conditions indicated a potential for permanent ground displacement such that mitigation as defined in Public Resources Code Section 2693(c) would be required."

[6]/ Section 2621.5(a), Chapter 7.5, Division 2, PRC.

to establish regulatory zones, known as "earthquake fault zones,"[7] around the surface traces of active faults and to issue appropriate maps. The zones are defined by turning points connected by straight lines. Most of the turning points are identified by roads, drainages, and other features on the ground. The zones vary in width, but average about one-quarter mile wide.[8] Under the APEFZA, local agencies must regulate activities within those zones, as defined by an appropriate setback from the fault trace. Pursuant to Section 2623 of the PRC, "cities and counties shall require, prior to the approval of a project, a geologic report defining and delineating any hazard of surface fault rupture. If the city or county finds that no undue hazard of that kind exists, the geologic report on the hazard may be waived, with the approval of the State Geologist." The geologic report required under the APEFZA must meet the criteria and policies established by the State Mining and Geology Board (SMGB), as codified in Sections 3600-3603 in Title 14 of the CCR. As indicated in the California Department of Conservation's guidelines: "Most surface faulting is confined to a relatively narrow zone a few feet to a few tens of feet wide, making avoidance (i.e., building setback) the most appropriate mitigation method."[9]

Under the APEFZA special studies zones are depicted in local areas within the USGS 7.5-minute Alberhill, Elsinore, and Wildomar topographic quadrangles. As illustrated in Figure 4.8.2-1 (Earthquake Fault Zones – Alberhill Quadrangle), a portion of the proposed Northern (Lake-Santa Rosa) transmission line and a portion of the upgraded 115-kV transmission line (between the Santa Rosa Substation and the existing Skylark Substation) traverse designated Alquist-Priolo special studies zones. With regard to the proposed 230-kV transmission line upgrade, the USGS 7.5-minute Temecula, Pala, Pechanga, and Wildomar quadrangles were examined and no Alquist-Priolo seismic hazard zones were identified along that alignment.

- California Government Code. The California Emergency Services Act (Section 8589.5, CGC) imposes specific emergency-planning requirements for populated areas downstream of dams and calls for the development of inundation maps by the owners of all jurisdictional dams in the State. The inundation maps are based on a hypothetical dam failure, regardless of how small the probability of failure, making use of dam breaching parameters that will result in a conservative flood inundation map. As indicated, hazard analysis for dam failure should include the identification of high-risk areas, such as dam inundation areas, indicate what areas of adjoining jurisdictions may be affected by a dam failure, and develop individual dam inundation maps for each dam that could affect the jurisdiction or adjoining jurisdictions.

- California Water Code. As required under Section 6200 of the CWC, construction or enlargement of any new dam or reservoir shall not be commenced until the owner has

[7]/ Earthquake fault zones are regulatory zones that encompass surface traces of active faults that have a potential for future surface rupture. Areas that are so designated contain active faults that may pose a risk of surface rupture to existing or future structures. If a property is undeveloped, a fault study may be required before the parcel can be subdivided or before most structures can be permitted. If a property is developed, the APEFZA requires that all real estate transactions within the earthquake fault zone must contain a disclosure of those potential hazards by the seller to prospective buyers.

[8]/ California Department of Conservation, Division of Mines and Geology, Fault-Rupture Hazard Zones in California, Special Publication 42, Revised 1997, Supplements 1 and 2 added in 1999, p. 6.

[9]/ California Department of Conservation, Guidelines for Evaluating the hazard of Surface Fault Rupture, Note 49, California Geological Survey, revised May 2002.

applied for and obtained from the California Department of Water Resources - Division of Safety of Dams (DSOD) written approval of plans and specifications.[10] As required under Section 6120 therein, "for the purpose of enabling it to make decisions as compatible with economy and public safety as possible the department [DSOD] shall make or cause to be made such investigations and shall gather or cause to be gathered such data as may be needed for a proper review and study of the various features of the design and construction of dams, reservoirs, and appurtenances." As authorized under Section 6075 of the CWC, the DSOD, under the State's police power, shall supervise the construction, enlargement, alteration, repair, maintenance, operation, and removal of dams and reservoirs for the protection of life and property.

With regards to those dams and reservoirs in the State that are under the jurisdiction of the DSOD (Section 6076, CWC), it is unlawful to construct, enlarge, repair, alter, remove, maintain, or operate a dam or reservoir except upon approval of the DSOD (Section 6077). Supervision over the maintenance and operation of dams and reservoirs, insofar as necessary to safeguard life and property from injury by reason of the failure thereof, is vested in the DSOD (Section 6100). In determining whether or not a dam or reservoir or proposed dam or reservoir constitutes or would constitute a danger to life or property, the DSOD takes into consideration the possibility that the dam or reservoir might be endangered by seepage, earth movement, or other conditions which exist or which might occur in any area in the vicinity of the dam or reservoir. If the DSOD determines that such conditions exist, the department will notify the owner to take such action as the DSOD determines to be necessary to remove the resultant danger to life and property (Section 6081, CWC).

- Uniform Building Code.[11] The "Uniform Building Code" (UBC) is published by the International Conference of Building Officials (ICBO), now the International Code Council (ICC), one of three model code groups in the country, and is used by most agencies in southern California as the basis for their building codes.[12] The UBC defines criteria to be used in construction of structures based on the level of seismic activity in the region. The ICBO (ICC) has subdivided the United States into six seismic regions. Project sites are located in UBC Seismic Zone 4. As indicated in the UBC, "[t]he building official may require a geotechnical investigation in accordance with Section 1804.2 and 1804.5 when, during the course of investigation, all of the following conditions are discovered, the report shall address the potential for liquefaction: (1) Shallow groundwater, 50 feet (15,240 mm) or less. (2) Unconsolidated sandy alluvium. (3) Seismic Zones 3 and 4."

[10]/ As defined under Section 6002 of the CWC, "'dam' means any artificial barrier, together with appurtenant works, which does or may impound or divert water, and which either (a) is or will be 25 feet or more in height from the natural bed of the stream or watercourse at the downstream toe of the barrier, as determined by the department [DSOD], or from the lowest elevation of the outside limit of the barrier, as determined by the department, if it is not across a stream channel or watercourse, to the maximum possible water storage elevation or (b) has or will have an impounding capacity of 50 acre-feet or more."

[11]/ The California Building Code (CBC) is a modified version of the UBC, which is tailored for California geologic and seismic conditions. It is included in Title 24 of the California Administrative Code and includes stringent earthquake provisions for critical structures.

[12]/ The most effective single element in mitigating earthquake losses to buildings is the consistent application of a modern set of design and construction standards, such as those incorporated in modern building codes. The codes are updated regularly to include the most effective design and construction measures that have been found by testing and research or observed in recent earthquakes to reduce building damage and losses. Local government building departments using a relatively modern code, such as the 1997 UBC, regulate the vast majority of buildings. For new buildings, State and local governments enforce the California Building Standards Code (CBSC) that includes earthquake safety provisions from the 1997 UBC with enhancements for hospitals, public schools, and essential services buildings (Source: Governor's Office of Emergency Services, State of California Multi-Hazard Mitigation Plan, September 2004, p. 80).

The ICBO has published maps that are used in conjunction with the 1997 UBC (Tables 16-S and 16-T) for determining engineering factors for new construction in California. In California, the known active surface faults are classified in the 1997 Uniform Building Code as "Class A, "Class B," and "Class C" faults. A "Class A" fault is the most destructive and a "Class C" fault is the least destructive. The slip rate and maximum magnitude of earthquakes associated with a fault are the basis for the categories. Class A faults exhibit magnitudes of 7.0 or greater and slip rates of at least 5 millimeters per year. "Class B" faults fall in the magnitude 6.5 to 7.0 range with slip rates varying depending on maximum magnitude. Only the "Class A" and "Class B" faults are included in the probabilistic maps.

As illustrated in Figure 4.8.2-2 (Elsinore Fault),[1] the Elsinore Fault (Glen Ivy) (Class B) encompasses the area of the proposed Santa Rosa Substation, LEAPS Powerhouse, and certain associated LEAPS facilities. The near-source zones have been mapped considering the dip angle of the faults in accordance with the 1997 UBC (Footnote 3 of Tables 16-S and 16-T).

4.9 Hazards and Hazardous Materials

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations and existing Etiwanda Generating Station and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, hazards and hazardous materials are not further addressed herein.

4.9.1 Hazards and Hazardous Materials Environmental Setting

A "hazard" represents any condition where public safety is an issue. Hazards may come from a variety of causes including earthquakes, fires, floods, traffic, workplace conditions, air and water pollutants, noise, obstructions to aircraft, impediments to emergency personnel, exposure to substances found to be carcinogenic to humans, pathogens, and disease-borne vectors, and electric shocks. Hazard-related issues associated with earthquakes, fires, floods (including dam breach), traffic, workplace conditions, emergency response, air and water pollutants, noise, vectors, drowning, and shock are addressed elsewhere and are not again repeated herein. This section is limited to a discussion of aircraft operations, hazardous materials,[2] and electromagnetic fields. Wildfire hazards are addressed in Section 4.15 (Public Services).

- **Civilian airports**. Civilian (public use) airports operating in Riverside County include Banning Municipal, Bermuda Dunes, Chiraco Summit, Corona Municipal, Desert Center, Jacqueline Cochran Regional, Flabob, French Valley, Hemet-Ryan, Palm Springs

[1]/ International Conference of Building Officials, Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada, February 1998, Plate O-34.

[2]/ As defined in Section 25501(o) of the H&SC, a "hazardous material" is "[a]ny material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or threatened hazard to human health and safety or to the environment, if released into the workplace or the environment." Section 66261 of the CCR defines "hazardous materials" as "a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed" (Title 22, Chapter 11, Article 2).

International, and Riverside Municipal. Civilian airports operating in San Diego County include McClellan-Palomar, Borrego Valley, Agua Caliente, Brown Field, Fallbrook Community Airpark, Gillespie Field, Jacumba, Montgomery Field, Oceanside Municipal Airport, Ocotillo, and Ramona. None of these airports are located in close proximity to nor would flight operating associated with those facilities be impacted by the proposed Project.

As indicated in the "Elsinore Area Plan" and as depicted in Figure 4.9.1-1 (Skylark Airport Influence Policy Area), development restrictions have been imposed in the area of Skylark Airport. As illustrated, the "Skylark Influence Policy Area" extends southward to Grand Avenue, northward to Lemon Street, and east of Mission Trail.[3] As depicted, the policy area encompasses the existing Skylark Substation. The Federal Aviation Administration's (FAA) visual flight rules (VFR) aeronautic charts for Skylark Airport and for Camp Pendleton and the FAA's instrument flight rule (IFR) low-altitude enroute aeronautic chart for the San Diego area are included in Figure 4.9.1-2 (VFR and IFR Aeronautic Charts).

The location of other local airports, including French Valley Airport, are noted therein. Shown in Figure 4.9.1-3 (Private Landing Strips) are the private "landing strips" located west of Rocky Peak (Sky Ranch) (Sections 23 and 26, T8S, R5W, SBBM)[4] and southeast of Willow Springs in San Mateo Canyon (Sections 11 and 14, T8S, R5W, SBBM), both located on private lands within the TRD. To the east of the TRD, is another private "landing strip" located near DeLuz Creek.

- **Military airports**. March Air Reserve Base is the only military airport in Riverside County. Military airports in San Diego County include Marine Corps Air Station (MCAS) Camp Pendleton, MCAS Miramar, Naval Air Station (NAS) North Island, and Navy Outlying Field (NOLF) Imperial Beach. Of those, only Camp Pendleton (NFG) is located in proximity to the Project.

  As indicated in the INRMP, with eight helicopter squadrons, 180 aircraft, and over 148,000 flight operations annually on a single runway, Camp Pendleton is the busiest helicopter airstrip in the United States Marine Corps. At peak periods, a military aircraft, usually a helicopter, takes off or lands at Camp Pendleton, within the R2503-B airspace, every two minutes. In addition, a commercial airway (V-23), located just off the coast from Camp Pendleton, is considered the busiest in southern California. At peak periods, a commercial aircraft passes along this airspace every two minutes. Camp Pendleton is designated as a "High Midair Potential" area by the FAA.

  Camp Pendleton is home to the First Marine Expeditionary Force, the First Marine Division, First Force Service Support Group, Marine Aircraft Group (Third Marine Aircraft Wing), and many tenant units, including the Marine Corps Tactical Systems Support Activity, Assault Craft Unit 5 (a Navy command), Naval Hospital Camp

[3]/ On May 22, 2003, the Riverside County Airport Land Use Commission (ALUC) voted unanimously to certify that the Riverside County General Plan was consistent with the "Airport Land Use Plan" provided that certain policy revisions were included to ensure consistency and to improve the Riverside County General Plan's system of identifying and resolving potential airport land use conflicts.

[4]/ United States Department of Agriculture, A Guide to the Agua Tibia & San Mateo Wilderness, Cleveland National Forest, Forest Service Pacific Southwest Region, 2004.

Pendleton, Naval Dental Clinic Camp Pendleton, the Field Hospital Operations and Training Command (a United States Navy command), an Army Reserve Center, and the Weapons and Field Training Battalion. Camp Pendleton aircraft operations are illustrated in Figure 4.9.1-4 (Camp Pendleton Aircraft Operations [Airspace]).[5]

- **Aircraft and other aviation hazards**. In 1974, the Federal Aviation Administration (FAA) published "Advisory Circular 60-10," outlining the FAA's position regarding the operation of "hang gliders" and the sport of "sky-sailing." In that publication, the FAA outlines a "suggested" set of parameters that practitioners of that sport should follow to avoid possible future regulatory action. In 1982, in order to "achieve an acceptable level of air safety by reducing potential conflict with other airspace users and to provide protection to persons and property on the ground," the FAA adopted FAR Part 103 (47 FR 38776) regulating both powered and non-powered ultralight aircraft. As required under Section 103.9 (Hazardous Operations) therein: "No person may operate any ultralight vehicle in a manner that creates a hazard to other persons or property."

  Recreational skydiving is regulated under the FAA's Federal Aircraft Regulations (FAR) Part 105 (Parachute Operations) and "Advisory Circular 105-2C" (Sport Parachute Jumping, Initiated by: AFS-340/820." Although the FAA has no licensing requirements for skydivers, most commercial drop zones are regulated by the United States Parachute Association (USPA). A civilian sky diving area is located at Skylark Airport, located in the Back Basin.

  With regard to aerial firefighting, the USDA Forest Service's and BLM's Blue-Ribbon Panel noted that "in reviewing a document that summarized 36 aviation accidents related to fire service helicopters during the past 10 years, many accidents had similar features. Almost one-third of the reviewed accidents related to mechanical failure, approximately one-quarter were associated with operating at the edge of or outside the approved flight envelope, and clusters of accidents involved entanglements with loads or long-lines. Several wire-strike incidents also were noted. The high accident rate appears to be associated with deficiencies in operational control, maintenance, and training."[6]

- **Electromagnetic fields**. Electrical power lines, as well as energized components of electrical motors, home wiring, lighting, and all other appliances, produce electric and magnetic fields (EMFs). The EMF produced by the alternating current (AC) electrical power system in the United States has a frequency of 60 Hertz (Hz), meaning the intensity and orientation of the field changes 60 times per second.

  The electromagnetic spectrum encompasses fields with varying frequencies. These frequencies range from gamma rays to extremely low frequency (ELF) waves, such as those that are generated for electricity, specifically 50 to 60 Hz. The wavelength (the distance from peak-to-peak or valley-to-valley of the wave) of 60 Hz ELF waves is 5,000 kilometers, while the wavelength of x-rays is about one nanometer (1×10^{-9} meters).

[5]/ Op. Cit., Integrated Natural Resources Management Plan – Marine Corps Base and Marine Corps Air Station Camp Pendleton, pp. 2-20 and 2-21.

[6]/ United States Forest Service and Bureau of Land Management, Federal Aerial Firefighting: Assessing Safety and Effectiveness, Blue Ribbon Panel Report to the Chief, USDA Forest Service and Director, USDI Bureau of Land Management, December 2002, p. 6.

Fields with short wavelengths, such as gamma rays and x-rays, are energetic and can break (ionize) covalent chemical bonds. Medium length fields, such as microwaves, cause molecular movement and heating. Long wavelength fields, such as ELF fields or radio-frequency fields, do not have the energy to break chemical bonds, nor to cause heating.

Electric field strengths from a transmission line decrease with distance away from the outermost conductor,[7] typically at a rate of about one divided by the distance squared ($1/d^2$). In contrast, the electric field strength from a single conductor typically decreases at a rate of about one divided by the distance ($1/d$). Electric field strengths for a transmission line generally remain nearly constant over time because the voltage of the line is typically kept within bounds of about 5± percent of its rated voltage.

A commonly used magnetic field intensity unit of measurement for reporting magnetic field magnitudes is tesla (T) or gauss (G), where $T = 10^4 G$. Because the range of magnetic fields encountered is usually quite small, the fields are generally described in units of microtesla ($1\mu T = 0.000001$ T) or milligauss (1 mG = 0.001 G). Although high-voltage transmission lines produce relatively high magnetic fields directly beneath them, transmission lines contribute relatively little to environmental levels at distances greater than 100 meters, as illustrated in Table 4.9.1-1 (Magnetic Fields as a Function of Distance from Power Lines).[8]

Table 4.9.1-1. Magnetic Fields as a Function of Distance from Power Lines

Transmission Lines (kV)	**Maximum Magnetic Field on Right-of-Way** (μT [mG])	**Representative Magnetic Fields at Different Distances from Lines** (μT [mG])			
		15.24 meters (50 feet)	**30.48 meters** (100 feet)	**60.96 meters** (200 feet)	**91.4 meters** (300 feet)
115	3.0 (30)	0.7 (7)	0.2 (2)	0.04 (0.4)	0.02 (0.2)
230	5.8 (58)	2.0 (20)	0.7 (7)	0.18 (1.8)	0.08 (0.8)
500	8.7 (87)	2.9 (29)	1.3 (13)	0.32 (3.2)	0.14 (1.4)

Source: United States Environmental Protection Agency

Household appliances and other common elements generate magnetic fields in the home, work, and school environments. For example, when measures about 5 centimeters from the surface of an electric blanket, approximately the distance of internal organs, the magnetic fields average about 2.2 μT (22 mG) for conventional electric blankets and about 0.1 μT (1 mG) for positive-temperature coefficient blankets.[9]

Transmission line electric fields are affected by the presence of grounded and conductive objects. Trees, buildings, and other electrically grounded objects can significantly reduce ground level electric fields by shielding/screening the area nearby.

[7]/ For example, directly beneath a 230-kV transmission line, the electric field strength is 2,000 volts per meter (V/m), whereas 200 feet away from the transmission line, the electric field strength is only 10 V/m. The magnetic field directly beneath the transmission line is 5.8 nanoTesla (nT) or 58 milliGauss (mG); whereas, 200 feet away, the magnetic field is only 0.2 nT or 2 mG.

[8]/ United States Environmental Protection Agency, EMF in Your Environment: Magnetic Field Measurements of Everyday Electrical Devices, EPA/402/R/92/008, Office of Radiation and Indoor Air, 1992 cited in Committee on the Possible Effects of Electromagnetic Fields on Biological Systems, Possible Health Effects of Exposure to Residential Electric and Magnetic Fields, National Research Council, Commission on Life Sciences, 1997, Table 2.1, p. 28.

[9]/ Committee on the Possible Effects of Electromagnetic Fields on Biological Systems, Possible Health Effects of Exposure to Residential Electric and Magnetic Fields, National Research Council, Commission on Life Sciences, 1997, p. 30.

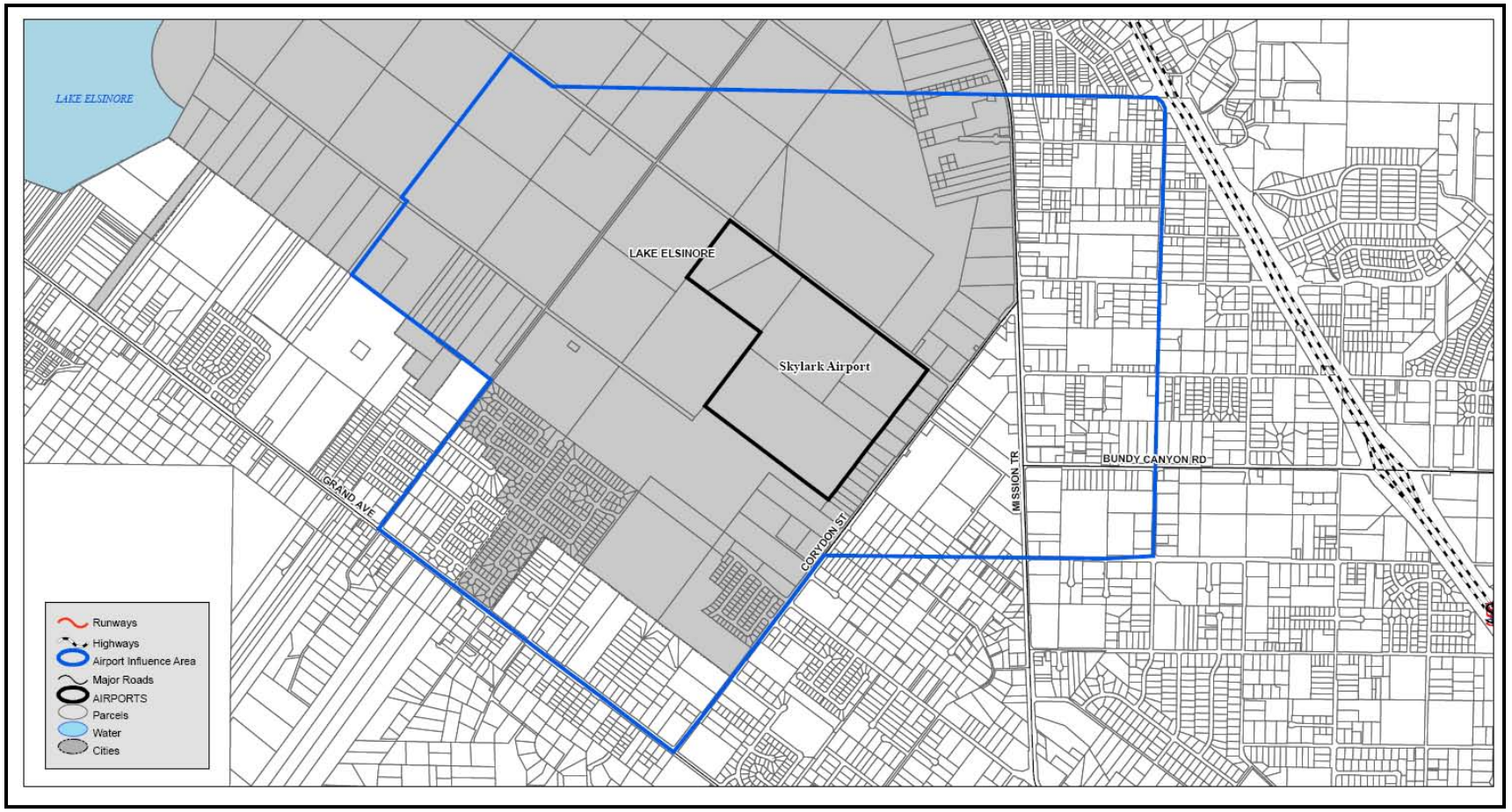
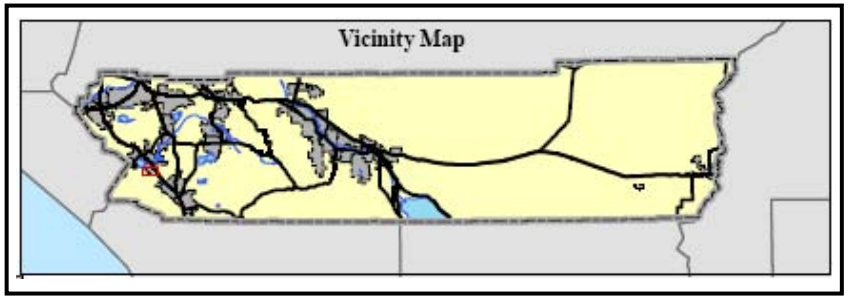
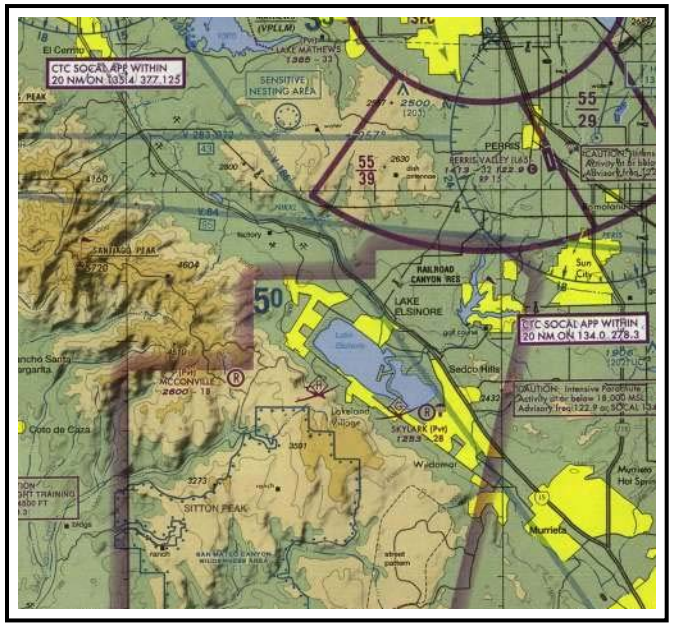
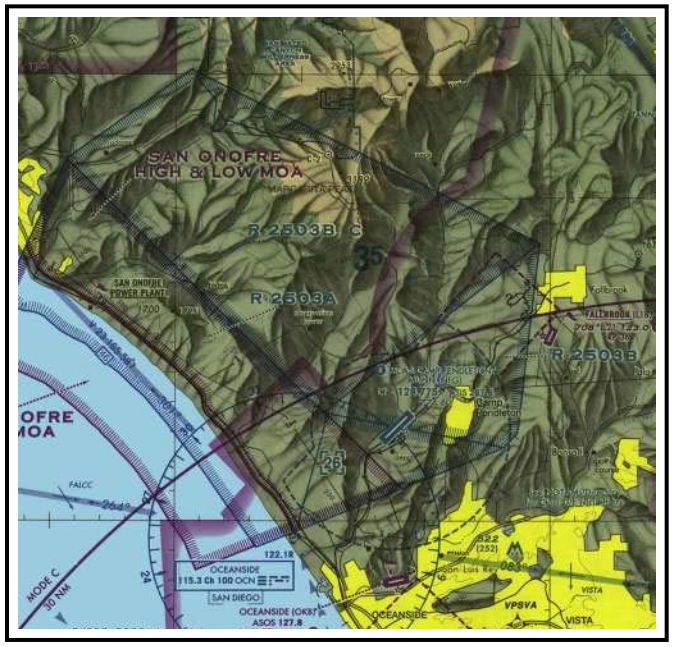


Figure 4.9.1-1. Skylark Airport Influence Policy Area
Source: County of Riverside







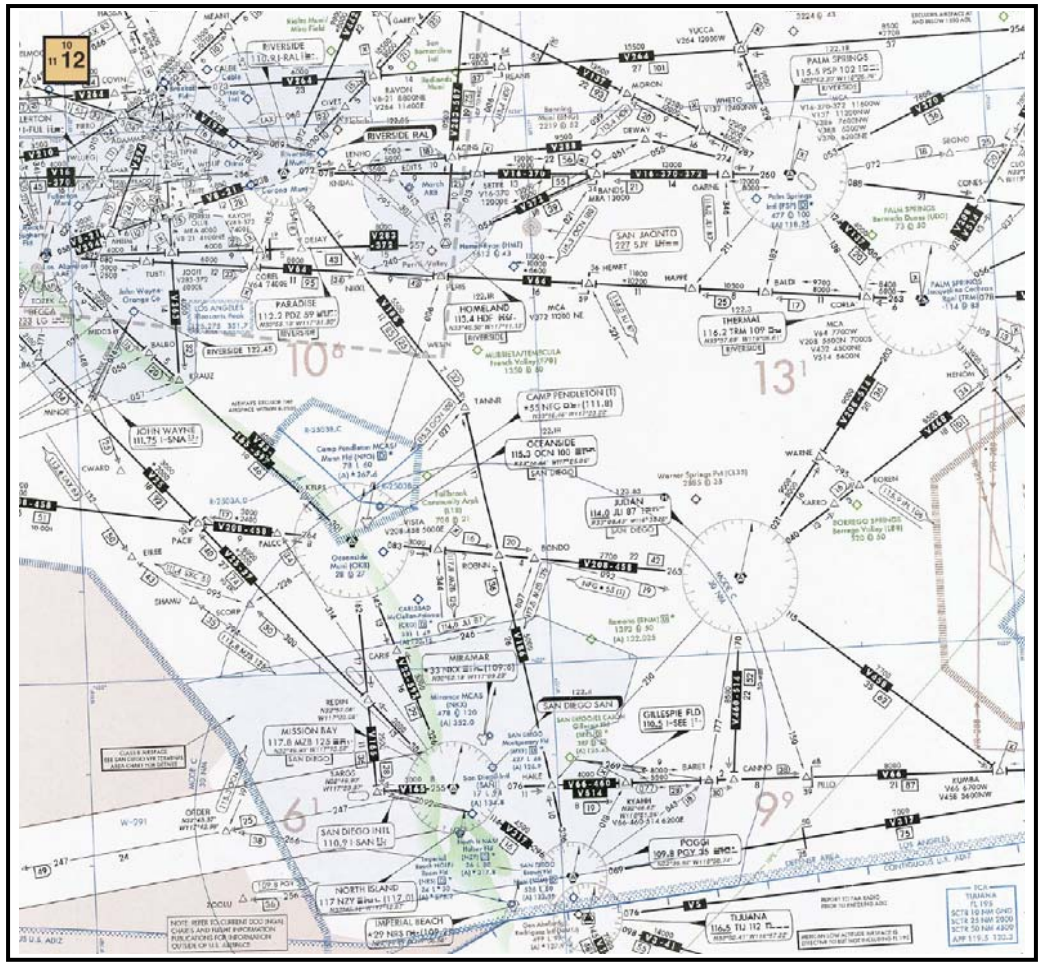


Figure 4.9.1-2 (Upper Left)**. VFR Aeronautic Chart Skylark Airport Vicinity** (1 of 3)
Source: Federal Aviation Administration

Figure 4.9.1-2 (Lower Left)**. VFR and IFR Aeronautic Chart Camp Pendleton Vicinity** (2 of 3)
Source: Federal Aviation Administration

Figure 4.9.1-2 (Upper Right)**. IFR Aeronautic Chart – San Diego** (3 of 3)
Source: Federal Aviation Administration

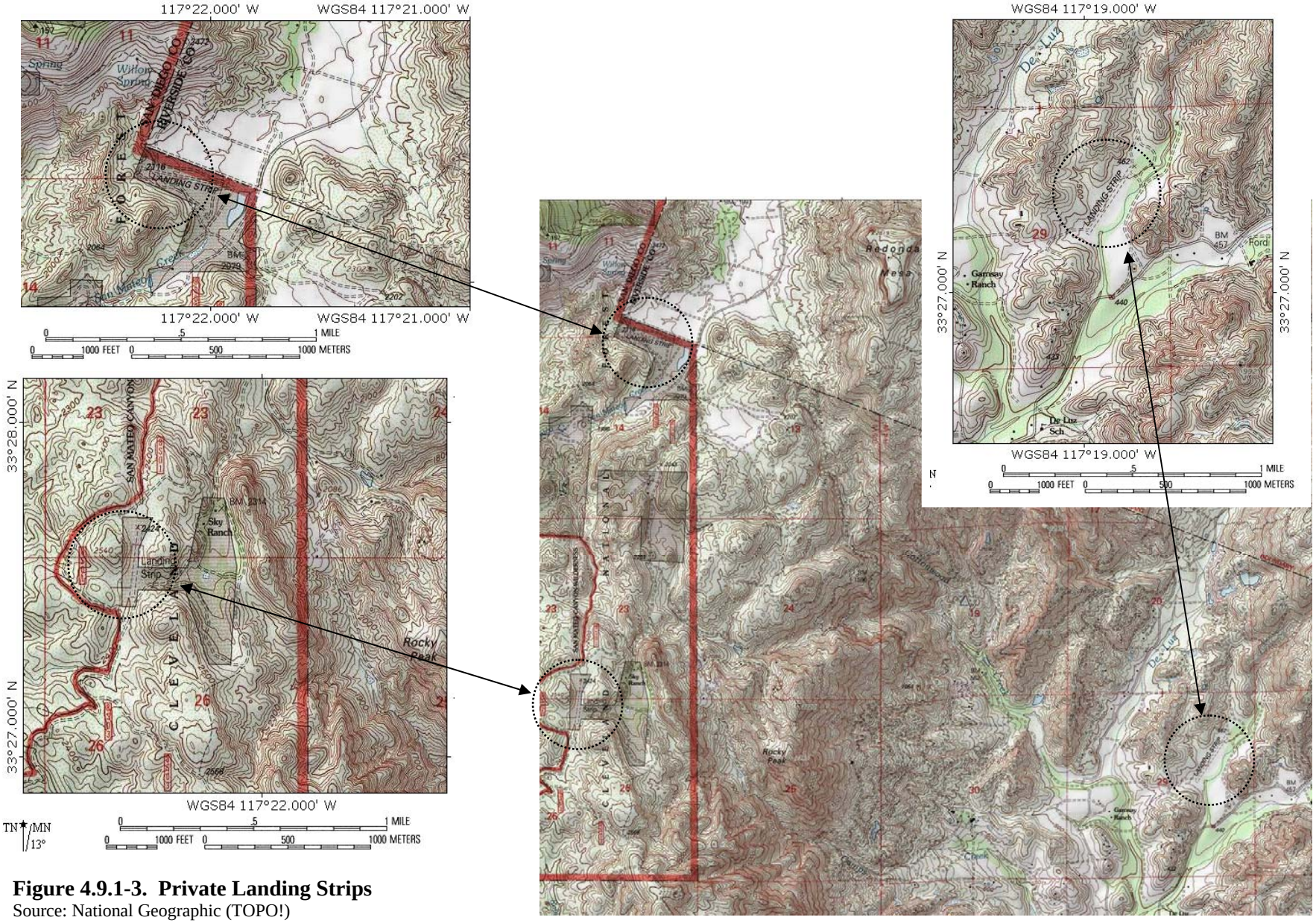


Figure 4.9.1-3. Private Landing Strips
Source: National Geographic (TOPO!)

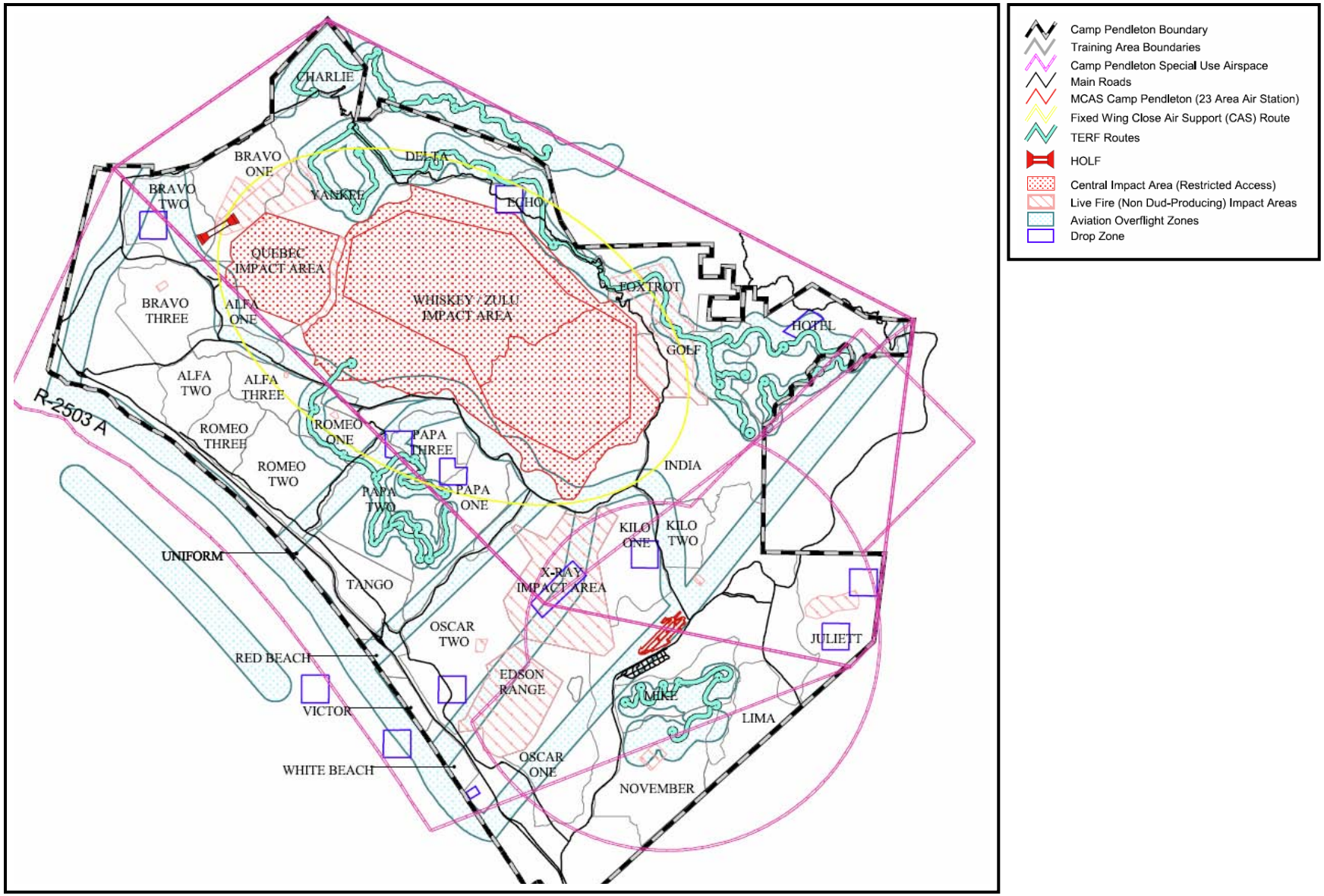


Figure 4.9.1-4. Camp Pendleton Aircraft Operations (Airspace)
Source: United States Marine Corps

Electric power substations also create electric fields due to voltage on station components. The equipment or components of a substation act as point-sources of an electric field. As the distance from these point sources become greater than the physical size of the equipment acting as a source, the field is greatly reduced. The electric fields of substation equipment decreases external to a substation at a rate of approximately one divided by the distance cubed ($1/d^3$), unless an overhead transmission line is nearby. Substation electric fields outside the fenced equipment area are typically very low because of shielding by metallic substation components and the metal fencing surrounding the substation.

As indicated by the National Institute of Environmental Health Sciences (NIEHS): "In general, the strongest EMF around the outside of a substation comes from the power lines entering and leaving the substation. The strength of the EMF from equipment within the substations, such as transformers, reactors, and capacitor banks, decreases rapidly with increasing distance. Beyond the substation fence or wall, the EMF produced by the substation equipment is typically indistinguishable from background levels."[10]

As illustrated in Figure 4.9.1-5 (Typical EMF Levels for Power Transmission Lines), at a distance of 300 feet and at times of average electricity demand, the magnetic field from many lines can be similar to typical background levels found in most homes.[11,12] The duration of exposure to EMFs from power lines near a home is, however, typically much longer than the duration of exposure to EMFs from most appliances.

Buildings provide considerable attenuation and the external field strength arising from a transmission line will be reduced by a factor of between 10 and 1,000, depending on the characteristics of the building and the local electric field. Electric field exposure in buildings is due predominately to fields arising from proximity to internal wiring and appliances. The metallic casing around components of the substation and the insulation on power cables all tend to shield electric fields; the electric field strengths at the boundaries are likely to be no more than a few volts per meter. As noted by the CEC, "underground siting of transmission lines does not substantially reduce EMF levels" and "EMF levels tend to be more intense directly over underground transmission lines."[13]

The State Legislature has not adopted regulatory limits for high-voltage transmission line EMF levels. As a result, there are currently no State regulations that specifically apply to EMF levels associated with the Project. Similarly, the State has no adopted policies or regulations that establish a safe or unsafe distance for residential structures from power transmission lines.

On January 15, 1991, the CPUC began an investigation to consider the CPUC's potential role in mitigating health effects, if any, of EMFs created by electric utility power lines and by cellular radiotelephone facilities. By this investigation, all interested parties were

[10]/ National Institute of Environmental Health Sciences and National Institutes of Health, Electric and Magnetic Fields Assocaited with the Use of Electric Power – Questions & Answers, June 2002, p. 36.
[11]/ Ibid., p. 35.
[12]/ Underground lines do not produce electric fields but may produce magnetic fields aboveground.
[13]/ Op. Cit., 2005 Environmental Performance Report of California's Electric Generation System, Staff Report, CEC-700-2005-016, p. 167.

notified that the CPUC would take appropriate action on EMFs in response to a conclusion, based on scientific evidence, which indicates that a health hazard actually exists and that a clear cause and effect relationship between utility property or operations and public health is established. Due to the lack of scientific or medical conclusions about potential health effects from utility electric facilities and power lines, the CPUC adopted Seven Interim Measures that help to address public concern on this subject (Decision 93-11-013).

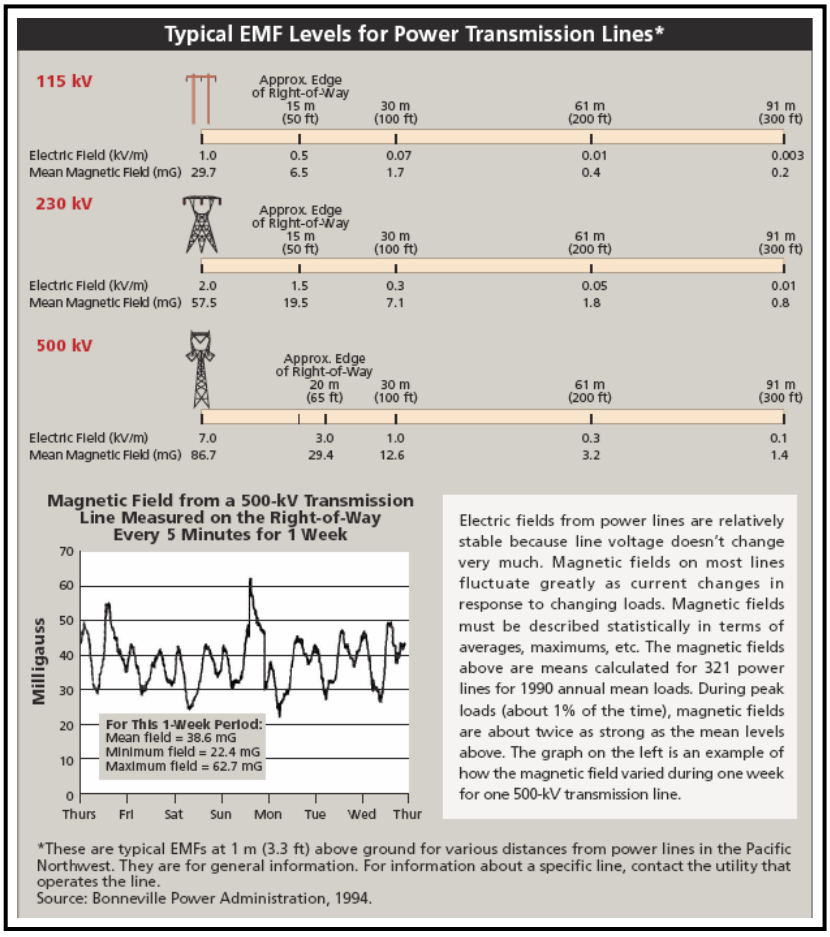


Figure 4.9.1-5. Typical EMF Levels for Power Transmission Lines
Source: National Institute of Environmental Health Sciences

On January 27, 2006, the CPUC affirmed an early (November 1993) decision on "low-cost/no-cost" policy to mitigate EMF exposure for new utility transmission and substation projects. As a measure of low-cost mitigation, the CPUC uses the benchmark of 4 percent of transmission and substation project's costs for EMF mitigation and combines linked transmission and substation projects in the calculation of this benchmark. In addition, the CPUC has adopted rules and policies to improve utility design guidelines for reducing EMF and has called for a utility workshop to implement these policies and standardize design guidelines (Decision 06-01-042), including requirements for the preparation of a field management plan (FMP)[14]

[14]/ California Public Utilities Commission, EMF Design Guidelines for Electrical Facilities, July 12 ,2006.

As specified therein: "In 2006, the CPUC updated its EMF Policy in Decision 06-01-042. The decision re-affirmed that health hazards from exposures to EMF have not been established and that State and Federal public health regulatory agencies have determined that setting numeric exposure limits is not appropriate. The CPUC also re-affirmed that the existing no-cost and low-cost precautionary-based EMF policy should be continued. In the decision, the CPUC required the utilities to update their EMF Design Guidelines to reflect the following key elements of the updated EMF Policy: (A) 'The Commission has exclusive jurisdiction over issues related to EMF exposure from Regulated facilities.' (2) 'while we continue our current policy of low-cost and no-cost EMF mitigation, as defined by a 4% benchmark of total project cost, we would consider minor increases above the 4% benchmark if justified under unique circumstances, but not as a routine application in utility design guidelines. We add the additional distinction that any EMF mitigation cost increases above the 4% benchmark should result in significant EMF mitigation to be justified, and the total costs should be relatively low.' (C) For low-cost mitigation, the 'EMF reductions will be 15% or greater at the utility ROW.' (D) 'Parties generally agree on the following group prioritization for land use categories in determining how mitigation costs will be applied: (1) Schools and licensed day care, (2) Residential, (3) Commercial/industrial, (4) Recreational, (5) Agricultureal, (6) Undeveloped land.' (E) 'Low-cost EMF mitigation is not necessary in agricultural and undeveloped land except for permanent occupied residences, schools or hospitals located on these lands.' (F) 'Although equal mitigation for an entire class is a desirable goal, we will not limit the spending of EMF mitigation to zero on the basis that not all class members can benefit.' (G) 'We do not request that utilities include non-routine mitigation measures, or other mitigation measures that are based on numeric values of EMF exposure, in revised design guidelines.'"[15]

Corona is the ionization of the air at the surface of the energized conductor and suspension hardware due to very high electric field strength. Corona may result in radio and television reception interference, audible noise, light, and production of ozone. Corona is a function of the voltage of the line, the diameter of the conductor, and the condition of the conductor and suspension hardware. The electric field is directly related to the line voltage and is the greatest at the surface of the conductor. Large-diameter conductors have lower electric field gradients at the conductor surface and lower corona than smaller conductors. Irregularities or sharp edges on suspension hardware concentrate the electric field at these locations, increasing corona at these spots. Contamination on the conductor surface, such as dust or insects, can also cause irregularities resulting in corona. Other sources of irregularities include raindrops, snow, fog, and condensation. Corona typically becomes a design concern for transmission lines having voltages of 345 kV and above.

- **Hazardous materials**. A hazardous materials assessment is typically conducted in order to identify the presence of potential presence of "recognized environmental conditions."[16]

[15]/ Ibid., pp. 1-2.

[16]/ According to Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9601 et seq.) (CERCLA), all appropriate inquiry into the previous ownership must be undertaken to comply with the "innocent landowner defense." The innocent landowner defense arises out of the statutory definition of "contractual relationship." Congress defined "contractual relationship" to include real estate transactions and provided that an owner of contaminated property can establish a defense to CERCLA liability if: (i) the property was acquired after the hazardous substance was disposed there, and (ii) at the time of acquisition, the owner "did not know and had no reason to know" that the

As defined by the American Society of Testing and Materials (ASTM), the term "recognized environmental conditions" means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with applicable laws. The term does not infere de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.[17]

Environmental investigations included a search of a database documenting sites known to be associated with hazardous or toxic materials. Accordingly, the United Stated Department of Housing and Urban Development (HUD), in cooperation with the USEPA, has implemented an Internet-based mapping service known as "EnviroMapper" (E-Maps). E-maps, linked to the USEPA database, provide information concerning the presence of Superfund sites, hazardous waste generators, air emission dischargers, and other types of federally-regulated facilities. Based on a review of the applicable E-Maps, no USEPA-regulated facilities exist either on or in close proximity to the proposed powerhouse, reservoir, switchyard, or substation sites or in close proximity to the proposed Northern (Lake-Santa Rosa) and Southern (Santa Rosa-Case Springs) transmission alignments. In addition, based on a cursory visual reconnaissance survey of the observable areas comprising each of those properties, other than the presence of general household debris and abandoned automobile parts, there exists no visible evidence that the Project sites contain hazardous materials regulated under RCRA or HWCL. None of the properties upon which new facilities are now proposed are located on a site which is included on a list of hazardous materials sites compiled pursuant to Section 65962.5 of the CGC.

In 1998, as part of the "San Juan Creek Watershed Management Study," a preliminary hazardous toxic radioactive waste (HTRW) assessment was conducted within the San Juan Creek watershed. As indicated by the USACE, the streambed throughout this reach has the potential to contain impacted soil due to municipal and agricultural runoff, an adjacent industrial zone, adjacent present and former wastewater treatment plants, incidences of leaking petroleum underground storage tanks (USTs) on the adjacent banks, and potential illegal dumping. Miscellaneous debris was observed in the streambed.[18] There are 62 locations on Camp Pendleton that have been identified as sites where the disposal or discharge of hazardous wastes may have resulted in potential environmental contamination. None of those sites are located in proximity to the proposed on-base

hazardous substance was disposed on the property. The owner may be only able to establish that they had "no reason to know" if appropriate due diligence was conducted prior to the acquisition.

[17]/ American Society of Testing and Materials, E1527-00 Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process, 2003.

[18]/ United States Army Corps of Engineers, San Juan Creek Watershed Management Study, Orange County, California, Feasibility Phase, Hazardous Toxic Radioactive Waste Appendix, August 2002.

facilities.[19] In addition, no hazardous waste sites have been identified within the existing Talega-Escondido transmission alignment.[20]

Additional baseline information concerning hazards and hazardous materials within the City of Lake Elsinore, County of Riverside, and County of San Diego is presented below.

- **City of Lake Elsinore**. As indicated in the City's "Background Report," based on record searches of governmental databases performed using Environmental Data Resources (EDR), a substantial number of hazardous sites ("approximately 668 pages") exist throughout the Lake Elsinore area. The City acknowledges that there are a "large number" of businesses and other entities that generate, transport, store, treat, and/or disposal of hazardous wastes.[21]

  The 150-acre Skylark Airport (FAA Site No. 01740.5*A) is a private airport that is the "hub for air sports and accommodates organizations such as Adventure Flights who uses the airport for Glider flights, and Skydive Elsinore, who uses the airport as their base for skydiving. The airport, located at elevation 1253-feet above msl, has a total of 31 field-based planes, including 21 single engine airplanes, 5 multi-engine airplanes, 4 glider airplanes, and 1 ultralight plane."[22]

- **County of Riverside**. As indicated in the Riverside County General Plan, the area in proximity to Skylark Airport is designated "Skylark Airport Influence Area." As indicated therein, prohibited uses include "[a]ny use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation." As proposed, new-115 kV distribution lines will be strung on existing or replacement power poles located along the Grand Avenue and Corydon Street ROW, extending from the proposed Santa Rosa Substation to Skylark Substation. That substation, located at the southeast corner of Corydon Street and Mission Trail, is within the Skylark Airport Influence Policy Area. There are three safety zones associated with the Skylark Airport Influence Area. Properties within these zones are subject to regulations (Compatibility Guidelines for Airport Safety Zones for Skylark Airport) governing such issues as development intensity, density, height of structures, and noise.

  As determined by the Riverside County Board of Supervisors, based on an assessment of the programmatic environmental impacts associated with the implementation of the Riverside County General Plan and the development activities authorized therein, no significant hazardous material impacts were identified.[23] Flood, inundation, seismic, erosion, and fire hazards are addressed under other topical issues herein. Additional information concerning hazards affecting Riverside County is presented in the County's "Multi-Jurisdictional Local Hazard Mitigation Plan."[24]

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[19]/ Op. Cit., Integrated Natural Resources Management Plan – Marine Corps Base and Marine Corps Air Station Camp Pendleton, pp. 2-31 through 2-35.
[20]/ Op. Cit., Proponent's Environmental Assessment for Replacement of the SONGS 2 & 3 Steam Generators, p. 4-74.
[21]/ Op. Cit., City of Lake Elsinore General Plan, Background Reports, Hazards and Hazardous Materials Background Report, January 2006, p. 1-4.
[22]/ Ibid., Land Use and Recreation Background Report, p. 1-9.
[23]/ Op. Cit., CEQA Findings of Fact and Statement of Overriding Considerations of the Board of Supervisors of Riverside County for the 2003 Riverside County General Plan, Findings of Fact for Riverside General Plan Impacts and Mitigation Measures, Environmental Impact 4.11.
[24]/ County of Riverside, Riverside Operational Area – Multi-Jurisdictional Local Hazard Mitigation Plan, October 5, 2004.

- **County of San Diego**. There are several hazardous material sites located in the vicinity of the existing Talega-Escondido 230-kV transmission line, including those located in Camp Pendleton. Most of these sites are leaking underground storage tank (LUST) or underground storage tank (UST) sites, associated with agricultural or commercial land uses. No hazardous material sites have been identified within the existing transmission line right-of-way.

  Effects of electric induction on objects are not likely from a 69-kV or 230-kV line. Magnetic induction can, however, still occur because this effect is a function of the current and not the line voltage.[25] Additional information concerning the range of hazards affecting San Diego County are outlined in the "Multi-Jurisdictional Hazard Mitigation Plan, San Diego County, CA."[26]

4.9.2 Hazards and Hazardous Materials Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's hazards and hazardous materials regulatory setting. A more comprehensive listing of potentially applicable laws, ordinances, regulations and standards (LORS) designed to address specific hazards, safety considerations, and nuisance conditions is presented in Table 4.9.2-1 (Hazard, Safety, and Nuisance-Related LORS).[27]

- Federal Resource Conservation and Recovery Act. The Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.) (RCRA) is the major Federal statute addressing the management of the nation's wastes, including hazardous, municipal, industrial, and other types of solid waste. RCRA gave the USEPA the authority to control hazardous waste from the "cradle-to-grave," including the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also sets forth a framework for the management of non-hazardous wastes. The Federal Hazardous and Solid Waste Amendments of 1984 (HSWA) amended the RCRA and required the phasing out of land disposal of hazardous wastes.

- Emergency Planning and Community Right-to-Know Act. The Federal Emergency Planning and Community Right-to-Know Act of 1986 (42 U.S.C. 11001 et seq.) (EPCRA), also known as SARA Title III, established a program to: (1) encourage state and local planning for responding to releases of hazardous chemicals; and (2) provide the public, local governments, fire departments, and other emergency officials with information concerning chemical releases and the potential chemical risks in their communities. Facilities that store, use, or release certain chemicals may be subject to various reporting requirements. EPCRA requirements include: (1) emergency response notification; (2) emergency release notification: (3) hazardous chemical inventory reporting; and (4) toxics release inventory reporting. Specifically, Section 311 of EPCRA requires facilities that have hazardous chemicals above specified thresholds to provide either material safety data sheets (MSDS) for those chemicals or a list of those

[25]/ Op. Cit., Valley-Rainbow Interconnect Proponent's Environmental Assessment, March 2001, p. 4-90.
[26]/ County of San Diego, Multi-Jurisdictional Hazard Mitigation Plan, San Diego County, CA, March 2004.
[27]/ California Energy Commission, Blythe Energy Project Phase II, March 4, 2002, Table 7.17-4.

chemicals to their State Emergency Response Commission (SERC), Local Emergency Planning Committee (LEPC), and local fire departments.

Tier I inventory information is the minimum information that facilities must report to comply with Section 312. Tier I inventory information includes the general types and locations of hazardous chemicals at a facility. Tier II inventory information is more specific on amounts and locations of hazardous chemicals at a facility. A facility can choose to report Tier II inventory information and must report it if requested by the SERC, LEPC, local fire department, or if state and local law should require it. Any release of one or more of the roughly 800 CERCLA or 360 EPCRA hazardous substances that equals or exceeds a reportable quantity (RQ) must be reported to the USEPA's National Response Center (NRC).

- Spill Prevention, Control, and Countermeasures (SPCC) Program. The USEPA's oil prevention regulations (40 CFR Part 112), promulgated under the authority of Section 311 of the Federal CWA, sets forth requirements for prevention of, preparedness for, and response to oil discharges at specific non-transportation-related facilities. To prevent oil from reaching navigable waters and adjoining shorelines and to contain discharges of oil, the regulations require these facilities to develop and implement SPCC plans and establishes procedures, methods, and equipment requirements. Subparts A-C of Part 112 are designed to protect public health, public welfare, and the environment from potential harmful effects of oil discharges to navigable waters. The rule requires facilities that could reasonably be expected to discharge oil in quantities that may be harmful into navigable waters of the United States to develop and implement SPCC plans. The plans ensure that these facilities put in place containment and countermeasures that will prevent oil discharges.[28]

- National Emission Standards for Hazardous Air Pollutants. The CAA required the USEPA to develop and enforce regulations to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health. In accordance with Section 112 of the CAA, the USEPA established National Emission Standards for Hazardous Air Pollutants (NESHAP). Asbestos was one of the first hazardous air pollutants regulated under Section 112. Under Subpart M (40 CFR 61, Subpart M), an asbestos-containing material (ACM) survey must be performed prior to renovation or demolition activities. Notification of the lead agency is required 14 days prior to the start of disturbance of ACM.

- Federal Occupational Safety and Health Act. Congress passed the Occupational and Safety Health Act (29 U.S.C. 651-671) to ensure worker and workplace safety. The act's intent is to make sure employers provide their workers a place of employment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions.

[28]/ United States Environmental Protection Agency, SPCC Guidance for Regional Inspectors, Version 1.0, EPA 550-B-05-001, November 28, 2005, p. 1-2.

Table 4.9.2-1. Hazard, Safety, and Nuisance-Related LORS

Design and Construction	Applicability
8 CCR, 2700 et seq. (High Voltage Electrical Safety Orders)	Establishes essential requirements and minimum standards for installation, operation, and maintenance of electrical installation and equipment to provide practical safety and freedom from danger.
ANSI/IEEE 693 (IEEE Recommended Practices for Seismic Design of Substations)	Provides recommended design and construction practices.
IEEE 1119 (IEEE Guide for Fence Safety Clearances in Electric-Supply Substations)	Provides recommended clearance practices to protect persons outside the facility from electric shock.
IEEE 998 (Direct Lighting Strike Shielding of Substations)	Provides recommendations to protect electrical system from direct lighting strikes.
IEEE 980 (Containment of Oil Spills for Substations)	Provides recommendations to prevent release of fluids into the environment.
Electric and Magnetic Fields	
ANSI/IEEE 644-1994 (Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines)	Standard procedures for measuring EMF from an electric line that is in service.
Hazardous Shock	
ANSI/IEEE 80 (IEEE Guide for Safety in AC Substation Grounding)	Presents guidelines for assuring safety through proper grounding of AC outdoor substations.
NESC, ANSI C2, Section 9, Article 92, Paragraph E, Article 93, Paragraph C	Covers grounding methods for electrical supply and communication facilities.
Communication Interference	
47 CFR 15.25 (Operating Requirements, Incidental Radiation)	Prohibits operations of any device emitting incidental radiation that causes interference to communications. The regulation also requires mitigation for any device that causes interference.
Aviation Safety	
14 CFR Part 77 (Objects Affecting Navigable Air Space)	Describes the criteria used to determine whether a "Notice of Proposed Construction or Alteration" is required for potential obstruction hazards.
FAA Advisory Circular No. 70/460-1G (Obstruction Marking and Lighting)	Describes FAA standards for marking and lighting of obstructions as identified in Federal Aviation Regulations Part 77.
Fire Hazards	
14 CCR 1250-1258 (Fire Prevention Standards for Electric Utilities)	Provides specific exemptions from electric pole and tower firebreak and electric conductor clearance standards and specifies when and where standards apply.
General Order 95 (GO-95) CPUC (Rules for Overhead Electric Line Construction) Section 35	CPUC rule covers all aspects of design, construction, operation, and maintenance of electrical transmission line and fire safety (hazards).
CPUC General Orders and Decisions	
General Order 52 (GO-52) (Construction and Operation of Power and Communication Lines)	Applies to the design of facilities to provide or mitigate inductive interference. Covers all aspects of the construction, operation, and maintenance of power and communication lines and specifically applies to the prevention or mitigation of inductive interference.
General Order 95 (GO-95) (Rules for Overhead Electric Line Construction)	CPUC rule covers required clearances, grounding techniques, maintenance, and inspection requirements.
General Order 128 (GO-128) (Rules for Construction of Underground Electric Supply and Communication Systems)	Establishes requirements and minimum standards to be used for the station AC power and communication circuits.
General Order 131-D (GO-131) (Rules for Planning and Construction of Electric Generation, Line, and Substation Facilities in California)	CPUC construction-application requirements, including requirements related to EMF reduction.
Public Utilities Code, Sections 21656-21660	Discusses the permit requirements for construction of possible obstructions in the vicinity of aircraft landing areas, in navigable air space, and near the boundary of airports.
CPUC Decision 93-11-013	CPUC position on EMF reduction.
Notes: ANSI – American National Standards Institute IEEE – Institute of Electrician and Electronic Engineers	

Source: California Energy Commission

The United States Department of Labor Occupational Safety and Health Administration (OSHA) oversees the administration of the act and enforces standards. The act assigns to OSHA two principal functions: setting standards and conducting workplace inspections to ensure that employers are complying with the standards and providing a safe and healthful workplace. OSHA has developed a substantial body of safety regulations, collectively known as the "General Industry Standards" (29 CFR 1910).[29]

Since workers may be at risk of exposure to many types of hazardous materials in the performance of duties, OSHA has published an extensive standard regulating such exposures (29 CFR 1910.1200). Even in areas where OSHA has not promulgated a standard addressing a specific hazard, employers are responsible for complying with the act's "general duty" clause. The general duty clause states that each employer shall furnish a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees. Additional Federal and State asbestos requirements related to OSHA standards (29 CFR 1926.1101) are covered by the State's asbestos construction standards (8 CCR 1529).

- National Electrical Safety Code. Part 2 (Safety Rules for Overhead Lines) of the "National Electrical Safety Code"[30] (ANSI Standard ANSI C2) (NESC) contains provisions specifying the national safe operating clearances standards applicable in areas where the line might be accessible to the public. Such requirements are intended to minimize the potential for direct or indirect contact with the energized line.

- California Code of Regulations. The California Hazardous Waste Control Law (HWCL), codified in Title 22, Chapter 6.5 of the CCR, is the basic hazardous waste regulation in the State of California. The HWCL implements the RCRA as a "cradle-to-grave" waste management system in California. HWCL specifies that generators have the primary duty to determine whether their wastes are hazardous and to assure its proper management and disposal. HWCL also regulates a number of types of wastes that are not covered by the Federal law under RCRA.

  The Department of Toxic Substances Control (DTSC) is the State agency primarily responsible for enforcing the HWCL. In 1992, California was granted authorization by the USEPA to also enforce the Federal RCRA hazardous waste laws and regulations.

- California Health and Safety Code. The Hazardous Waste Control Act of 1972 (Section 25100 et. seq., H&SC) creates the framework under which hazardous wastes must be managed in California. The act mandates the Department of Toxic Substances Control (DOTC) to develop and publish a list of hazardous and extremely hazardous wastes, and to develop and adopt criteria and guidelines for the identification of such wastes. It also requires hazardous waste generators to file notification statements with California Environmental Protection Agency (CalEPA) and creates a manifest system to be used when transporting such wastes.

[29]/ OSHA standard (29 CFR 1910.269) address work practices to be used during the operation and maintenance of electric power generation, transmission, and distribution facilities, including requirements relating to enclosed spaces, hazardous energy control, work near energized parts, grounding for employee protection, work on underground and overhead installations, line-clearance tree trimming, work in substations and generating plants, and other special conditions and equipment unique to the generation, transmission, and distribution of electric energy.

[30]/ Institute of Electrician and Electronic Engineers, C2-2002, National Electric Safety Code, 2002.

Any business that generates any quantity of hazardous waste is a "hazardous waste generator" (Section 25123.3, H&SC; Title 22 Section 66260.10, CCR).[31]

Section 25534 of the H&SC directs facility owners, storing or handling acutely hazardous materials in reportable quantities, to develop a risk management plan (RMP) and submit it to appropriate local authorities, the USEPA, and the designated local administering agency for review and approval. The RMP must include an evaluation of the likelihood and potential impacts associated with an accidental release, the magnitude of potential human exposure, any preexisting evaluations or studies of the material, the likelihood of the substance being handled in the manner indicated and the material's accident history.

Section 41700 requires that "[n]o person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

California's Proposition 65 (The Safe Drinking Water &Toxic Enforcement Act of 1986) was a voter initiative passed to address citizen concerns about exposure to substances that cause cancer or reproductive toxicity. Proposition 65 requires the Governor to publish and annually update a list of chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm. As required, "no person in the course of doing business shall knowingly discharge or release a chemical known to the state to cause cancer or reproductive toxicity into water or onto or into land where such chemical passes or probably will pass into any source of drinking water, notwithstanding any other provision or authorization of law except as provided in Section 25249.5" (Section 25249.5, H&SC). The law further stipulates that "no person in the course of doing business shall knowingly and intentionally expose any individual to a chemical known to the state to cause cancer or reproductive toxicity without first giving clear and reasonable warning to such individual" (Section 25246.6, H&SC).

In 1993, Senate Bill 1082 (SB1082) added Chapter 6.11 to Division 11 of the H&SC. The bill required the CalEPA to develop and implement a "Unified Hazardous Waste and Hazardous Materials Management Regulatory Program" (Unified Program). In January 1996, the CalEPA adopted implementing regulations (Title 27, Division 1, Subdivision 4, Chapter 1, CCR). The Unified Program consolidated six existing programs regulating hazardous waste and hazardous material management. The Unified Program is implemented at the local level by certified unified program agencies (CUPAs).

The Riverside County Department of Environmental Health - Hazardous Materials Management Division (HMMD) and the San Diego County Department of Environmental Health – Hazardous Materials Division are the CUPAs for Riverside and

[31]/ A generator is a person or business that produces or generates a hazardous waste identified or listed in Title 22 of the CCR or whose act first causes a hazardous waste to become subject to that regulation. A hazardous waste generator must obtain both a federal and State identification number, thereby providing regulators with notification that they are engaged in a regulated hazardous waste activity. Such generators are subject to the hazardous waste regulations outlined in Title 22, Division 4.5, Chapter 12 of the CCR.

San Diego Counties, respectively, and are responsible for regulating hazardous materials business plans and chemical inventory, hazardous waste and tiered permitting, underground storage tanks, and risk management plans.

- California Government Code. Section 831.7 of the CGC provides: "Neither a public entity nor a public employee is liable to any person who participates in a hazardous recreational activity. . .for any damage or injury to property or persons arising out of that hazardous recreational activity." A "hazardous recreational activity" (HRA) is defined as "a recreational activity conducted on property of a public entity which creates a substantial (as distinguished from a minor, trivial, or insignificant) risk of injury to a participant or a spectator." A HRA is further defined by a non-exclusive list of activities that qualify, including diving, skiing, hang gliding, rock climbing, and body-contact sports.

- California Civil Code. As indicated in Section 346 of the California Civil Code: "An owner of any estate or any other interest in real property, whether possessory or nonpossessory, owes no duty of care to keep the premises safe for entry or use by others for any recreational purpose or to give any warning of hazardous conditions, uses of, structures, or activities on such premises to persons entering for such purpose, except as provided in this section. A 'recreational purpose,' as used in this section, includes such activities as fishing, hunting, camping, water sports, hiking, spelunking, sport parachuting, riding, including animal riding, snowmobiling, and all other types of vehicular riding, rock collecting, sightseeing, picnicking, nature study, nature contacting, recreational gardening, gleaning, hang gliding, winter sports, and viewing or enjoying historical, archaeological, scenic, natural, or scientific sites."

- California Labor Code. Sections 6716-6716 of the California Labor Code (CLC) provides for the establishment of standards that protect the health and safety of employees who engage in lead-related construction work, including construction, demolition, renovation and repair. Section 1532.1 in Title 8 of the CCR establishes regulations implement Sections 6716-6717 of the CLC.

- Uniform Building Code. The UBC sets standards to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulations. Local fire agencies require permits for the use or storage of hazardous materials. Permit conditions depend on the type and quantity of the hazardous materials at the facility.

- Uniform Fire Code. The Uniform Fire Code (UFC) contains provisions (Articles 79 and 80) regarding the storage and handling of hazardous materials.

Regulations pertaining to asbestos[32] management during building demolition are established in SCAQMD Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities). This rule is designed to limit asbestos emissions from building demolition activities. The rule requires

[32]/ Asbestos is the name given to a group of six different fibrous minerals (amosite, chrysotile, crocidolite, and the fibrous varieties of tremolite, actinolite, and anthophyllite) that occur naturally in the environment.

buildings to be surveyed for asbestos-containing building materials before building demolition and mandates asbestos-containing building materials removal procedures to limit emissions.

FERC regulates the construction, operation, and maintenance of non-Federal dams that are built for hydropower generation. In addition, most projects that affect navigable waters, occupy Federal lands, or use water power from a government dam require a FERC license to operate. FERC is currently responsible for dam safety at more than 2,600 licensed and exempted dams and related water retention structures. FERC requires all operators to develop emergency action plans (EAPs) that indicate how to protect people and property in the event of a natural disaster or sabotage and how to quickly restore power.[33] Part 12, Subpart C of FERC's regulations provide general requirements for EAPs at hydropower projects.

In addition, for all larger projects, operators must provide a security plan that identifies protective measures and evaluates on-site security systems, as well as a vulnerability assessment that identifies vulnerable project features, threats, the consequences of an attack, and the likely effectiveness of security systems to counter an attack.[34]

4.10 Hydrology and Water Quality

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations, and existing Etiwanda Generating Station and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, hydrology and water quality are not further addressed herein.

4.10.1 Hydrology

The Project area contain several distinct regional topographic features, including the eastern slopes of the Santa Ana and Elsinore Mountains, the Perris Uplands, and the Elsinore-Temecula Trough. The Project area contain gently rolling hills at the lower elevations and steeper slopes at upper elevations, ranging in elevation from 1200 to 3400-feet above msl. The proposed Lake-Case Springs transmission alignment cross the northeast-facing slopes of the Santa Ana Mountains. The proposed Santa Rosa Substation, LEAPS Powerhouse, and most of the Northern (Lake-Santa Rosa) transmission line occurs within the Elsinore-Temecula Trough, which runs along the northeast toe of the Santa Ana Mountains. Portions of the transmission lines also occur within the Perris upland area.

Climate in the Lake Elsinore area is semi-arid, with warm, dry summers and mild winters. Summer temperatures can exceed 100 degrees Fahrenheit but nights are generally cool. Annual precipitation averages 8-12 inches and annual evapotranspiration (ET) averages about 55 inches. A summary of monthly temperature and precipitation for the Lake Elsinore area, based on data spanning 57 years (1948-2005), is shown in Table 4.10-1 (City of Lake Elsinore Climate Summary – Temperature and Precipitation).

[33]/ Federal Energy Regulatory Commission, FERC Security Program for Hydropower Projects, Revision 1, November 15, 2002.
[34]/ Congressional Budget Office, Homeland Security and the Private Section, December 2004, Chapter 4.

Table 4.10-1. City of Lake Elsinore Climate Summary - Temperatures and Precipitation

Month	Temperature (°F)			Precipitation (inches)		
	Mean	Avg Max	Avg Min	Avg	Max	Min
January	51.0	65.3	36.8	2.68	13.94	0.00
February	53.4	67.7	39.0	2.46	11.94	0.00
March	56.3	71/1	41.5	1.79	0.83	0.00
April	60.7	76.4	44.8	0.67	4.27	0.00
May	66.2	82.0	50.3	0.18	2.02	0.00
June	72.7	90.5	54.7	0.02	0.32	0.00
July	78.9	98.0	59.7	0.07	1.67	0.00
August	79.5	98.4	60.7	0.10	3.13	0.00
September	75.2	93.6	56.9	0.24	4.26	0.00
October	66.8	83.9	49.7	0.42	7.66	0.00
November	57.3	73.1	41.6	1.07	7.33	0.00
December	51.4	66.3	36.4	1.65	8.67	0.00
Annual	64.1	80.5	47.7	11.35	23.02	2.71

Source: National Weather Service Cooperative Station 42805 – Elsinore, 1948-2005

4.10.1.1 Surface Water

The proposed Lake-Case Springs transmission alignment crosses over an estimated 60 USGS-depicted blue-line (jurisdictional) drainages. Most of these drainages are considered ephemeral. The route crosses Temescal Wash in the vicinity of the I-15 Freeway and Indian Truck Trail. This watercourse contains consistent flowing water during the winter and spring seasons. In addition, the proposed Lake-Case Springs transmission alignment crosses Los Alamos Creek, a tributary of San Mateo Creek, along its Southern (Santa Rosa-Case Springs) segment. Los Alamos Creek has consistent flowing water during the winter and spring seasons but flows are intermittent during the summer months depending on the amount of rainfall received in the area.

With respect to surface water hydrology, the environmental setting is further described below.

- **Lake Elsinore**. Lake Elsinore is a natural lake and is about 5 miles long and 2 miles wide. The primary source of water to the lake is the San Jacinto River with a drainage area of about 723 square miles, which is the largest part of the 782 square mile drainage area to Lake Elsinore. The remaining watershed consists of smaller tributaries which flow directly into Lake Elsinore and direct rainfall on the lake surface. Canyon Lake (Railroad Canyon Reservoir), which has a storage capacity of about 12,000 acre-feet (AF) and a surface area of 525 acres is located along the San Jacinto River, about 3 miles upstream from Lake Elsinore. The EVMWD operates the reservoir for water supply and storage of water purchased from the Colorado River. Spill from the Canyon Lake Dam into Temescal Creek is relatively rare due to the EVMWD's withdrawals and small inflow values. Spill events typically occur only during high runoff from winter storm events in extremely wet years (1919, 1981, 1983, 1993, and 1995). Table 4.10.1.1 (Daily Discharge Statistics for USGS Gage No. 11070500 – San Jacinto River at Elsinore, California) provides flow data for USGS Gage No. 11070500 located about 2 miles downstream from the Canyon Lake Dam. Natural inflow to Lake Elsinore average 11,380 acre-feet per year (AFY).

Table 4.10.1-1. Daily Discharge Statistics for USGS Gage No. 11070500
San Jacinto River at Elsinore, California (Water Years 1975 to 2004) (cfs)

Month	Mean	Median	Maximum	Minimum	10 Percent Exceedance	90 Percent Exceedance
Annual	23.93	0.63	8,080	0.00	4.80	0.00
October	0.44	0.36	12	0.00	0.82	0.00
November	0.69	0.65	11	0.00	1.30	0.08
December	1.14	0.94	25	0	1.80	0.36
January	41.55	1.10	4490	0.15	8.93	0.48
February	128.84	1.45	8080	0.17	91.30	0.68
March	93.57	1.40	5350	0.00	237.10	0.60
April	18.01	0.96	365	0.01	63.00	0.37
May	8.13	0.57	490	0.00	18.00	0.16
June	0.93	0.26	17	0.00	2.00	0.00
July	0.28	0.10	1.90	0.00	0.99	0.00
August	0.18	0.05	1.60	0.00	0.55	0.00
September	0.26	0.16	2.10	0.00	0.55	0.00

Notes:
cfs – cubic feet per second

Source: United States Geological Survey

Historically, the lake elevation was highly variable and has completely dried out including years 1850, 1880, 1954, and 1959 through 1963. As shown in Figure 4.10.1-1 (Lake Elsinore Elevations [1912-1990]), Lake Elsinore was very low or completely dry thoughout most of the 1950's and 1960's. Conversely, Lake Elsinore spills into Temescal Creek only during extremely wet years (1919, 1981, 1983, 1993, and 1995) and has caused extensive flooding in the City during such periods.

Adjacent and located to the southeast of Lake Elsinore are three other water bodies: Back Basin, Lake Alpha, and Lake Beta. Back Basin is normally dry and is separated from Lake Elsinore by a 2.5-mile-long earthen berm constructed as part of the Lake Elsinore Management Project under the auspices of the Corps, BLM, and Riverside County Flood Control District. This project was completed in the early 1990s to reduce evaporation losses from Lake Elsinore and provide additional flood storage, while improving water quality, habitat, and recreational opportunities associated with Lake Elsinore. The Back Basin berm has an overflow weir at elevation 1,262 feet msl at which point flow from Lake Elsinore enters Back Basin. Lake Alpha and Lake Beta are connected to Lake Elsinore by a 48-inch gated conduit in the levee. These two lakes form a wetland area and are effectively the low spots in the Back Basin.

An unfinished element of the Lake Elsinore Management Project was the establishment of a long-term supplemental water supply for the lake. Planners felt that recycled water would be a preferred source over using scarce potable water for lake level stabilization. As illustrated in Figure 4.10.1-2 (Lake Elsinore Elevations [1992-2002]) the lake elevation steadily declined in recent years.[35, 36]

[35]/ Op. Cit., Public Workshop: Proposed Basin Plan Amendment – Incorporation of Total Maximum Daily Loads (TMDLs) for Nutrients for Lake Elsinore and Canyon Lake, p. 7.

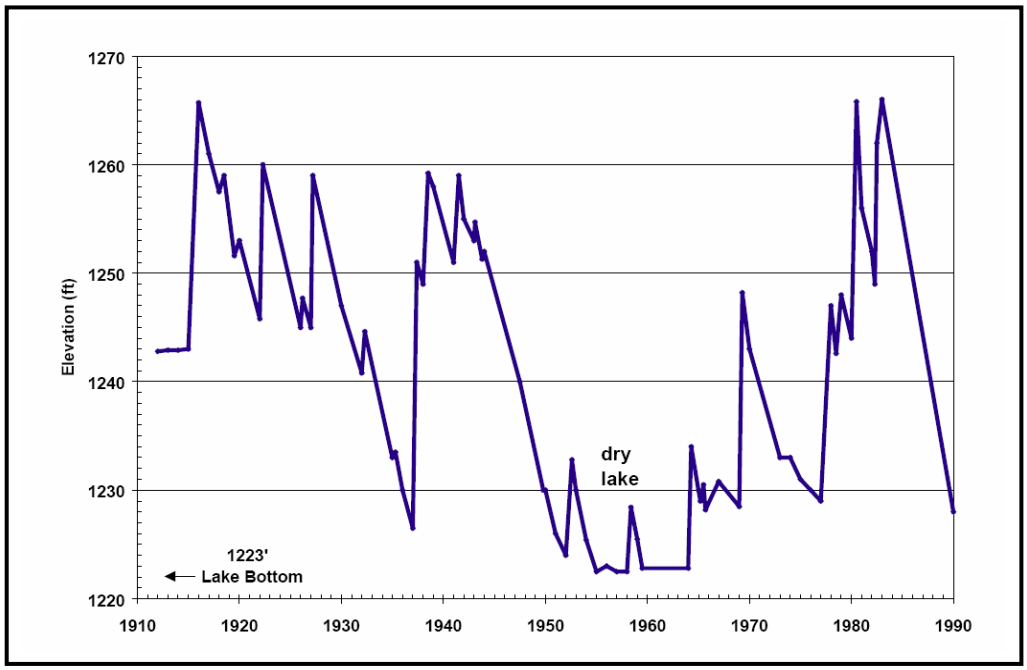


Figure 4.10.1-1. Lake Elsinore Elevations (1912-1990)
Source: California Regional Water Quality Control Board, Santa Ana Region

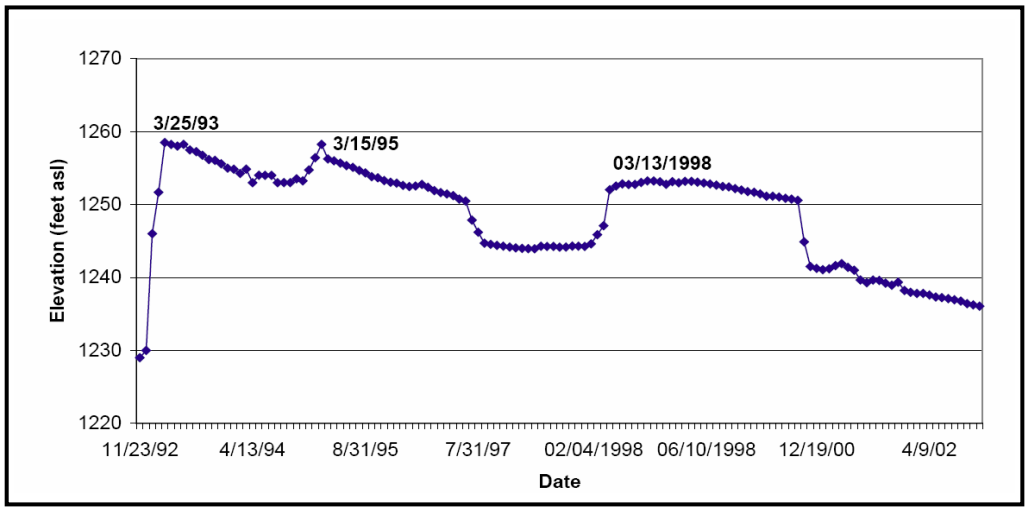


Figure 4.10.1-2. Lake Elsinore Elevations (1992-2002)
Source: California Regional Water Quality Control Board, Santa Ana Region

To address this issue, the EVMWD and the City of Lake Elsinore formed a Recycled Water Task Force charged with determining public opinion on the use of recycled water to supplement Lake Elsinore, identifying the desired actions and outcomes for the use of recycled water, and preparing a white paper on the topic. The task force published its findings in 1997 and concluded that recycled water may be acceptable for supplementing the water in Lake Elsinore provided that Title 22 standards for disinfected tertiary treatment approved uses are met, nutrient removal to within the lowest natural

[36]/ California Environmental Protection Agency, State Water Resource Control Board and Regional Water Quality Control Boards, undated, p. 8 (http://www.calepa.ca.gov/Publications/Reports/AP2002A/Water.pdf).

background levels can be integrated into the next treatment plant upgrade, and a lake water quality monitoring program is implemented. Subsequently, the EVMWD implemented a feasibility study in support of a NPDES permit and, along with the Eastern Municipal Water District (EMWD), began a pilot discharge project in June 2002. With permits to add 4,480 AF of recycled water and up to 5,000 AF of groundwater (from the Island Wells) each year for two years, the pilot discharge project was intended to increase and stabilize lake levels and to test the effects of recycled water discharge on water quality and beneficial uses of the lake. The pilot discharge project was extended through January 2005.

In July 2001, the Joint Watershed Authority filed a Notice of Intent to prepare a Program Environmental Impact Report for the Lake Elsinore Stabilization and Enhancement Project. The stated objectives of this project are the following: (1) stabilization of water level of Lake Elsinore, by maintaining the lake elevation within a desirable operating range (minimum of 1240-feet to a maximum of 1247-feet above msl); (2) improvement of lake water quality (i.e., reduce algae blooms, increase water clarity, increase DO concentrations throughout the water column, and reduce or eliminate fish kills); and (3) enhancement of Lake Elsinore as a regional aesthetic and recreational resource. The Joint Watershed Authority approved the Lake Elsinore Stabilization and Enhancement Project in September 2005.

The primary source for make-up water is EVMWD's Regional Reclamation Plant[37] adjacent to Lake Elsinore. EVMWD relies on Water Rights Permit No. 30520 for an exclusive right to all water discharged from the reclamation plant. EVMWD also can supplement make-up water with water from its Island Wells. EVMWD and TNHC (2005) indicate that no water acquisition rights would be needed to purchase reclaimed water. Additionally, a March 13, 2003, Escrow Agreement manages a Lake Maintenance Fund established as part of the Lake Elsinore Comprehensive Water Management Agreement signed with the City of Lake Elsinore.

Substantial human actions in the watershed and Lake Elsinore itself affect the lake's inflow, elevation, and discharge. Water can flow out of Lake Elsinore through an outlet channel and into Warm Springs Creek and subsequently to Temescal Wash whenever the lake level exceeds 1255-feet above msl. This only occurs under torrential rainfall conditions or when an extended wet period results in abnormally high lake elevations. The bottom elevation of Lake Elsinore is 1,223 feet msl. At an elevation of 1240-feet above msl, Elsinore Lake has a surface area of 3,074 acres and stores 38,519 AF.

Historically, the lake elevation was highly variable and has completely dried out including years 1850, 1880, 1954, and 1959 through 1963 (Dunbar, 1990, as cited in Joint Watershed Authority, 2005). Evaporation losses from Lake Elsinore are substantial, estimated at 56.2 inches per year, and are much larger than the average annual precipitation of 11.6 inches, which contributes to very unstable lake levels. Such evaporation losses translate to 15,500 AFY assuming a nominal elevation of 1245-feet above msl, an elevation that corresponds to a lake area of 3,319 acres.

[37]/ EVMWD's Regional Wastewater Treatment Plant provides tertiary treatment to wastewater such that it can be reused in a variety of applications and is suitable for contact recreation.

Below Lake Elsinore, Temescal Wash flows about 28 miles in a northwesterly direction to its confluence with the Santa Ana River, just upstream of Prado dam (Joint Watershed Authority, 2005). Following the construction of the Back Basin berm and other improvements of the Lake Elsinore Management Project, Lake Elsinore has a 100-year flood elevation of 1263.3-feet above msl and a combined storage of about 150,000 AF, which includes the Back Basin (Joint Watershed Authority, 2005). Prior to this construction, in February 1980, a series of storms caused Lake Elsinore to rise to elevation 1265.7-feet above msl, causing substantial spill into Temescal Creek (personal communication, letter from R. Koplin, Chief, Engineering Division, S.C. Thomas, Senior Civil Engineer, Riverside County Flood Control District, dated August 15, 2003; USACE, 2003). After the flood control improvements were made, the highest peak flow recorded at USGS gage no. 11072100, Temescal Creek near the City of Corona, about 15 miles downstream from Lake Elsinore, was 4,030 cubic feet per second (cfs) on June 9, 2006 (USGS, 2005).

Under normal conditions when Lake Elsinore is not spilling, Temescal Wash receives discharges of highly treated tertiary effluent from the EVMWD Regional Plant and excess recycled water from the EMWD Temescal Valley Water Reclamation Facility (MWH, 2005).

- **Decker Canyon**. The proposed Decker Canyon Reservoir site would be located on the west side of the Elsinore Mountains within the upper drainage of San Juan Creek which does not drain to Lake Elsinore. The Decker Canyon site is located at the headwaters of its drainage basin and would drain only about 90 acres (0.14 square mile). Below the Decker Canyon Reservoir site, San Juan Creek flows generally towards the west and has a 176 square mile drainage area at its point of discharge into the Pacific Ocean at Doheny State Park near Dana Point and Capistrano Beach in Orange County. Stream flows in the Decker Canyon site are seasonal and intermittent. San Juan Creek becomes perennial near the mouth of the basin, owing largely to development and urban runoff (about 35 percent of the watershed is urbanized), possibly due to effluent from waste water treatment plants and similar inflows during the dry season.

  Streamflow in San Juan Creek since 1986 has been measured at USGS Gage No. 11046530, La Novia Street Bridge near San Juan Capistrano, which has a drainage area of 109 square miles. Table 4.10.1-2 (Daily Discharge Statistics for USGS Gage No. 11046530 - San Juan Creek at La Novia Street Bridge near San Juan Capistrano) shows the annual stream flow data for this gage.

Table 4.10.1-2 Daily discharge (cfs) statistics for USGS Gage No. 11046530
San Juan Creek at La Novia Street Bridge near San Juan Capistrano
(Water Years 1986 to 2004) (cfs)

Mean	Median	Maximum	Minimum	10 Percent Exceedance	60 Percent Exceedance
20.6	0.90	5700	0	20	Less than 0.1

Source: United States Geological Survey

4.10.1.2 Groundwater

The Project area is located within the South Coast Hydrologic Region. The South Coast Hydrologic Region has 56 delineated groundwater basins, eight basins of which are located in Subregion 8 (Santa Ana) and 27 basins are located in Subregion 9 (San Diego).

For the proposed TE/VS Interconnect, the area of the proposed Lake Switchyard is located within the Temescal Groundwater Subbasin (Basin No. 8.209). The subbasin underlies the southwest part of the upper Santa Ana valley. The Elsinore fault zone lies along the western boundary and the Chino fault zone crosses the northwestern tip of the subbasin. These fault zones are possible groundwater barriers. Dominant recharge is from percolation of precipitation on the valley floor and infiltration of stream flow within tributaries exiting the surrounding mountains and foothills.[38]

A portion of the proposed 230-kV transmission line upgrade traverses the San Luis Rey Valley Groundwater Basin (Basin No. 9.7). That groundwater basin underlies an east-west trending alluvium-filled valley in San Diego County. The major hydrologic feature is the San Luis Rey River which drains the valley overlying the basin. The basin is recharged by imported irrigation water applied on upland areas and by storm-flow in the San Luis Rey River and its tributaries. Movement of groundwater in the alluvial aquifer is westward towards the Pacific Ocean.[39]

The groundwater setting with respect to the pumped storage facility is described below.

- **Elsinore Groundwater Basin**. Lake Elsinore is located in the Elsinore Groundwater Basin (Basin No. 8-4). The basin underlies the Elsinore Valley in western Riverside County, and extends under a surface area of 40.2 square miles in Elsinore Valley. The basin is bounded on the southwest by the Santa Ana and Elsinore Mountains along the Willard fault, a play of the active Elsinore fault zone. The basin adjoins the Temecula Valley Groundwater Basin on the southeast at a low surface drainage divide. The basin is bounded on the northwest by the Temescal Subbasin of the Upper Santa Ana River Valley Groundwater Basin at a constriction in Temescal Wash. The basin is bounded on the northeast by non-water-bearing rocks of the Peninsular Ranges along the Glen Ivy fault.

  Lake Elsinore lies in a closed basin formed between strands of the active Elsinore fault zone. The principal recharge of the basin is from infiltration of stream flow through alluvial fan deposits near the edges of the basin and through gravel deposits along the course of the San Jacinto River. Other contributing sources include infiltration from unlined channels, underflow from saturated alluvium and fractures within the surrounding bedrock mountains, and spreading of water in recharge basins.[40] Additional information concerning the Elsinore Groundwater Basin is contained in the EVMWD's "Elsinore Basin Groundwater Management Plan"

[38]/ Ibid., Upper Santa Ana Valley Groundwater Basin, Temescal Subbasin, updated January 20, 2006.
[39]/ Ibid., San Luis Rey Groundwater Basin, updated February 27, 2004.
[40]/ Ibid., Elsinore Groundwater Basin, updated January 20, 2006.

Lake Elsinore is underlain by layers of clay, which greatly impedes the downward movement of groundwater because clay acts as an impervious barrier. Due to the geological layout and the surrounding faults, the Elsinore groundwater basin is essentially a closed groundwater basin. The groundwater level in the basin has dropped considerably with estimates of at least a 100-foot drop having occurred in the first half of the twentieth century alone (Joint Watershed Authority, 2005). Until recently, in addition to groundwater withdrawal for irrigation and other needs, groundwater has been pumped from the EVMWD Island Wells, near Lake Elsinore to provide an additional source of water for Lake Elsinore under the pilot discharge project in an attempt to increase and stabilize lake levels. As indicated in Table 4.10.1-3 (Estimated Groundwater Basin Budget for the Elsinore Groundwater Basin), an ongoing deficit of about 1,800 AFY is estimated.

Table 4.10.1-3. Estimated Groundwater Basin Budget for the Elsinore Groundwater Basin

Location	Average Location (1990–2000) (acre-feet per year)
Inflows	
Precipitation infiltration from rural areas	2,000
Precipitation infiltration from urban areas	800
Recharge from San Jacinto River	1,700
Recharge from Lake Elsinore	0
Return flows from applied water	600
Return flows from septic systems	1,000
Return flows via subsurface inflow	0
Total inflows	6,100
Outflows	
Groundwater pumping	7,900
Surface outflow	0
Subsurface outflow	0
Total outflows	7,900
Net Deficit	1,800

Source: MWH, 2003, as cited in Joint Watershed Authority, 2005

EVMWD developed a draft groundwater management plan for the Elsinore Basin, which was approved by its Board of Directors on March 24, 2005. The objective of the plan is to reverse the ongoing decline in groundwater levels and provide a long-term sustainable groundwater supply by recharging the basin with injection wells that would be located in the Lake Elsinore Back Basin and on the northwest side of the lake.

- **San Juan Creek Groundwater Basin**. The San Juan groundwater basin is a shallow basin that is essentially an underground flowing stream with limited storage capabilities. It is located under the San Juan Creek Watershed and tributary valleys in the southern part of Orange County, and is bounded to the west by the Pacific Ocean. Projects supporting groundwater recovery in the San Juan Creek groundwater basin have been initiated (Orange County, 2005).

The part of the groundwater basin near the area of the proposed Decker Canyon Reservoir site contains canyon bottomlands that are covered by alluvium and underlain by granitic bedrock. Evaporation amounts for the higher elevations associated with Decker Canyon are estimated to be 38.2 inches per year, slightly lower than the 56.2 inches per year at Lake Elsinore.

With regards to San Juan Creek, the USACE notes that groundwater exists in a generally narrow, shallow alluvial valley fill that has been deposited in the San Juan Canyon area and its tributaries. Groundwater in these alluvial fill areas is unconfined. Groundwater studies indicate the alluvial fill ranges from reported depths of 200 feet at the coast to zero at the end of the small alluvial fingers tributary to the main canyons. The main structural feature influencing groundwater movement is the Cristianitos fault, which traverses the area in a north-south direction and crosses San Juan Canyon at a narrows, about 3.5 miles upstream from the confluence of San Juan and Trabuco Creeks. This fault and narrows separate the groundwater alluvium into an upper and lower area.[41]

4.10.1.3 Water Quality

The proposed Lake-Case Springs transmission alignment crosses an estimated 60 USGS-depicted blue-line (jurisdictional) drainages. Most of these drainages are considered ephemeral. The transmission route, however, crosses two major watercourses that contained flowing water during the Project's general biological surveys (Los Alamos Creek and Temescal Wash). The Applicant is not aware of any available water quality data from those drainages that are intersected by the transmission line facilities. With respect to the proposed pumped storage facilities, water quality information is described below relative to existing water bodies and water quality constituents.

- **Lake Elsinore**. Lake Elsinore's morphology and location in a rapidly urbanizing area and upstream land use activities contribute to the quality of storm-water runoff that affects the water quality in the San Jacinto River and, ultimately, Lake Elsinore (Joint Watershed Authority, 2005). Consequently, the overall water quality of Lake Elsinore typically does not meet applicable water quality standards, and the California Regional Water Quality Control Board, Santa Ana Region (SARWQCB) has listed Lake Elsinore as impaired under Section 303(d)[42] of the CWA for nutrients, organic enrichment/low dissolved oxygen (DO), sedimentation/siltation, and unknown toxicity.

  Lake Elsinore water quality objectives are set by the SARWQCB and published in the "Santa Ana Basin Plan" (1995). According to the "Santa Ana Basin Plan," the existing beneficial uses within Lake Elsinore[43] include contact recreation (REC1), non-contact recreation (REC2), warm freshwater habitat (WARM), and wildlife habitat (WILD).

[41]/ Op. Cit., San Juan Creek Watershed Management Study, Orange County, California, Feasibility Phase, Hydrology Appendix, p. 82.

[42]/ Under Section 303(d) of the Clean Water Act, states are required to submit a list of waters for which effluent limits will not be sufficient to meet all state water quality standards. The 303(d) listing process includes waters impaired from point and non-point sources of pollutants. States must also establish a priority ranking for the listed waters, taking into account the severity of pollution and uses. USEPA regulations that govern 303(d) listing can be found in 40 CFR 130.7.

[43]/ In 1988, the SWRCB adopted the Sources of Drinking Water Policy (Resolution No. 88-63) that directed the SARWQCB and the SDRWQCB to add the Municipal and Domestic Supply (MUN) Beneficial Use for all waterbodies not already so designated, unless they met certain exception criteria. Lake Elsinore is excepted under this provision.

Table 4.10.1-4 (Beneficial Use Designation Definitions) shows the beneficial use designation definitions. Table 4.10.1-5 (Applicable Water Quality Objectives for Waters Potentially Affected by the Proposed Project) presents objectives for algae, temperature, turbidity, DO, pH, and total inorganic nitrogen.

Lake Elsinore is a large, shallow lake marking the terminus for flows in the San Jacinto River. Development throughout the watershed has led to stream diversions and groundwater withdrawals preventing surface flows from reaching Lake Elsinore in all but the wettest years. Its high evaporation rate (56.2 inches annual average) coupled with its low annual precipitation (11.6 inches annual average) and relatively small watershed area results in a shallow lake for most of the year (Joint Watershed Authority, 2005). Annual precipitation and runoff vary widely, and so do lake levels along with the amount of exposed shoreline. Throughout its history, Lake Elsinore has been subject to periods of extreme flooding or drying due to the semi-arid climate and varying runoff amounts.

The quality of the lake is also a function of lake levels. As lake levels fall because of low inflow or high evaporative losses, lake constituents such as nutrients and salinity become concentrated, and DO falls as the temperature of the shallower water rises in the summer (Joint Watershed Authority, 2004). These conditions are accompanied by algal blooms (exacerbating DO depletion), odors, and fish kills.

- **San Juan and San Mateo Creeks**. Surface water in the upper San Juan Creek Watershed in proximity to the proposed Decker Canyon upper reservoir site is intermittent and directly related to precipitation. Because of the natural setting, surface flows originating from the upper watershed are of good quality during the brief times there is runoff; typically during winter rainy season. This contrasts with conditions in the lower watershed near the coast as creek water (limited groundwater mixed with urban nuisance flows) is strongly influenced by the expansive urban development surrounding the lower reaches and is consequently considered impaired under Section 303(d) for pathogens (specifically coliform bacteria). The San Mateo Creek Watershed (south of San Juan Creek Watershed where the Southern [Santa Rosa-Case Springs] segment of the transmission alignments would be located) is similar to San Juan Creek in that the upper, mountainous creek beds are often void of running water. The lower portion of the San Mateo Creek, which typically has some water, flows through Camp Pendleton, and it has been compromised by the USMC on-base's activities although not significantly enough to require listing under Section 303(d).

  Both San Juan Creek and San Mateo Creek watersheds are under the jurisdiction of the California Regional Water Quality Control Board, San Diego Region (SDRWQCB) and subject to provisions of the "San Diego Basin Plan" (1994). The designated beneficial uses of San Juan Creek include agricultural and industrial process supply, contact and non-contact recreation, warm and cold fresh water habitat, and wildlife habitat. The designated beneficial uses of San Mateo Creek include REC1, REC2, WARM, COLD, WILD, RARE, and SPWN. Table 4.10.1-5 (Applicable Water Quality Objectives for Waters Potentially Affected by the Proposed Project) presents objectives for algae, temperature, turbidity, DO, pH, and total inorganic nitrogen.

Table 4.10.1-4. Beneficial Use Designation Definitions

Beneficial Use	Definition
AGR	Agricultural Supply waters are used for farming, horticulture, or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.
COLD	Cold Freshwater Habitat waters support coldwater ecosystems that may include, but are not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.
IND	Industrial Service Supply waters are used for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well re-pressurization.
RARE	Rare, Threatened or Endangered Species waters support habitats necessary for the survival and successful maintenance of plant or animal species designated under state or Federal law as rare, threatened or endangered.
REC1	Water Contact Recreation waters are used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses may include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and use of natural hot springs.
REC2	Non-contact Water Recreation waters are used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.
SPWN	Spawning, Reproduction, and Development waters support high-quality aquatic habitats necessary for reproduction and early development of fish and wildlife.
WARM	Warm Freshwater Habitat waters support warmwater ecosystems that may include, but are not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.
WILD	Wildlife Habitat waters support wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.

Source: California Regional Water Quality Control Board, Santa Ana Region, 1995; Califoria Regional Water Quality Control Board, San Diego Region, 1994

Table 4.10.1-5. Applicable Water Quality Objectives for Waters Potentially Affected by the Proposed Project

Parameter	Santa Ana Basin Plan Objective	San Diego Basin Plan Objective
Algae	Waste discharges shall not contribute to excessive algal growth in inland surface receiving waters.	Does not exist.
Temperature	The temperature of waters designated WARM shall not be raised above 90°F June through October or above 78°F during the rest of the year as a result of controllable water quality factors. Lake temperatures shall not be raised more than 4°F above established normal values as a result of controllable water quality factors.	Natural water temperatures of basin waters shall not be altered unless it can be demonstrated to the satisfaction of the San Diego Water Board that such alteration does not affect beneficial uses.
Turbidity	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits: 0–50 NTUs not to exceed 20%, 50–100 NTU increases not to exceed 10 NTU, greater than 100 NTUs not to exceed 10%.	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Inland surface waters shall not contain turbidity in excess of 20 NTUs more than 10% of the time during any 1-year period.
Dissolved Oxygen	Depressed below 5 mg/l for waters designated WARM, as a result of controllable water quality factors. In addition, waste discharges shall not cause the median DO concentration to fall below 85% of saturation or the 95th percentile concentration to fall below 75% of saturation within a 30-day period.	DO concentrations shall not be less than 5.0 mg/l in inland surface waters with designated MAR or WARM beneficial uses or less than 6.0 mg/l in waters designated COLD beneficial uses. The annual mean DO concentration shall not be less than 7 mg/l more than 10% of the time.
pH	The pH of inland surface waters shall not be raised above 8.5 or depressed below 6.5 as a result of controllable water quality factors.	The pH value shall not be changed at any time more than 0.2 pH units from that which occurs naturally.
Total Inorganic Nitrogen	1.5 mg/l	Does not exist.
Notes: mg/l – milligrams per liter; NTUs – Nephelometric turbidity units		

Source: Santa Ana Water Board, 1995; San Diego Water Board, 1994

- **Water temperature**. The SARWQCB and others have been involved in water quality monitoring since June 2002 as part of improvement projects as discussed in Section 3.2 (Cumulatively Affected Resources). Since 2002, vertical lake sample profiles were conducted at over 10 positions located throughout Lake Elsinore. Vertical profiles taken at sampling site 9 (the deepest sampling site located in the central part of the lake) show strong seasonal differences in temperature, with daytime surface summer water temperatures reaching 29 to 30° Celsius (C), while the lower water column was typically 25 to 27°C. A transition to cooler temperatures begins in the fall, with the surface temperatures cooling to approximately 20°C in October. Water column temperatures then cool further, with temperatures ranging from 12 to 14°C from November to March. The lake generally begins warming in April, with modest stratification present during this time, while strong heating and stratification were observed in late May to early June.

  The Applicant filed with FERC water temperature data for waters in Decker Canyon in the upper San Juan Creek Watershed and reported temperatures between 13.3 and 17.0°C (4 field measurements taken April 28, 2005, post precipitation event). No water temperature data were collected for waters in San Mateo Creek in the upper San Mateo Creek Watershed. Decker Canyon only experiences surface flows during precipitation events. Sampling to date has not isolated the difference between storm water and seepage. San Mateo Creek only experiences surface flows during storm events, and temperature data do not exist for this watershed.

- **Dissolved oxygen**. The SARWQCB has listed Lake Elsinore as impaired for failing to meet numerous Santa Ana Basin Plan objectives, including DO objectives. Measurements that are below state objectives are continually recorded throughout the water column for the majority of the year. Low DO levels in the lake result from aerobic decomposition of algae and other organic material in the bottom waters, nighttime respiration of phytoplankton, plankton blooms, and higher water temperature (warm water contains less oxygen than cold water) during summer months. The Santa Ana Water Board has developed and implemented measures from the draft Total Maximum Daily Load (TMDL) for nutrients to improve water quality and reverse the presently compromised conditions.

  DO levels within Lake Elsinore exhibit spatial and temporal trends that vary with lake temperature and depth, which are dynamic throughout the year. In August 2002, oxygen was substantially depleted across the lake, resulting in a fish kill (levels recorded below 1 milligram per liter (mg/l) in the lower third of the water column). As the lake began to mix in October and November 2002, the lake generally exhibited higher concentrations but still reduced DO levels (5 mg/l) near the sediments relative to the surface (8 to 10 mg/l). This period of mixing was followed by a sharp decline in DO throughout the water column in early December 2002. Conversely, Lake Elsinore was generally well oxygenated during the winter of 2003. Historically, DO levels have been observed between 0.1 and 16 mg/l and vary greatly with season, temperature, and depth.

  The Applicant collected a single DO measurement of 8.9 mg/l from a sample collected from Decker Canyon in April 28, 2005. No DO data exist for waters in the upper San Mateo Creek Watershed. San Mateo Creek Watershed, due to its relative similarity

(intermittent, upper-watershed setting in the same southern California mountain range) to Decker Canyon is assumed to exhibit similar water quality traits. As such, water (when present) within these upper watersheds is likely to be well oxygenated.

- **Nutrients.** The SARWQCB recognizes that the narrative water quality objectives set to protect the beneficial uses of Lake Elsinore are not being met as a result of high nutrient concentrations stimulating excessive algae growth and compromising DO levels. As such, Lake Elsinore is listed as impaired under Section 303(d) for nutrients, and this impairment requires the establishment of a TMDL for the pollutants causing the impairment (nitrogen and phosphorus).

  Lake Elsinore is technically eutrophic in that it exhibits the following characteristics: (1) large algae blooms (chlorophyll-a >50 micrograms per liter [µg/l]) and common presence of blue-green algae (cyanobacteria), specifically Microcystis; (2) large seasonal and daily swings in concentrations of DO; anoxic values that have been recorded in deeper waters during most summers; (3) low water clarity; Secchi disc values less than 1 meter; (4) high concentrations of inorganic nitrogen; and (5) high concentrations of total phosphorus. These observations substantiate the pilot "Lake Elsinore Recycled Water Project," an effort that enables EVMWD to discharge treated wastewater into Lake Elsinore to maintain higher lake levels in hope of minimizing effects from high evaporative losses and low inflow rates. This effort is designed to help restore the water quality of Lake Elsinore to meet state objectives.

  Sampling results show that the total phosphorus concentration in Lake Elsinore has generally been increasing between 2002 and 2004. Total phosphorus concentrations vary with the season but were generally observed at approximately 0.3 mg/l throughout the second half of 2002 and rising to approximately 0.5 mg/l in early 2004.

  Total nitrogen concentrations were variable between 2000 and 2004. Average summer concentrations were approximately 3.0 mg/l in 2000 and 2001 rising to approximately 5.0 mg/l in 2002 and 2003. Winter total nitrogen concentrations for all sampled sites from 2003 to 2004 averaged 11.8 mg/l; however, data presented by the Applicant exhibit considerable variability between days and pronounced swings seasonally and annually.

  Sampling information filed by the Applicant indicates that the total nitrogen:total phosphorus ratio was variable since sampling began in summer 2000. From summer 2000 through summer 2002, there were periods of strong phosphorus limitation (ratios up to 50:1), interrupted with periods during the winter of co-limitation (~15:1) and brief periods of nitrogen limitation (~5:1). The general trend since June 2002 has been moving toward nitrogen limitation.

  Field sampling was conducted by the Applicant to characterize the waters of Decker Canyon following a precipitation event. The total nitrogen concentration below the Decker Canyon upper reservoir site was reported at 1.4 mg/l. All other samples were below the reporting limit. No samples has been collected by the Applicant within the upper San Mateo Creek Watershed.

- **Algae** (Chlorophyll and Transparency). According to the SARWQCB, hyper-eutrophication (over enrichment of nutrients) of nitrogen and phosphorus is the most severe water quality problem in Lake Elsinore (SARWQCB, 2001). These elevated nutrient concentrations cause algae blooms that also result in low DO levels, which further result in fish kills. The presence of unsightly amounts of algae conflicts with the beneficial uses of Lake Elsinore, specifically WARM, REC-1, and REC-2, and is directly linked to the implementation of the nutrients TMDL. Chlorophyll concentrations show a slight seasonal trend with peaks in the late spring-summer. The SARWQCB recorded a maximum concentration of about 400 µg/l in fall 2002; however, 200 µg/l is a more typical concentration observed since 2003. Algae blooms are known to occur in the lake and result in floating mats of algae. These blooms typically occur in the summer to fall season but could potentially occur at anytime during the year when there are sufficient nutrients and ample sunlight. Secchi depths, an indicator of the lake's transparency, have been relatively stable since June 2002 at approximately 0.2 meter.

  Samples from the San Juan Creek and San Mateo Creek watersheds are not available to include in this discussion. Given the remote nature and the intermittent nature of the waters potentially affected by the Project and the low nutrient concentrations observed in field samples, it is unlikely that large amounts of algae as a result of nutrient enrichment would compromise the waters.

- **pH**. The SARWQCB sampling program has observed that the pH of Lake Elsinore has averaged slightly greater than 9 between April 2002 and June 2004, although the pH profiles show some vertical and temporal trends. The range of pH values recorded during this time period is 8.7 to 9.5. High pH values are often the result of the respiration of aquatic organisms (e.g., algae). The build up of carbon dioxide in the water leads to a chain of chemical reactions that ultimately increase the alkalinity of the water (increased pH). The Applicant reported pH values between 7.42 and 7.65 from samples taken Decker Canyon in December 2004 and April 2005 shortly after rain events. Information about the water quality of upper San Mateo Watershed is not available, but is likely to be similar to the waters in the upper San Juan Watershed.

  The groundwater in the San Juan Creek watershed is typically high dissolved solids and salts. Table 4.10.1-6 (San Juan Basin Water Quality Data [1987]) provides general groundwater quality data for 1987.[44] In general, groundwater quality problems in the San Juan Creek watershed are related to high dissolved solids content, rather than bacteriological, toxins, or heavy metal concentrations.[45]

Table 4.10.1-6. San Juan Basin Water Quality Data (mg/l)

Subbasin	TDS	SO_3	Iron	Mn
Lower San Juan	1500-2000	500-750	>2.0	0.5-1.5
Middle San Juan	500-1000	250-500	0.3-2.0	0.5-1.5
Upper San Juan	0-500	0-250	0-0.3	0-0.05

Source: Capistrano Valley Water District

[44]/ Ibid., p. 84.
[45]/ Op. Cit., San Juan Creek Watershed Management Plan, p. III-7.

4.10.2 Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's regulatory setting.

- Federal Clean Water Act. The Federal Water Pollution Control Act of 1972 (33 U.S.C. 1251 et seq.), known as the Federa; Clean Water Act (CWA), established a national policy designed to "restore and maintain the chemical, physical and biological integrity of the Nation's waters." The CWA requires states to develop water quality standards consisting of a detailed description of the hydrologic descriptions of the waterbodies, the beneficial uses which apply to each waterbody, and the water quality criteria (objectives) which will protect those uses. As specified, "[e]ach state must specify appropriate water uses to be achieved and protected. The classification of the waters of the state must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish, and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation (40 CFR 131.11[a]).

  In 1972, the CWA was amended to require National Pollutant Discharge Elimination System (NPDES) permits for the discharge of pollutants to waters of the United States (WoUS) from any point source.[46] In 1987, the CWA was further amended to establish a framework for regulating urban runoff. The 1987 amendment required that the USEPA establish regulations for permitting (under the NPDES permit program) of municipal and industrial storm water discharges. The USEPA published final regulations regarding storm water discharges on November 16, 1990 (40 CFR Parts 122, 122, and 124). The regulations require that municipal separate storm sewer system (MS4) discharges to surface waters be regulated by a NPDES permit.[47] Under the 1987 amendment and implementing regulations, storm water runoff pollution must be controlled to the maximum extent practicable (MEP).

  The CWA requires states to adopt (and the USEPA to approve) water quality standards for water bodies.[48] Water quality standards consist of designated beneficial uses for a particular water body, along with water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations or levels of constituents or narrative statements that represent the quality of water that supports a particular use. Because California has not established a complete list of acceptable water quality criteria, the USEPA established numeric water quality criteria for certain toxic constituents in the form of the California Toxics Rule (CTR) (40 CFR 131.38). Water bodies not meeting water quality standards are deemed "impaired" and, under Section 303(d) of the CWA, are placed on a list of impaired waters for which a TMDL must be developed for the

[46]/ A "point source" is defined as "any discernible, confined, and discrete conveyance" of pollutants to a water body. The definition of discrete conveyance includes, but is not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged.

[47]/ The CWA requires that MS4 permits effectively prohibit non-storm water discharges into the storm sewers as well as reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and systems, design and engineering methods, and other provisions appropriate for the control of such pollutants (Source: United States Environmental Protection Agency, Preliminary Data Summary of Urban Storm Water Best Management Practices, August 1999).

[48]/ In California, the USEPA has delegated responsibility for implementation of portions of the CWA to the State Water Resources Control Board (SWRCB) and its nine regional water quality control boards. The Regional Water Quality Control Board, Santa Ana Region (SARWCB) and the California Regional Water Quality Control Board, San Diego Region (SDRWQCB) are the local boards with jurisdiction over the Project sites.

impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, non-point, and natural sources that a water body may receive without exceeding applicable water quality standards (with a "factor of safety" included). Once established, the TMDL is allocated among current and future pollutant sources to the water body. TMDL is a number that represents the assimilative capacity of water for a particular pollutant or the amount of a particular pollutant that water can receive without impact to its beneficial uses.

The CWA effectively prohibits discharges of storm water from most construction sites unless the discharge is in compliance with a NPDES permit. The SWRCB is the permitting authority in California and has adopted a "General Permit for Stormwater Discharges Associated with Construction Activities" (General Permit)[49] governing storm water and authorized non-storm water flows from all construction sites one acre and larger throughout California. The General Permit requires construction-site operators to develop and implement a storm water pollution prevention plan (SWPPP) and an associated monitoring program and, for projects discharging directly into waters impaired due to sedimentation or involving potential discharge of non-visible contaminants that may exceed water quality objectives, a storm water sampling and analysis strategy (SWSAS) to meet CWA technology standards and to prevent construction sites from contributing to excursions of water quality standards.

- National Flood Insurance Reform Act. The Federal Emergency Management Agency (FEMA), a part of the Department of Homeland Security, prepares flood insurance rate maps (FIRM) in order to identify those areas that are located within the 100-year floodplain boundary,[50] termed "Special Flood Hazard Areas" (SFHAs). A 100-year flood does not refer to a flood that occurs once every 100 years but refers to a flood level with a one percent chance of being equaled or exceeded in any given year.[51] The SFHAs are subdivided into insurance risk rate zones. Areas between the 100 and 500-year flood boundaries are termed "moderate flood hazard areas." Areas located outside the 500-year flood boundary, are termed "minimal flood hazard areas."

- Executive Order 11988 – Floodplain Management. Executive Order (EO) 11988 directs all Federal agencies to seek to avoid, to the extent practicable and feasible, all short- and long-term adverse impacts associated with floodplain modifications and to avoid direct and indirect support of development within 100-year floodplains whenever there is a reasonable alternative available.

- Cobey-Alquist Flood Plain Management Act. The Cobey-Alquist Flood Plain Management Act, codified in Sections 8400-8415 of the CWC, states that a large portion of land resources of the State are subject to recurrent flooding. The public interest necessitates sound development of land use, as land is a limited, valuable, and

[49]/ State Water Resources Control Board, National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity, SWRCB Order No. 99-08-DWQ, NPDES No. CAS000002.

[50]/ As defined in the Standard Flood Insurance Policy (SFIP), "flood" is defined as "[a] general and temporary condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waters or from the unusual and rapid accumulation or runoff of surface waters from any source."

[51]/ Modern hydrologists define floods in terms of probability, as expressed in percentage rather than in terms of return period (recurrence interval). Return period (the N-year flood) and probability (p) are reciprocals, that is, $p = 1/N$. A flood having a 50-year return frequency (Q_{50}) is commonly expressed as a flood with the probability of recurrence of 0.02 (2 percent chance of being exceeded) in any given year.

irreplaceable resource, and the floodplains of the State are a land resource to be developed in a manner that, in conjunction with economically justified structural measures for flood control, will result in prevention of loss of life and of economic loss caused by excessive flooding.

The primary responsibility for planning, adoption, and enforcement of land-use regulations to accomplish floodplain management rests with local levels of government. It is the State's policy to encourage local government to plan land-use regulations to accomplish floodplain management and to provide State assistance and guidance.

- California Water Code. The Porter-Cologne Water Quality Control Act (Division 1, Chapter 2, Article 3, Section 13000 et seq., CWC) (Porter-Cologne) constitutes a comprehensive plan for protecting the quality and maximizing the beneficial use of the State's waters.

  As specified therein, the State "Legislature finds and declares that. . . the quality of all the waters of the State shall be protected for use and enjoyment by the people of the state... activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable."[52] Under Porter-Cologne, the State's RWQCBs were required to: (1) formulate and adopt water quality control plans for all areas within the region[53]; (2) establish water quality objectives that "will ensure the reasonable protection of beneficial uses"[54] of State's waters; and (3) prescribe waste discharge requirements governing discharges to land and waters within the regions. Porter-Cologne establishes the principal California program for water quality control. Under Porter-Cologne, the SWRCB is mandated to implement the provisions of the CWA, which delegation is authorized by that Federal act.

  To implement and enforce the provisions of Porter-Cologne and the CWA, Porter-Cologne divides the State into nine regional boards that, under the guidance and review of the SWRCB, implement and enforce the provisions of both the State and Federal statutes. The Project is located within Region 8 (Santa Ana) and Region 9 (San Diego) and falls under the jurisdiction of the SARWQCB and SDRWQCB.

  As further indicated in the CWC, Section 100 declares that it is policy of the State that "the water resources of the state be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such water is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare." Under Section 13000, the Legislature declared that the people of the State have a primary interest in the conservation, control, and utilization of the water resources, and that the "quality of all the waters of the State shall be protected for use and enjoyment by the people of the state. The Legislature further finds and declares that activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to

[52]/ Section 13000, California Water Code.
[53]/ Section 13240, California Water Code.
[54]/ Section 13241, California Water Code.

be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible."

As specified in Section 13751, every person who digs, bores, or drills a water well, cathodic protection well, ground water monitoring well, or geothermal heat exchange well, abandons or destroys such a well, or deepens or reperforates such a well shall file with the California Department of Water Resources (Department) a report of completion within sixty days from the date that construction, alteration, abandonment, or destruction is complete. Section 13800.5(a)(1) further specifies that the Department shall develop recommended standards for construction, maintenance, abandonment, or destruction. Those standards are contained in the Department's "California Well Standards, Bulletin 74-90 (Supplement to Bulletin 74-81)."

- California Code of Regulations. The California Department of Health Services (DHS) is responsible for establishing uniform Statewide reclamation criteria to ensure that the use of recycled water is not detrimental to public health and protects beneficial uses. The existing DHS criteria include treatment requirements for recycled water used to create or augment recreational impoundments. In Title 22, Division 4, Chapter 3 (Water Recycling Criteria), the DHS sets forth water quality criteria, treatment process requirements, and treatment reliability criteria for reclamation operations. Section 60305 specifies that recycled water used as a source supply for non-restricted recreational impoundment shall be disinfected tertiary recycled water subjected to conventional treatment. Disinfected tertiary recycled water that has not received conventional treatment may be used for non-restricted recreational impoundment provided that the recycled water is monitored for the presence of pathogenic organisms in accordance with certain conditions. The degree of treatment specified represents an approximately 5-log reduction in the virus content of the water. The DHS has determined that this degree of virus removal is necessary to protect the health of people using the impoundments for water contact recreation. The DHS has developed wastewater disinfection guidelines[55] for discharges of wastewater to surface waters where water contact recreation (REC1) is a beneficial use. The guidelines recommend the same treatment requirements for wastewater discharges to REC1 waters as those stipulated in Title 22 for supply of recycled water to non-restricted recreational impoundments.

  Pursuant to Section 8589.5 of the CGC, inundation maps showing the areas of potential flooding in the event of sudden or total failure of any dam, the partial or total failure of which the Office of Emergency Services (OES) determines, after consultation with the California Department of Water Resources, would result in death or personal injury, shall be prepared and submitted to the OES. Sections 2575-2578.3 in Title 19 (Dam Inundation Mapping Procedures) establish State regulations in compliance therewith.

- California Fish and Game Code. The CF&GC contain several provisions that regulate nonpoint source discharges. As specified under Section 5650 of the CFGC, except as authorized by a State or Federal permit, "it is unlawful to deposit in, permit to pass into, or place where it can pass into the waters of this State" any "petroleum or residuary

[55]/ California Department of Health Services, Wastewater Disinfection for Health Protection, 1987.

product of petroleum, or carbonaceous material or substance," any "sawdust, shavings, slabs, edgings," and any "substance or material deleterious to fish, plant life, or bird life."

- California Antidegradation Policy. California's Antidegradation Policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Waters in California (SWRCB Resolution No. 68-16), restricts degradation of surface and ground waters. In particular, this policy protects waterbodies where existing quality is higher than necessary for the protection of beneficial uses. Under the Antidegradation Policy, any actions that can adversely affect water quality in all surface and groundwaters must: (1) be consistent with maximum benefit to the people of the State; (2) not unreasonably affect present and anticipated beneficial use of the water; and (3) not result in water quality less than that prescribed in water quality plans and policies. Any actions that can adversely affect surface waters are also subject to the Federal Antidegradation Policy (40 CFR 131.12) developed under the CWA.

4.11 Land Use and Planning

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations, and existing Etiwanda Generating Station and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, land use and planning are not further addressed herein.

4.11.1 Land Use and Planning Environmental Setting

- **City of Lake Elsinore**. As illustrated in Figure 4.11.1-1 (City of Lake Elsinore - Sphere of Influence),[56] the City of Lake Elsinore is located approximately 22 miles southeast of the City of Corona, 73 miles southeast of the City of Los Angeles, and 74 miles north of the City of San Diego. It is bounded by the CNF on the south, the Gavilan Hills on the north, the Temescal Valley on the west, and the Sedco Hills on the east. The City encompasses a land area of approximately 24,823 acres and contains a sphere of influence (SOI) covering 25,063 acres.[57,58]

  The SOI, as adopted by the Riverside County Local Agency Formation Commission (LAFCO), represents the probable future boundaries and service area of the City. Lakeland Village (Cleveland Ridge), Horsethief Canyon, Alberhill, Sedco Hills, The Farm, and the areas south and west of Lee (Corona) Lake are located within the City's SOI. With the exception of Horsethief Canyon, Lakeland Village, and The Farm, development within the SOI is characterized by rural, large-lot residential uses, mobilehome parks, mining lands, scattered agricultural uses, and commercial uses.

[56]/ Riverside County Local Agency Formation Commission (LSA), Final Draft Municipal Service Review for the Western Riverside County Area, May 2005.
[57]/ Ibid., p. 4-1.
[58]/ In contrast, the City of Lake Elsinore' indicates that the "City of Lake Elsinore is approximately 38 square miles with a sphere of influence covering over 78 square miles" (Source: City of Lake Elsinore, Lake Elsinore General Plan, Land Use and Recreation Background Report, January 2006, p. 1-3).

As illustrated in Figure 4.11.1-2 (City of Lake Elsinore – Existing General Plan),[59] for planning purposes and based on an area of 23,036 acres, the "City of Lake Elsinore General Plan" divides the City into 19 land use designations. The most predominant land-use designations within the City include "Specific Plan" (15,295 acres [66.4%]), "Lake Elsinore" (2,791 acres [12.12%]), "Low-Medium Density Residential" (1,442 acres [6.27%]), and "Low-Density Residential" (487 acres [2.11%]).[60] Existing land uses within the City are shown in Figure 4.11.1-3 (City of Lake Elsinore – Existing Land Uses [2001]).

- **City of Corona**. As shown in Figure 4.11.1-4 (City of Corona – Sphere of Influence), the proposed Lake Switchyard and a segment of the 500-kV transmission line are located within the City of Corona's 9,829-acre "Southern Sphere" of Influence. The City of Corona is located to the north of the City of Lake Elsinore near the junction of the SR-91 (Riverside) and I-15 (Corona and Escondido) Freeways. The City of Corona's "Sphere of Influence Land-Use Plan" is presented in Figure 4.11.1-5 (City of Corona – Sphere of Influence Land-Use Plan).

- **County of Riverside**. On October 7, 2003, the County of Riverside adopted a comprehensive update of the Riverside County General Plan. In addition to Countywide policies, the Riverside County General Plan identifies individual "area plans" for many unincorporated areas, providing detailed land use and policy direction regarding local issues. A portion of the "Elsinore Area Plan" is illustrated in Figure 4.11.1-6 (County of Riverside - Elsinore Area Plan). According to the Elsinore Area Plan, lands located within the general Project vicinity primarily includes areas designated "Open Space Conservation - Habitat (CH)," "Rural Mountainous (RM)," and "Medium-Density Residential (MDR)."

  As indicated by the County: "The Elsinore Area Plan reflects the proposed General Plan objectives for Riverside County in several ways. It does so by intensifying and mixing uses at nodes adjacent to transportation corridors, by more accurately reflecting topography and natural resources in land use designations, by avoiding high intensity development in natural hazard areas, and by considering compatibility with adjacent communities' land use plans as well as the desires of residents in the plan area. It provides for up to two Community Centers. The land use designations maintain the rural community character of Meadowbrook and Warm Springs, the natural and recreational characteristics of the Cleveland National Forest, and Community Development uses in Wildomar and Cleveland Ridge. In addition to providing habitat and recreational value, the conservation linkages within the Area Plan help provide a separation between communities and provide additional definition for existing communities."[61]

  According to the Riverside County General Plan, the population of Riverside County is expected to double between 2000 and 2020, growing to a total of about 1.4 million people. Based on that projected growth, the RC General Plan focuses primarily on growth-related issues such as community design, design, and ways to achieve an

[59]/ Op. Cit., Lake Elsinore General Plan, Land Use and Recreation Background Report, Figure 1-1, p. 13.
[60]/ Ibid., p. 1-4.
[61]/ Op. Cit., CEQA Findings of Fact and Statement of Overriding Considerations of the Board of Supervisors of Riverside County for the 2003 Riverside County General Plan, Area Plans.

integrated and coordinated land use, open space, and transportation system. As indicated in the Riverside County General Plan, the preferred pattern is to focus growth into strategically located centers or into existing developed areas in order to minimize development pressures on rural, agricultural, and open space areas. The Land Use Element acknowledges the importance of infrastructure and public facilities in supporting an increase in population but does not directly address regional infrastructure facilities.[62]

Within Riverside County, many of the proposed facilities would be located within the area of the "Elsinore Area Plan" (EAP). The EAP encompasses unincorporated County areas surrounding the City of Lake Elsinore and focuses on preserving the numerous unique features in the Lake Elsinore area while, at the same time, accommodating future growth. To accomplish this, more detailed land-use designations are applied than for the Riverside County General Plan. The EAP describes the area setting, various communities, policy and hazard areas, and other attributes. Those EAP provisions that appear most relevant to the Project include the following:

◊ Unique features. Unique features include the CNF and the Temescal Wash.

◊ Unique communities. The EAP lists five unique communities, a designation that includes unincorporated areas that may be annexed, incorporated as a new city, or designated as an unincorporated community. The proposed Santa Rosa Substation and LEAPS Powerhouse sites are located in the Lakeland Village (Cleveland Ridge) community, while the proposed Northern (Lake-Santa Rosa) transmission alignment terminates near Warm Springs.

◊ Policy areas. The EAP lists eight special policy areas designed to address important locales that have special significance to the residents. Three of these are relevant to the proposed Project's sites. As noted, the northernmost end of the proposed Northern (Lake-Santa Rosa) transmission line terminates near the Warm Springs area, which has policies to "protect the life and property of residents and maintain the character of the Gavilan Hills" through adherence to various elements of the Riverside County General Plan. The area of Temescal Wash that is within the 100-year flood plain is a designated policy area, with policies to encourage the maintenance of the wash in its natural state. The third policy area relevant to the Project is the "Lake Elsinore Environs Policy Area," which is along the west shoreline of the lake, encompassing the 100-year floodplain and containing policies prohibiting the development of structures.

[62]/ The Riverside County General Plan accommodates support services such as governmental facilities, utility facilities (including public and private electric generating stations and corridors), landfills, airports, educational facilities, and maintenance yards with the "Public Facility Area Plan Land Use Designation" (designed to provide for adequate public facilities within the County while ensuring compatibility with surrounding land uses). The policies for public facilities state, in part, that the "Public Facilities Land Use Designation" is to: (1) Accommodate the development of public facilities in areas appropriately designated by the General Plan and area plan land use maps; (2) Require new public facilities to protect sensitive uses such as schools and residences from the effects of noise, light, fumes, odors, vehicular traffic, parking, and operational hazards; (3) Require that public facilities be designed to consider their surroundings and visually enhance, not degrade, the character of the surrounding areas; and (4) Require that development and conservation land uses do not infringe upon existing public utility corridors, corridors, fee owned rights-of-way, or permanent easements whose true land use is that of public facilities.

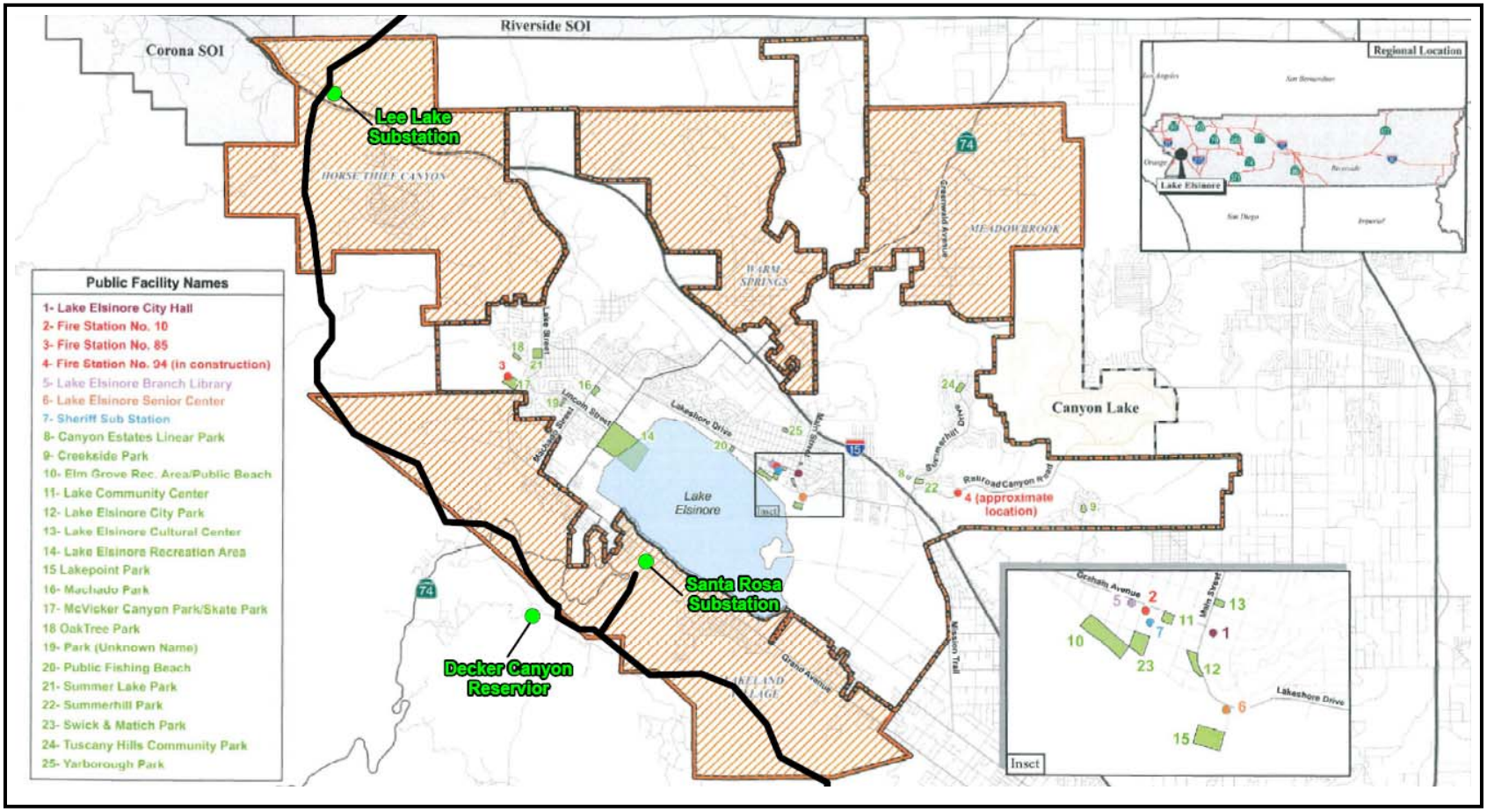


Figure 4.11.1-1. City of Lake Elsinore Sphere of Influence
Source: Riverside Local Agency Formation Commission

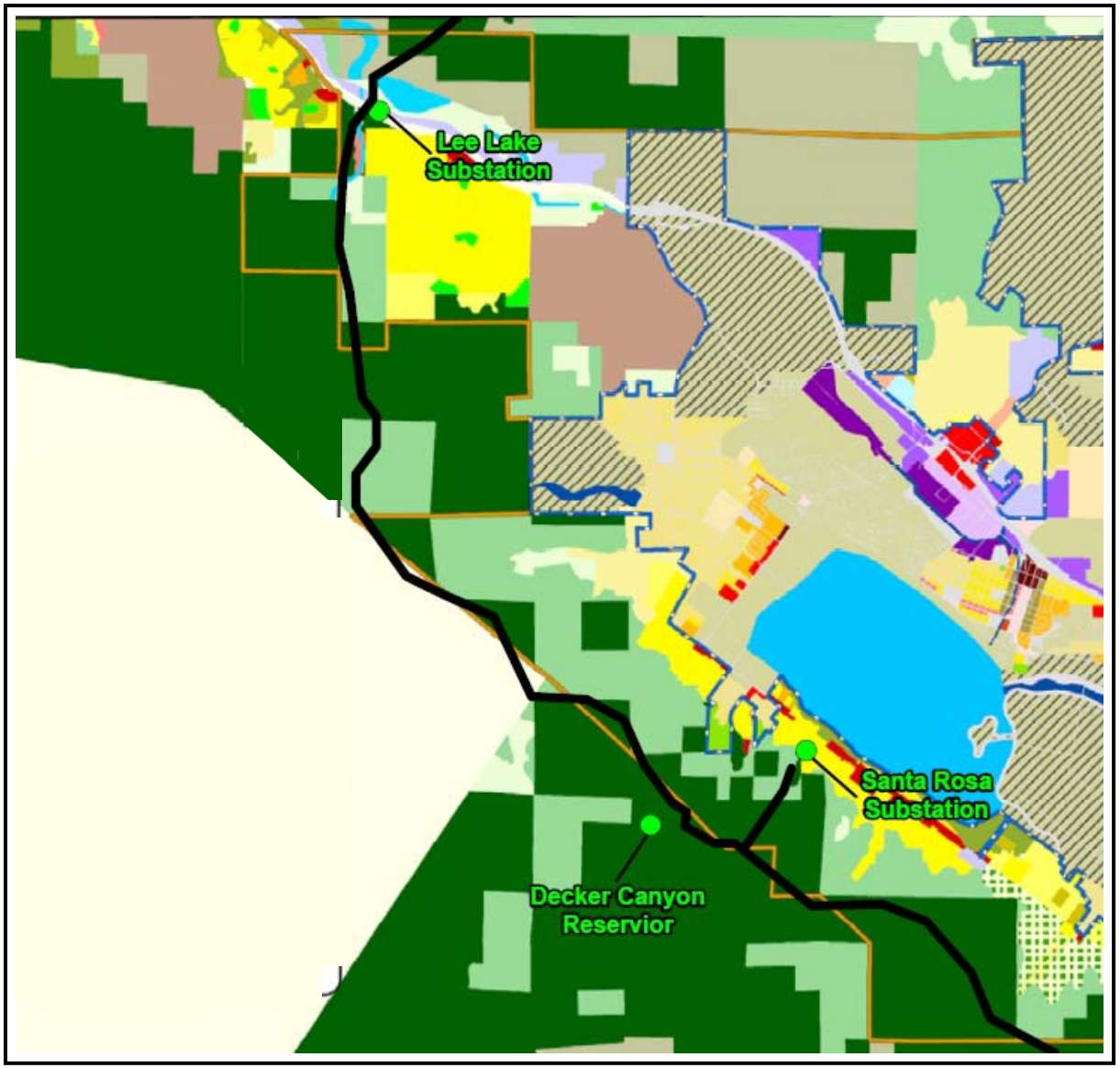


Figure 4.11.1-2.
City of Lake Elsinore
Existing General Plan
Source: City of Lake Elsinore

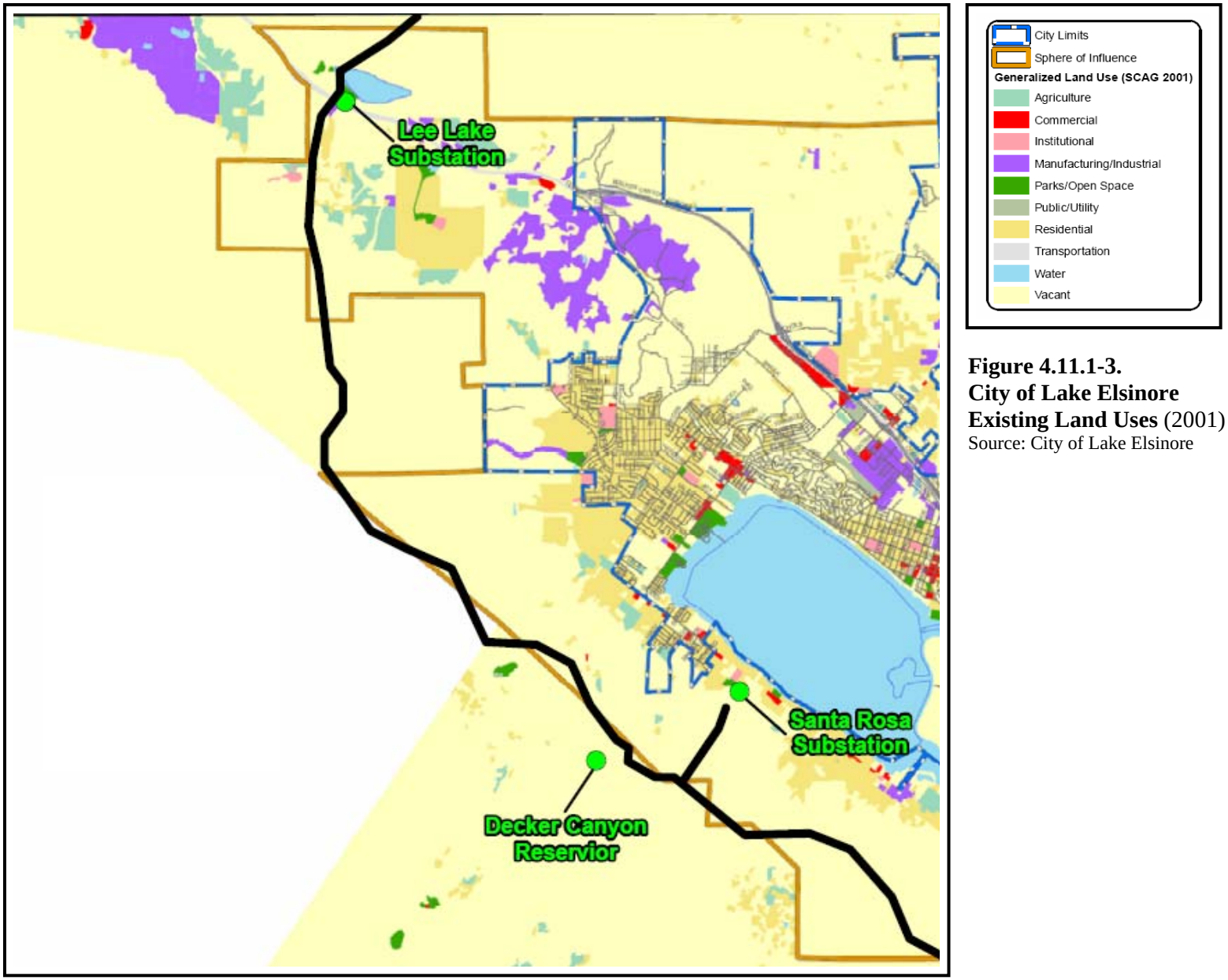


Figure 4.11.1-3.
City of Lake Elsinore Existing Land Uses (2001)
Source: City of Lake Elsinore

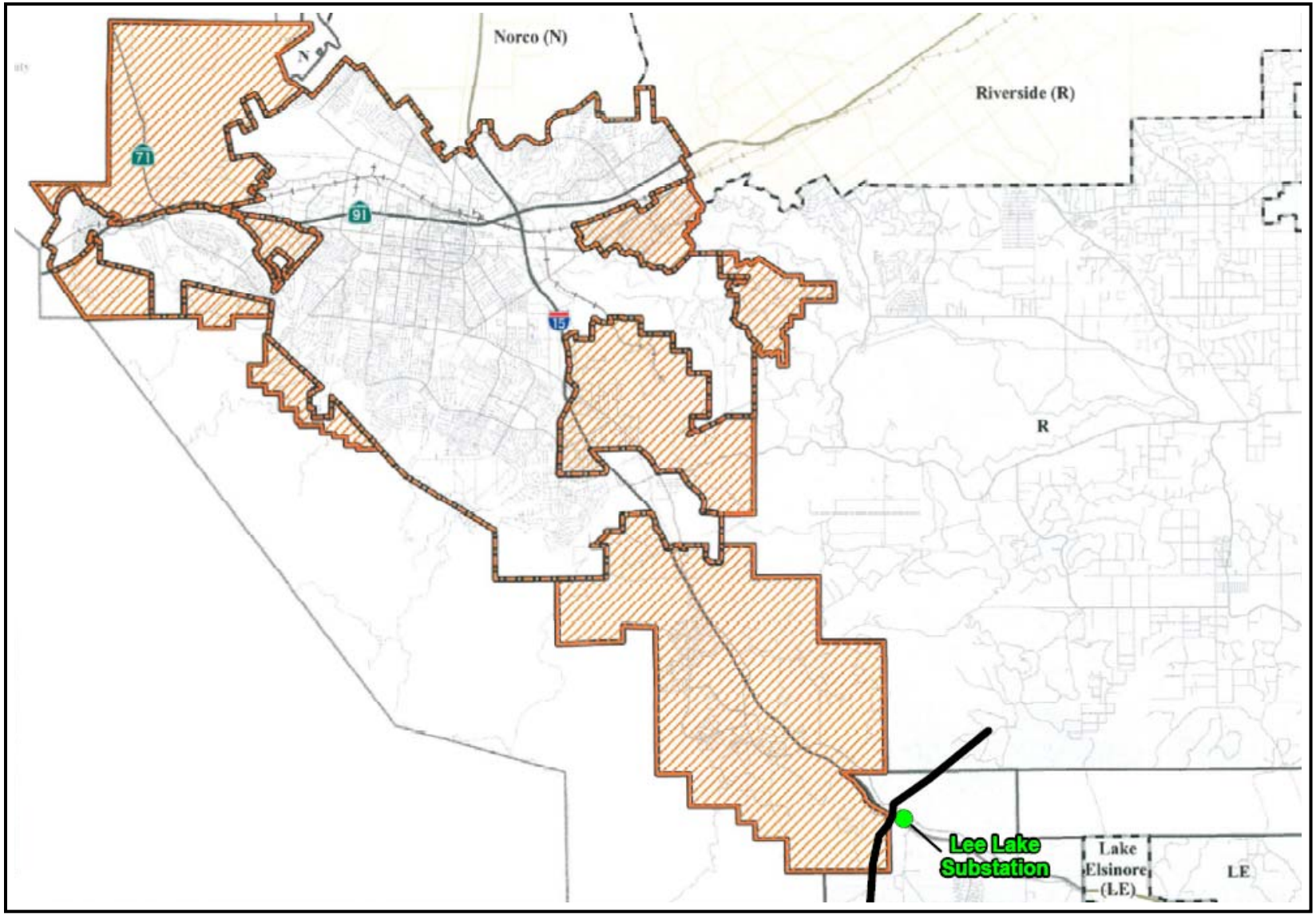


Figure 4.11.1-4. City of Corona Sphere of Influence
Source: Riverside County Local Agency Formation Commission

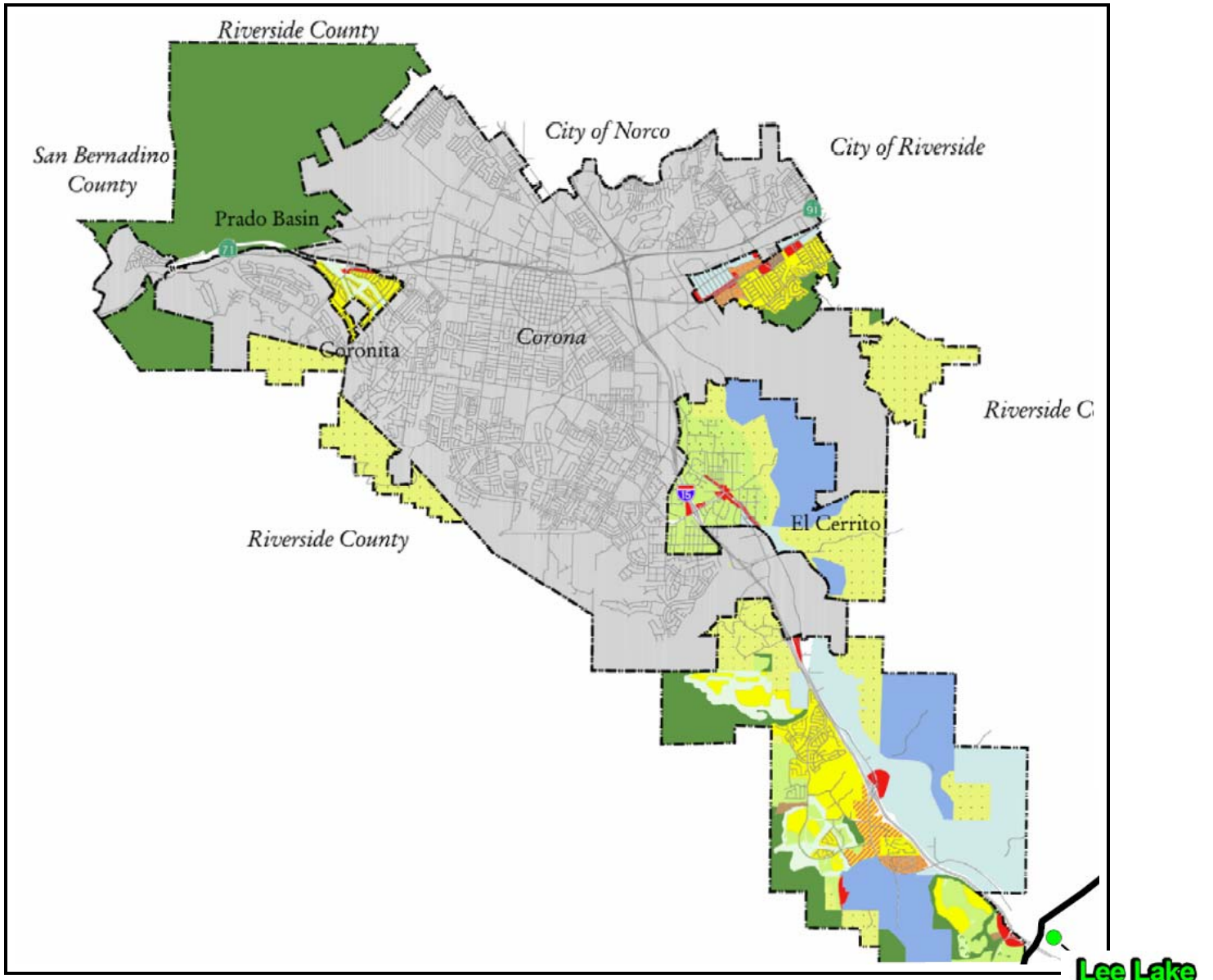


Figure 4.11.1-5. City of Corona Sphere of Influence Land-Use Plan
Source: City of Corona

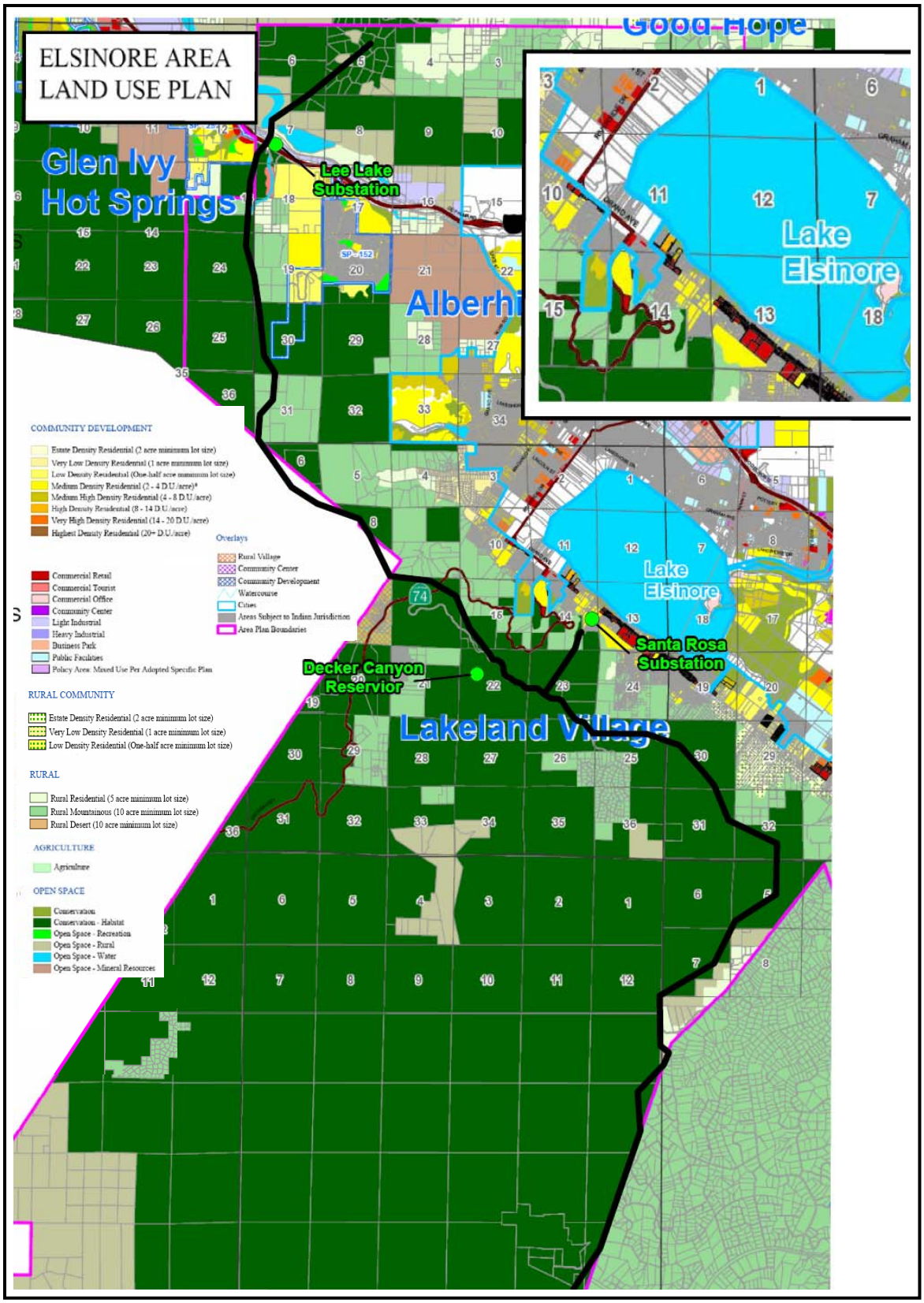


Figure 4.11.1-6. County of Riverside - Elsinore Area Plan
Source: County of Riverside

Multi-purpose open space. The EAP area contains significant oak woodlands that should be protected to preserve habitat and the character of the area.

◊ Hazards. The plan sets forth local hazard policies with respect to flooding, wildland fire hazard, seismic faults, and slope instability, indicating which hazards should be avoided entirely and which can be mitigated by special building techniques.

The EAP specifically identifies the "Glen Eden Policy Area."[1] In addition, the Lakeland Village area is located the "Lakeland Village/Wildomar Sub-Area of Redevelopment Project Area 1-1986," as approved by the County of Riverside on December 23, 1986.

The Western Riverside County MSHCP was adopted by the Riverside County Board of Supervisors on June 17, 2003 and includes 16 area plans, including the "Lake Elsinore Area Plan" (which includes the City of Lake Elsinore and the City of Canyon Lake). The MSHCP is intended to promote the conservation of natural habitat areas and preserve biological and ecological diversity in western Riverside County. The MSHCP has the potential to constrain new development due to the requirement of land to be set-aside as permanent open space.

The Western Riverside County MSHCP's "Lake Elsinore Area Plan" designates general areas within the City as areas in need of conservation. Examples include wetlands around Lake Elsinore and the floodplain (Back Basin) to the east of the lake. The plan also identifies the need to provide connectivity between the Santa Ana Mountains, Temescal Wash, and the foothills north of Lake Elsinore that may require that some of these areas remain, at least partially, undeveloped. The Western Riverside County MSHCP has identified particular areas within Lake Elsinore where land should be preserved to maintain core and linkage habitat for existing endangered and threatened species.

The Riverside County Planning Department is currently in the process of developing community specific visions and design guidelines for several unique Riverside County communities, including the area of Temescal Valley.[2] The proposed Lake Switchyard, a portion of the proposed Northern (Lake-Santa Rosa) transmission line, and the 115-kV subtransmission lines are located within the Temescal Valley area.

The community of Lakeland Village (Cleveland Ridge) is located immediately west of Lake Elsinore and includes a major ridge along the eastern face of the Santa Ana and Elsinore Mountains. This community incorporates the Lakeland Village Redevelopment Project Area south of Lake Elsinore, which comprises a mix of urban residential and commercial uses along Grand Avenue on the low-lying areas adjacent to the lake. Natural open space areas, with pockets of rural residential uses, are located adjacent to Ortega Highway along the steep easterly face of the Santa Ana Mountains. An area known as the "Lake View Sphere" includes the community of El Cariso and is located on the eastern facing slope in the general Project area, within the Congressional boundaries

[1]/ The "Glen Eden Policy Area" consists of portions of Sections 17, 18, and 19 located southwesterly of Temescal Canyon Road and northerly, northeasterly, and westerly of the Horsethief Canyon community.
[2]/ Riverside County Planning Department (PDS West), Draft Temescal Valley Design Guidelines, February 27, 2007.

of the CNF, further west of Lake Elsinore and north of Ortega Highway. On the western face of the Santa Ana and Elsinore Mountains, small rural residential communities include Rancho Capistrano, which is located within a privately owned in-holding within the CNF.

The area around the proposed Decker Canyon Reservoir is presently used primarily for water conservation and recreational purposes. An established trail system (Morgan Trail) descend from South Main Divide Truck Trail into Morrell Canyon and the San Mateo Canyon Wilderness. This area is located near a number of established hang glider launch. South Main Divide Truck Trail serves as the sole access road to the residential uses located in and around Rancho Capistrano (approximately four miles southeast of Ortega Highway) and to the Wildomar OHV area (approximately nine miles southeast of Ortega Highway). To the east of the proposed upper reservoir sites is Elsinore Peak, where the USDA Forest Service has issued a number of special use permits for operation of telecommunications facilities (currently comprising of six towers and five building). Northwest of the proposed upper reservoir sites, nearby land uses include the USDA Forest Service's El Cariso Fire Station (32353 Ortega Highway, Lake Elsinore), an adjacent visitor information facility, and El Cariso Campground.

As determined by the Riverside County Board of Supervisors, based on an assessment of the programmatic environmental impacts associated with the implementation of the Riverside County General Plan and the development activities authorized therein, with regards to land use impacts, all environmental effects can be mitigated to a less-than-significant level.[3]

- **San Diego County**. The existing Talega-Escondido 230 kV transmission line passes primarily through the County of San Diego, with a small portion of the line located in Riverside County. The existing transmission line is located within a 300-foot wide easement owned by SDG&E. The majority of land within the easement is private and under San Diego County jurisdiction. About 17 miles of the easement is located in Camp Pendleton. In addition, the Santa Margarita Ecological Reserve (SMER)[4] and a BLM-designated "Area of Critical Environmental Concern"[5] (ACEC) are crossed by the existing SDG&E transmission line.

  The 1979 "San Diego County General Plan" (San Diego County General Plan) provides a framework for land use planning in the unincorporated areas of San Diego County. The County of San Diego is presently in the process of updating the San Diego County General Plan (General Plan 2020). Existing land-use designations within northern San Diego County are illustrated in Figure 4.11.1-7 (San Diego County General Plan – Land Use Policy Map). In addition, individual community plans have been adopted for certain specified areas, including Fallbrook, Rainbow, Pala/Pauma, and Valley Center.[6] The

[3]/ Op. Cit., CEQA Findings of Fact and Statement of Overriding Considerations of the Board of Supervisors of Riverside County for the 2003 Riverside County General Plan, Findings of Fact for Riverside General Plan Impacts and Mitigation Measures, Environmental Impact 4.2.1.

[4]/ The Santa Margarita Ecological Reserve (SMER) is located in the southwest corner of Riverside County and northern San Diego County. The 4,344-acre SMER is a field station of the California State Universities, administered by San Diego State University.

[5]/ An ACEC is an area within the public lands where special management attention is required to protect important historic, cultural or scenic values, fish and wildlife resources or other natural systems, or to protect life and safety from natural hazards.

[6]/ San Diego County General Plan, Fallbrook Community Plan, adopted December 31, 1974, amended June 1, 1988; San Diego County General Plan, Rainbow Community Plan, adopted September 29, 1971, amended December 14, 1988; an Diego County General Plan, Pala/Pauma

adopted land-use plans for those community planning areas are presented in Figure 4.11.1-8 (San Diego County General Plan – Community Planning Areas). Although no formal community plans have been adopted by the County of San Diego, planning maps have also been developed for the Pendleton-DeLuz and North County Metro planning areas. The Pendleton-DeLuz community planning area is located in the northwest corner of San Diego County, adjacent to the Counties of Orange and Riverside to the north, the City of Oceanside to the south, and the community of Fallbrook to the east. The plan area is approximately 163,300 acres in size. Ninety percent of the plan area is comprised of Camp Pendleton and the CNF.

In accordance with the San Diego County Municipal Permit (Order No. 2001-01), individual urban runoff management plans (URMPs) have been developed for the Santa Margarita River, San Luis Rey River, and Carlsbad hydrologic units. As illustrated in Figure 4.11.1-9 (Santa Margarita River Hydrologic Unit – Existing Land Uses), Figure 4.11.1-10 (San Luis Rey River Hydrologic Unit – Existing Land Uses), and Figure 4.11.1-11 (Carlsbad Hydrologic Unit – Existing Land Uses), those URMPs included an assessment of existing land uses evident within each watershed area.

- **Landowners**. As stipulated under the CPUC's "Information and Criteria List," where the CPUC is the lead agency under CEQA, the names and mailing addresses of all owners of land over, under or on which the Project or any part of the Project may be located and owners of land adjacent thereto shall be listed in an appendix to the PEA. A list of those property owners is presented in Chapter 7 (Other Process-Related Data Needs) herein.

4.11.2 Land Use and Planning Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's regulatory setting.

- Federal Power Act. The FPA requires that all non-Federal hydropower projects on navigable waters to be licensed. FERC is the independent regulatory agency that has exclusive authority under the FPA to license such projects. Section 4(e) of the FPA (16 U.S.C. 797[e]) applies to hydropower facilities located on federally-reserved lands (e.g., Indian reservations, national forests) and stipulates that FERC is obligated under the FPA to ensure that its permits do not "interfere with. . .the purpose for which any reservation affected thereby was created or acquired." Under Section 4(e), the Secretary of the department with jurisdiction over the reserved land has the authority to issue any license conditions necessary to maintain the reservation. Depending on the purpose of the reservation, the agency's conditions may address a range of goals, including the preservation or enhancement of recreation, Federal lands, and aquatic habitats.[7]

Subregional Plan, adopted January 3, 1979, amended May 7, 1986; and San Diego County General Plan, Valley Center Community Plan, adopted December 31, 1979, amended April 17, 2002.

[7]/ Congressional Research Service (Kyna Powers), Hydropower License Conditions and the Relicensing Process, CRS Issue Brief for Congress, Order Code IB10122, updated June 9, 2003, p. CRS-2.

- Federal Aviation Regulations. Federal regulations (14 CFR Part 77) establish standards and notification requirements for objects affecting navigable airspace. Federal Aviation Administration (FAA) Regulations (FAR Part 77) allows the FAA to identify potential aeronautical hazards in advance, thus preventing or minimizing adverse impacts to the safe and efficient use of navigable airspace. In order to protect the critical airspace around airports and allow safe aircraft operation, Part 77 defines a system of imaginary (three-dimensional) spaces around airports through which no fixed object or structure should penetrate. Public agencies or private developers proposing to construct structures or locate objects that would penetrate the Part 77 imaginary surfaces must notify the FAA. FAA review will then determine whether the object should be allowed and, if so, how it should be marked and/or lighted. An object constitutes an obstruction to navigation if the proposed construction or alteration falls within any of the following categories: (1) greater than 200 feet above ground level (AGL) at its location; (2) near a public-use or military airport, heliport, or seaplane base; (3) highways and railroads; (4) objects on a public-use or military airport or heliport; or (5) when requested by the FAA. Structures requiring FAA notification include antenna towers, overhead communication and transmission lines, water towers, and stockpiles of equipment.[8] The FAA has established standards for marking and lighting structures, such as buildings, towers, and overhead wires.[9]

  General Operating and Flight Rules specifically prohibit low-flying aircraft, except when necessary for takeoff or landing.[10] The FAA indicates that obstructions can be marked or lighted to warn airmen of their presence. Lighted markers are available for increased night conspicuity of high-voltage (69 kV or higher) transmission line catenary wires.[11]

- Standard Enabling Acts. The United States Department of Commerce institutionalized comprehensive planning in the Standard Zoning Enabling Act of 1926 (SZEA) and the Standard City Planning Enabling Act of 1928 (SCPEA). The SZEA allowed municipalities to adopt zoning regulations and specified that zoning must be in accordance with the comprehensive plan. The SZEA included a grant of power, a provision that the legislative body could divide the local government's territory into districts, a statement of purpose for the zoning regulations, and procedures for establishing and amending the zoning regulations. A legislative body was required to establish a zoning commission to advise it on the initial development of zoning regulations. In 1926, the United States Supreme Court (Euclid vs. Ambler Realty Company) upheld the constitutionality of zoning authority to provide for public welfare through the separation of land uses.

[8]/ Federal Aviation Administration, Proposed Construction or Alteration of Objects that May Affect the Navigable Airspace, Advisory Circular AC 70/7460-2K, March 1, 2000.

[9]/ Federal Aviation Administration, Obstruction Marking and Lighting, Advisory Circular AC 70/7460-1K, February 1, 2007.

[10]/ As specified, no person may operate an aircraft below the following altitudes: "(a) Anywhere. An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface. (b) Over congested areas. Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft. (c) Over other than congested areas. An altitude of 500 feet above the surface except over open water or sparsely populated areas. In that case, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure. (d) Helicopters. Helicopters may be operated at less than the minimums prescribed In paragraph (b) or (c) of this section if the operation is conducted without hazard to persons or property on the surface. In addition, each person operating a helicopter shall comply with routes or altitudes specifically prescribed for helicopters by the Administrator" (14 CFR 91.119).

[11]/ Federal Aviation Administration, Aeronautical Information Manual: Official Guide to Basic Flight Information and ATC Procedures, February 16, 2006, Section 2-2-3.

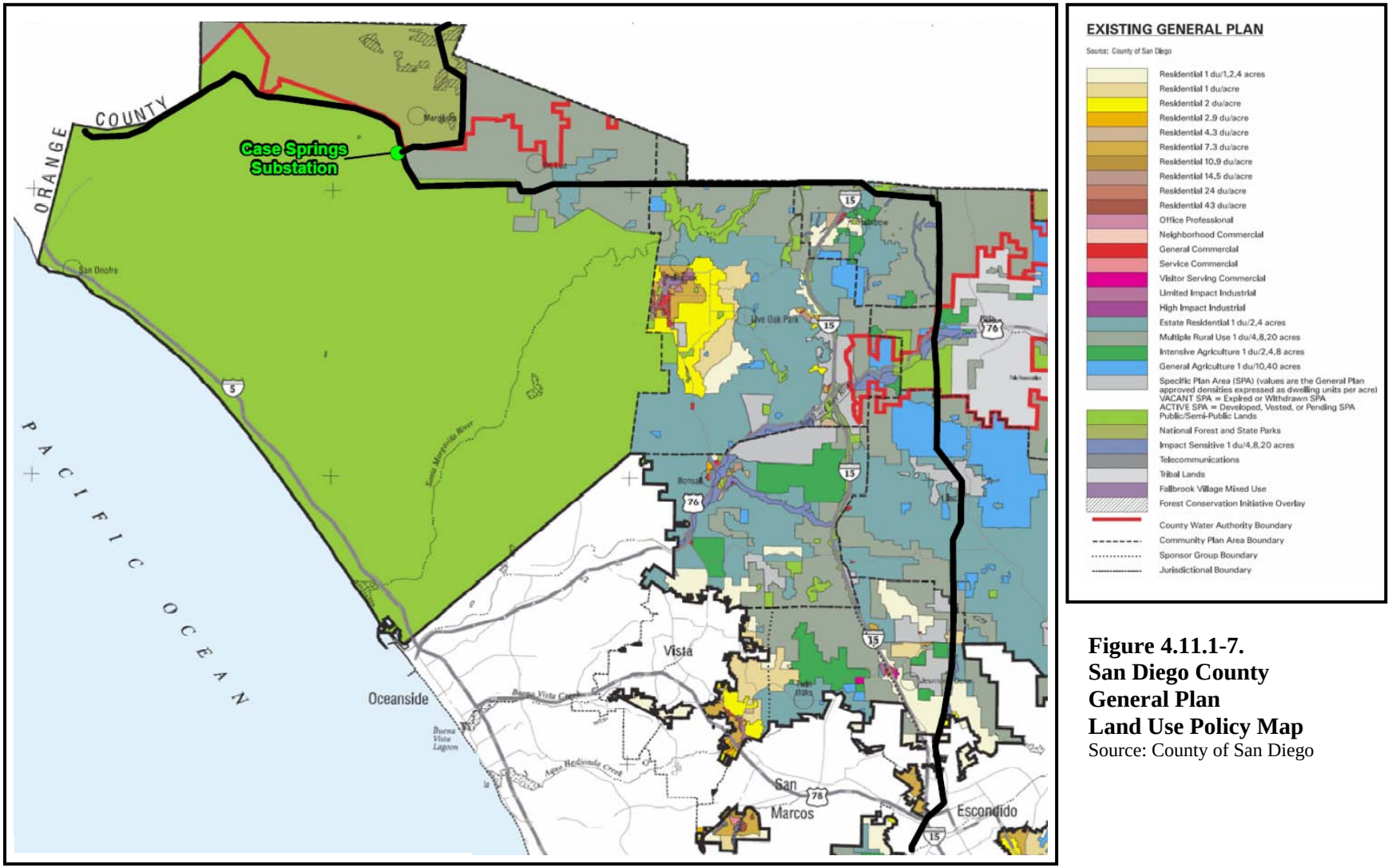


Figure 4.11.1-7.
San Diego County
General Plan
Land Use Policy Map
Source: County of San Diego

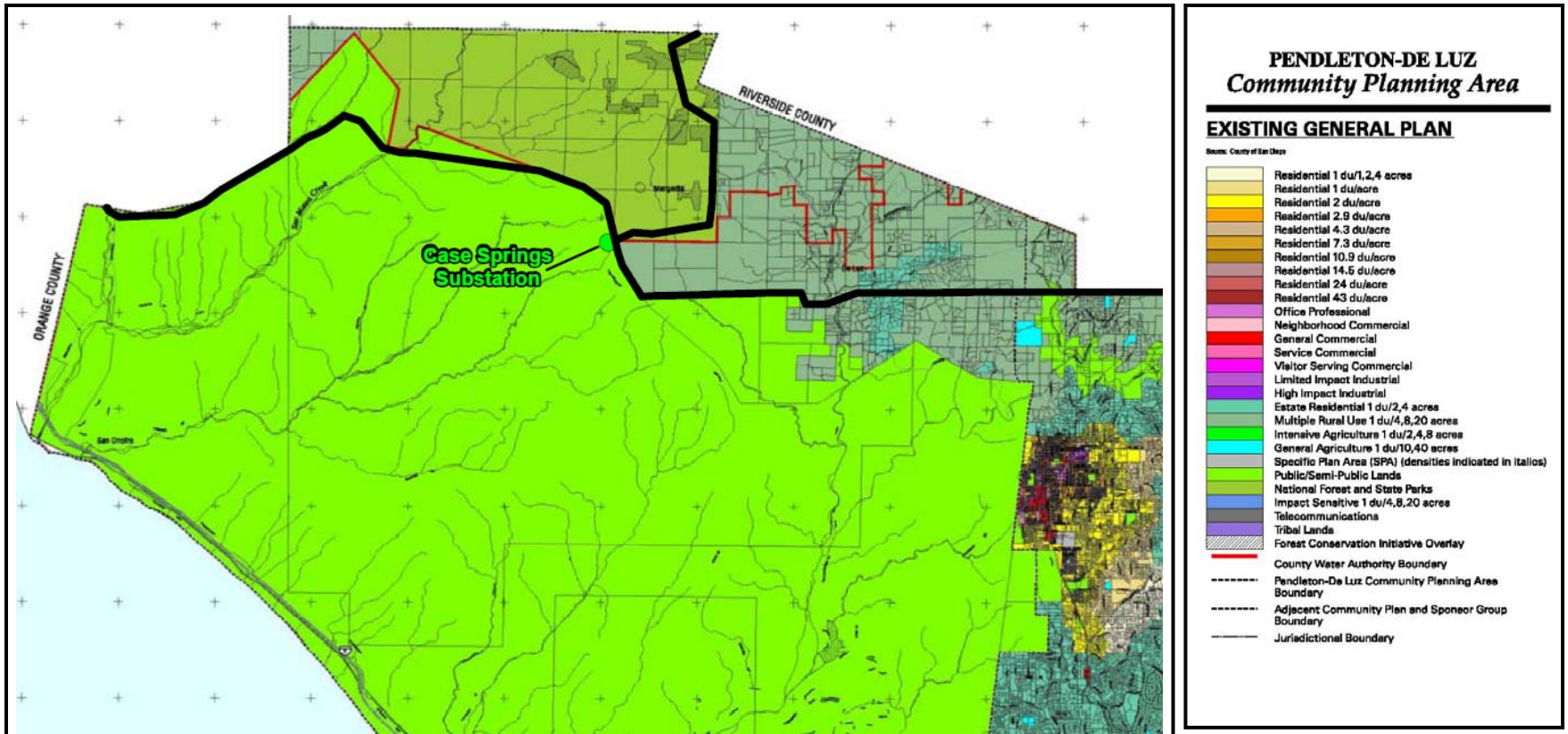


Figure 4.11.1-8.
San Diego County General Plan
Pendleton-DeLuz
Community Planning Area
(1 of 6)
Source: County of San Diego

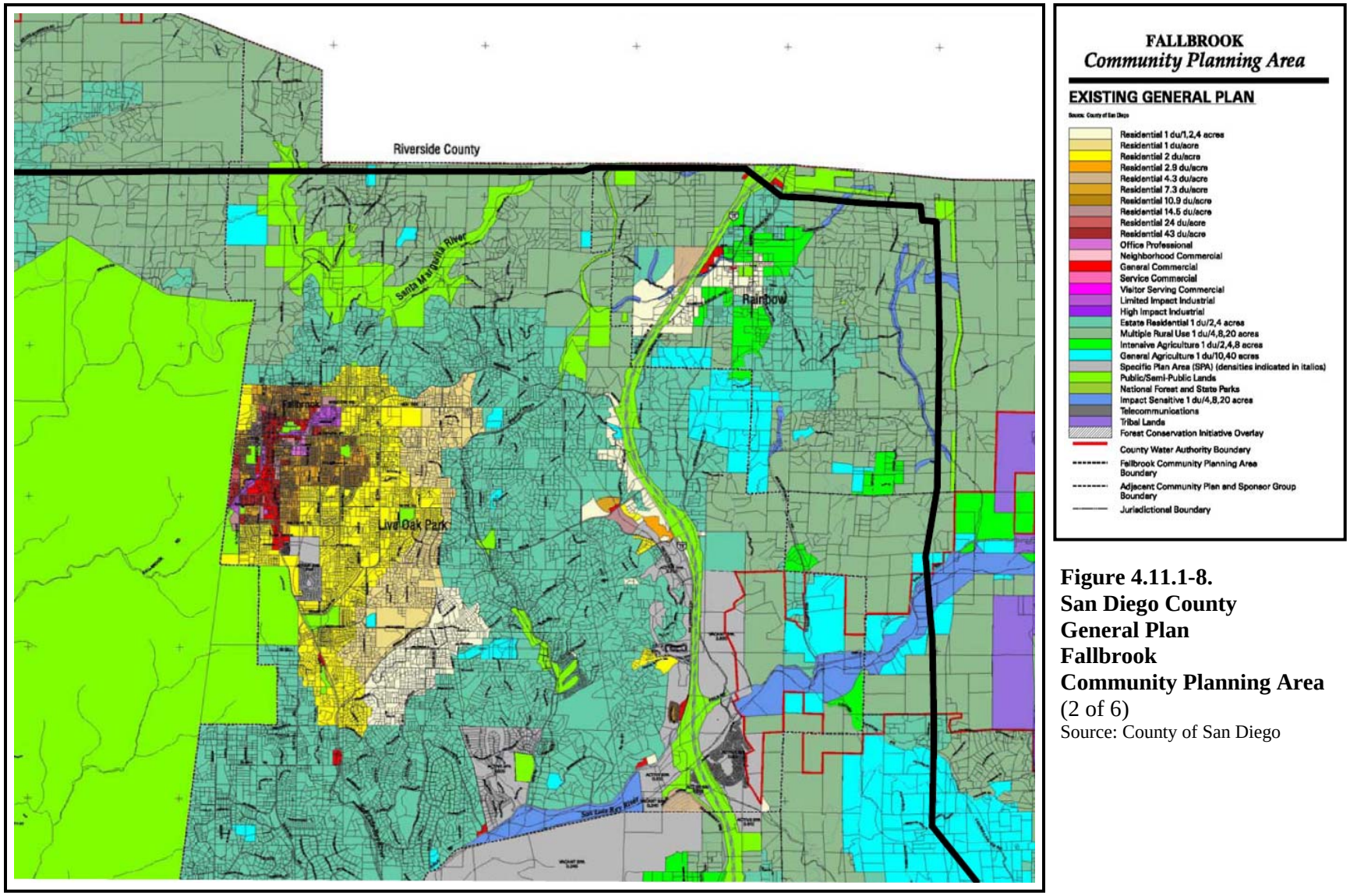


Figure 4.11.1-8.
San Diego County General Plan
Fallbrook Community Planning Area
(2 of 6)
Source: County of San Diego

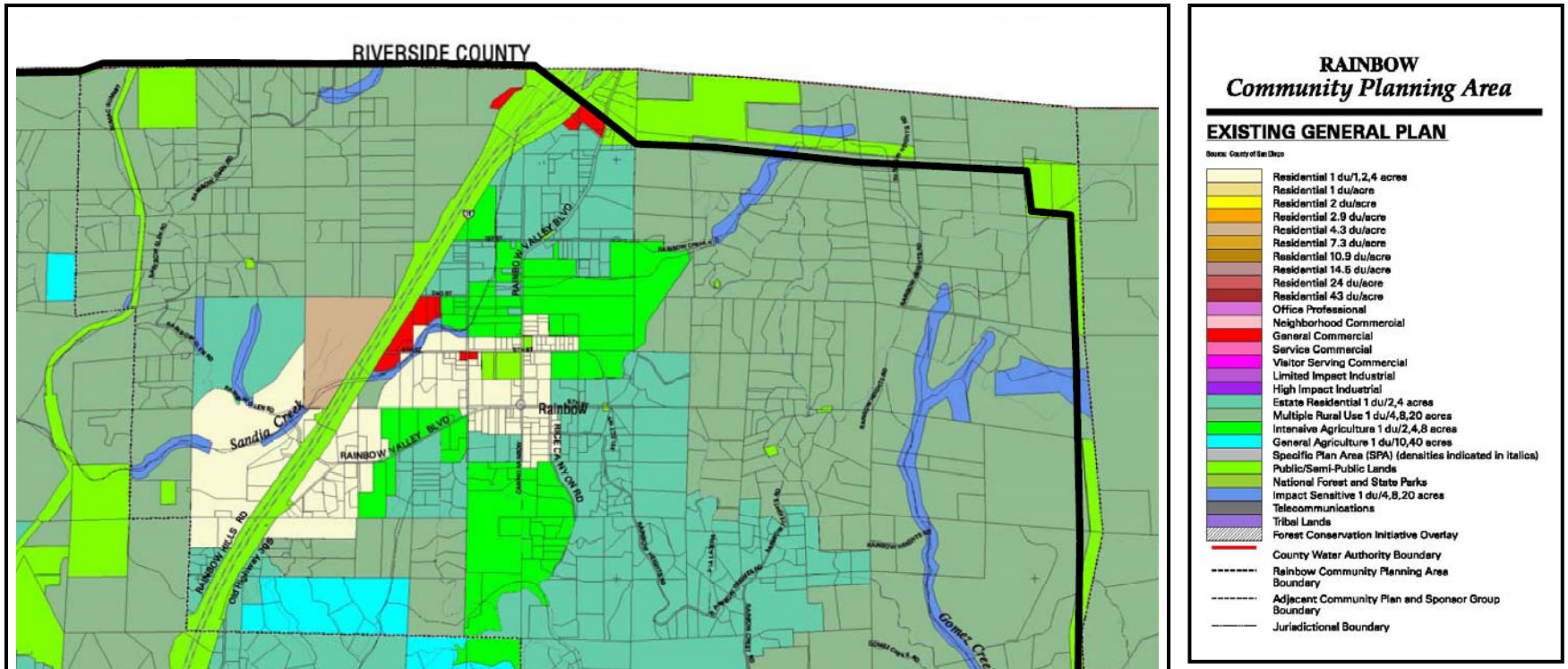


Figure 4.11.1-8.
San Diego County
General Plan
Rainbow
Community Planning Area
(3 of 6)
Source: County of San Diego

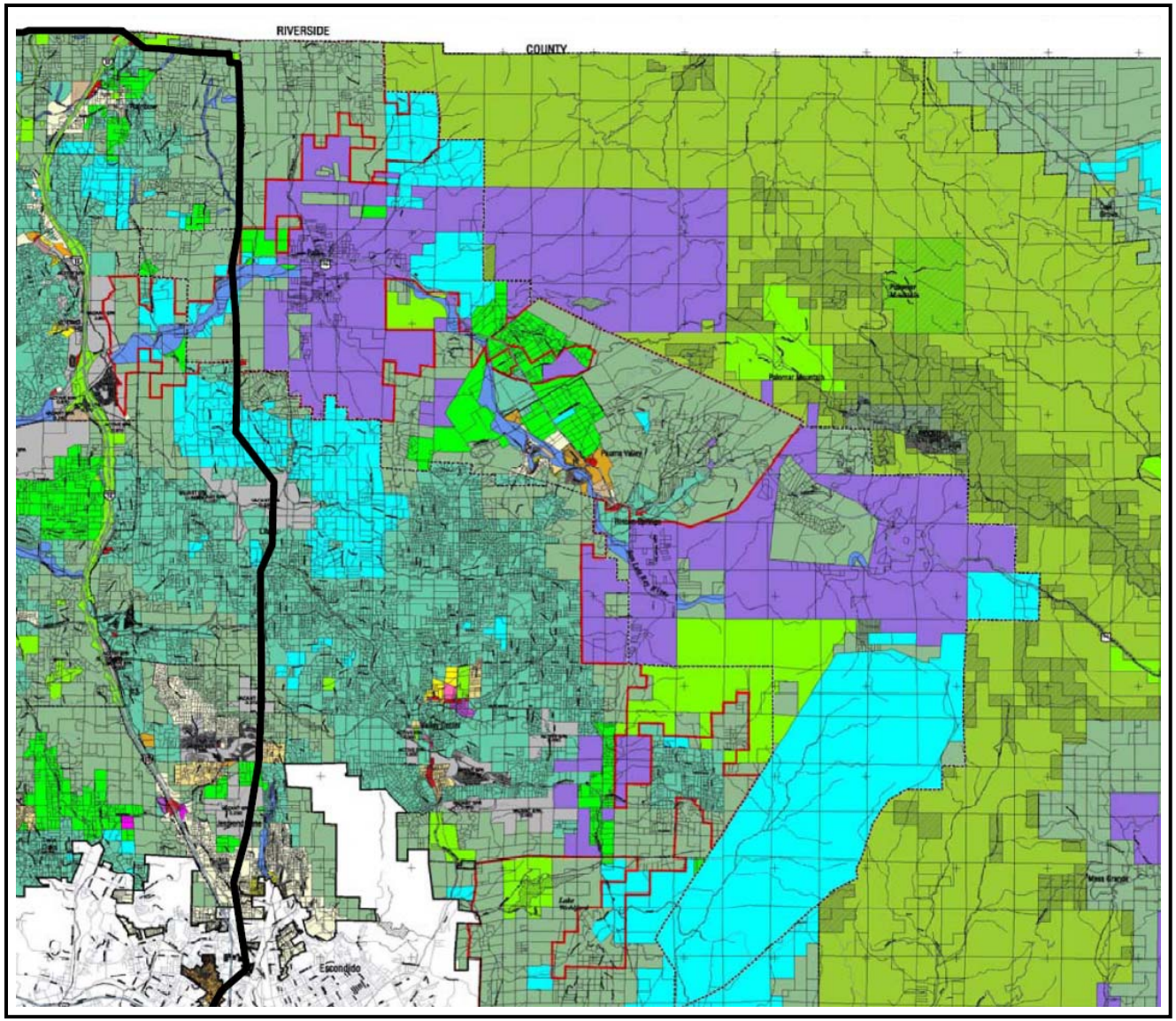


Figure 4.11.1-8.
San Diego County General Plan
Pala-Pauma Community Planning Area
(4 of 6)
Source: County of San Diego

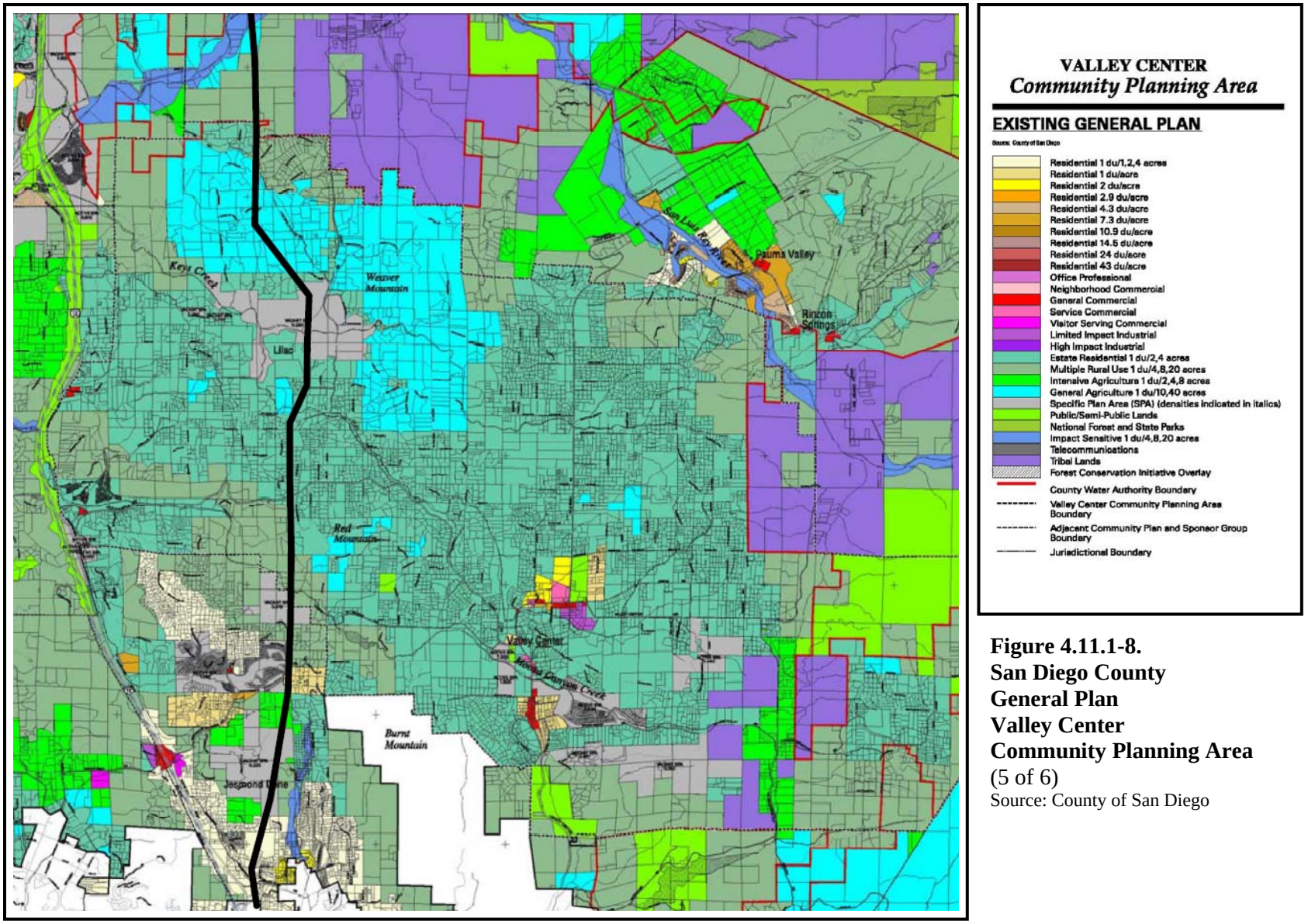


Figure 4.11.1-8.
San Diego County
General Plan
Valley Center
Community Planning Area
(5 of 6)
Source: County of San Diego

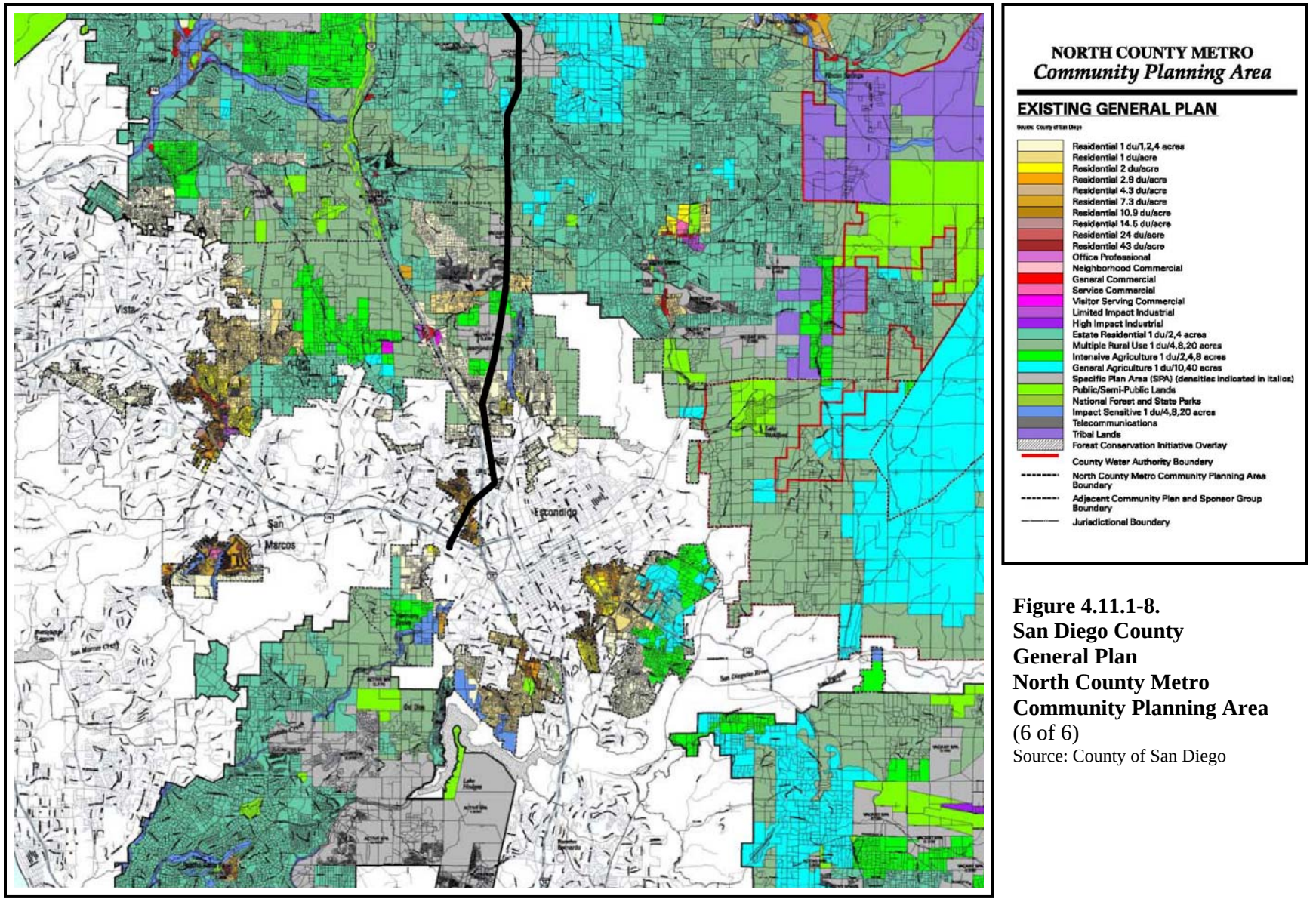


Figure 4.11.1-8.
San Diego County General Plan
North County Metro Community Planning Area
(6 of 6)
Source: County of San Diego

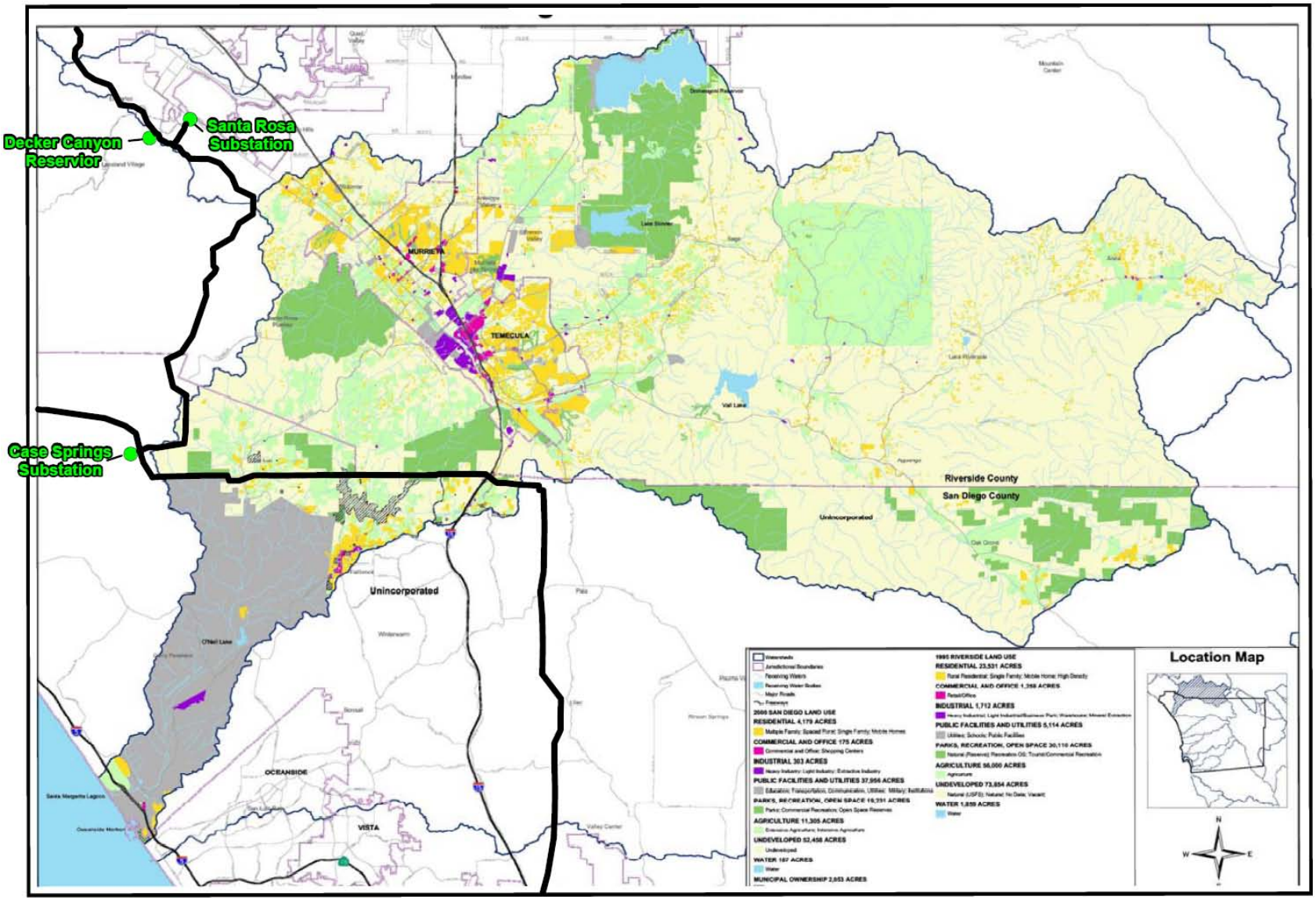


Figure 4.11.1-9. Santa Margarita River Hydrologic Unit – Existing Land Uses
Source: California Regional Water Quality Control Board, San Diego Region

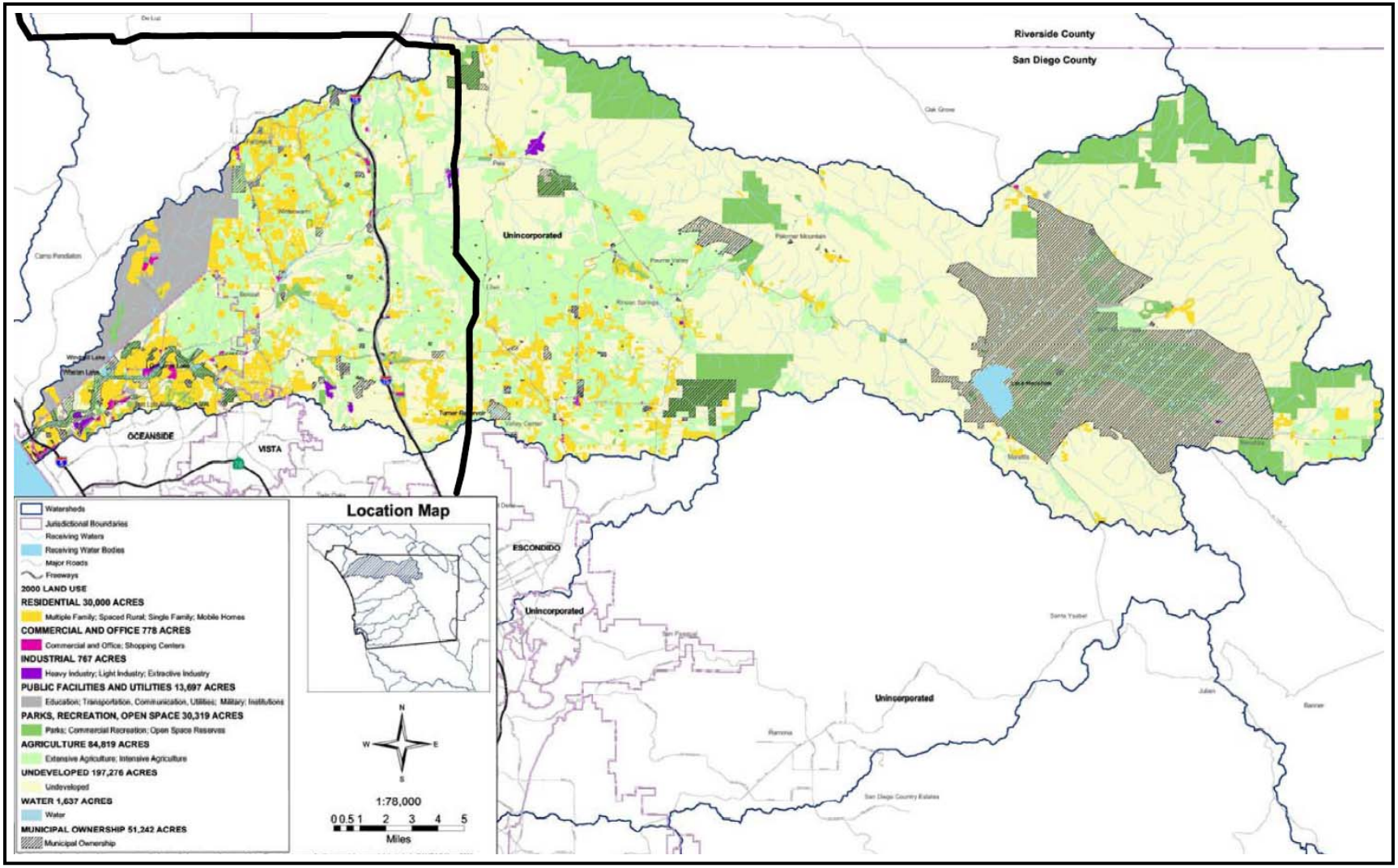


Figure 4.11.1-10. San Luis Rey River Hydrologic Unit – Existing Land Uses
Source: California Regional Water Quality Control Board, San Diego Region

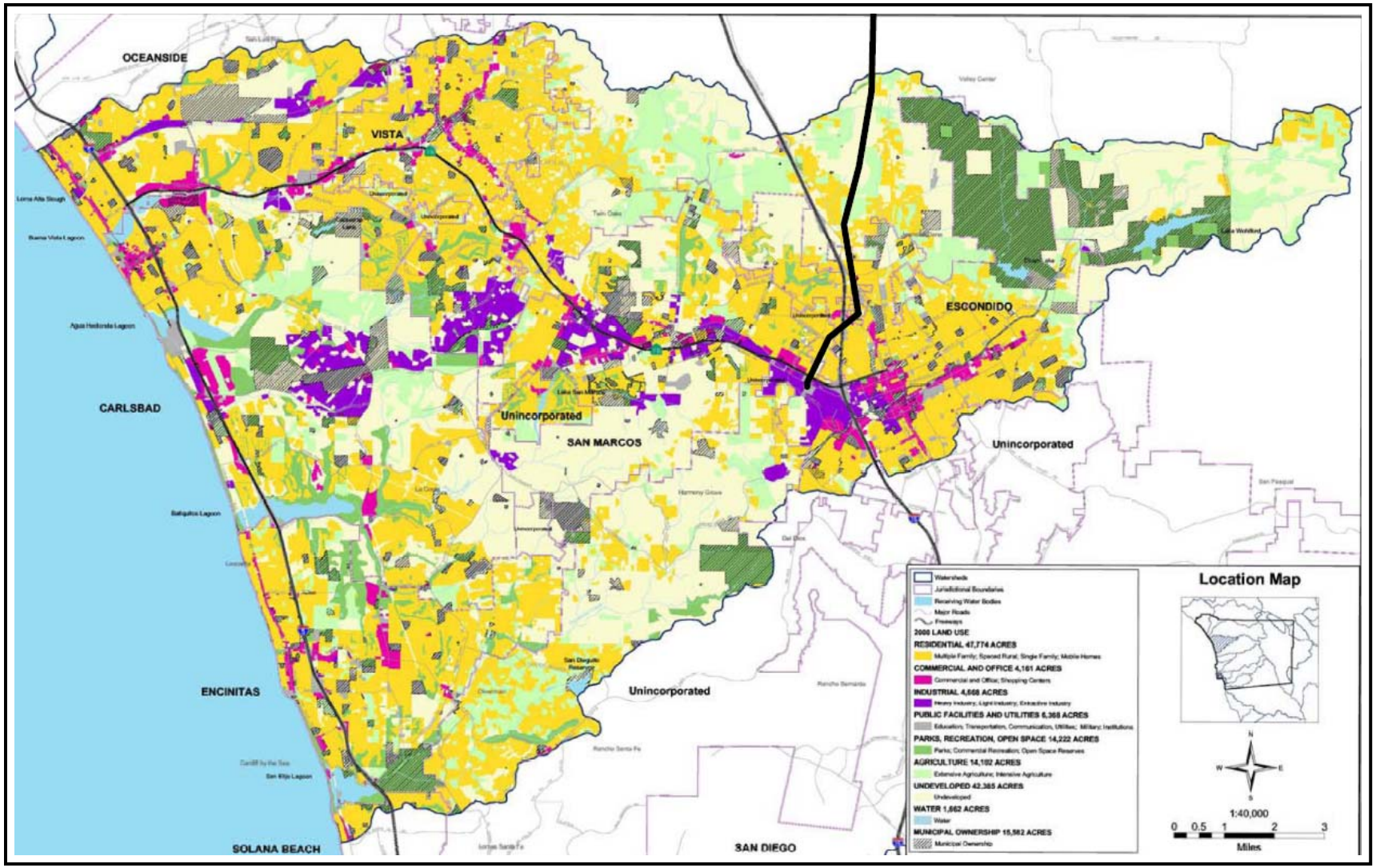


Figure 4.11.1-11. Carlsbad Hydrologic Unit – Existing Land Uses
Source: California Regional Water Quality Control Board, San Diego Region

The SCPEA included: (1) the organization and power of the planning commission, which was directed to prepare and adopt a "master plan"; (2) the content of the master plan for the physical development of the territory; (3) provision for adoption of a master street plan by the governing body; (4) provision for approval of all public improvements by the planning commission; (5) control of private subdivision of land; and (6) provision for the establishment of a regional planning commission and a regional plan.

- National Forest Management Act. Planning for the management and use of National Forest System (NFS) land must conform to the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. 1601-1614) (RPA), as amended by the National Forest Management Act of 1976 (16 U.S.C 1601-1614; PL 94-588) (NFMA),[12] implementing regulations found in 36 CFR Part 219, NEPA, and implementing regulations found in 40 CFR 1500-1508.

  The land and resources management plan for the CNF is contained in the following documents: (1) "Land Management Plan – Part 1 Southern California National Forests Visions: Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest"; (2) "Land Management Plan – Part 2 Cleveland National Forest Strategy"; (3) the "Land Management Plan – Part 3 Design Criteria for Southern California National Forests: Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest"; and (4) "Record of Decision – Cleveland National Forest Land Management Plan"[13] (Forest Plan). As specified, one of the goals of the Forest Plan is to "[h]elp meet energy resource needs, objective 1."[14] One "designated utility corridor" (i.e., Valley-Serrano), which constitutes SCE's existing 500 kV Valley-Serrano transmission line, is identified therein.[15]

  As illustrated in Figure 4.11.2-1 (Cleveland National Forest, Trabuco Ranger District - Land Use Zones),[16] within the National Forest, the Federal land-use designations for the Project includes: Back Country (BC); Back Country, Non-Motorized (BCNM); Back Country, Motorized Use Restrictions (BCMUR); and Developed Area Interface (DAI). No portion of the Project is located within a designated wilderness area, a wild and scenic river area, critical biological areas, a special interest area, or in a research natural area.

[12]/ The NFMA states, in part, that "[t]he head of the department having jurisdiction over the lands is authorized and empowered, under general regulations to be fixed by him, to grant an easement for rights-of-way, for a period not exceeding fifty years from the date of the issuance of such grant, over, across, and upon the national forests of the United States for electrical poles and lines for the transmission and distribution of electrical power, and for poles and lines for communication purposes, and for radio, television, and other forms of communication transmitting, relay, and receiving structures and facilities, to the extent of two hundred feet on each side of the center line of such lines and poles and not to exceed four hundred feet by four hundred feet for radio, television, and other forms of communication transmitting, relay, and receiving structures and facilities, to any citizen, association, or corporation of the United States, where it is intended by such to exercise the right-of-way herein granted for any one or more of the purposes herein named."

[13]/ United States Forest Service, Part 1 Southern California National Forests Visions: Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest, R5-MB-075, September 2005; United States Forest Service, Land Management Plan – Part 2 Cleveland National Forest Strategy, R5-MB-077, September 2005; United States Forest Service, Land Management Plan – Part 3 Design Criteria for Southern California National Forests: Angeles National Forest, Cleveland National Forest, Los Padres National Forest, San Bernardino National Forest, R5-MB-080, September 2005; United States Forest Service, Record of Decision – Cleveland National Forest Land Management Plan, R5-MB-077, September 2005, reissued April 2006.

[14]/ United States Forest Service, Land Management Plan – Part 2 Cleveland National Forest Strategy, R5-MB-077, September 2005, p. 112.

[15]/ Ibid., Table 485, p. 14.

[16]/ Ibid., Table 2.2.1, pp. 2-5.

In describing "suitable land uses," the Forest Plan notes that "[l]and use zones (CFR 219.11[c]) were used to map the Cleveland National Forest for the purpose of identifying appropriate management types of 'uses' that are consistent with the achievement of the desired conditions described in Part 1 of the revised forest plan. These land use zones are used to help demonstrate clearly management's intent and to indicate the anticipated level of public land use in any area (Place[17]) of the National Forest. The activities that are allowed in each zone are expected to result in progress along the pathway toward the realization of the desired conditions. National Forest land use zoning is similar in concept to the zoning models that are being used by counties or municipalities throughout southern California."[18] A partial listing of designated suitable commodity and commercial uses in the CNF, by land use zone, is presented in Table 4.11.2-1 (Cleveland National Forest - Suitable Uses Commodity and Commercial Uses). Special use permit proposals are "suitable if they are consistent, or can be made consistent through mitigation and design factors, with the applicable LMP [Forest Plan] standards.[19]

Table 4.11.2-1. Cleveland National Forest Suitable Commodity and Commercial Uses

Land Use Zone	**Developed Area Interface** (DAI)	**Back Country** (BC)	**Back Country Motorized Use Restricted** (BCMUR)	**Back Country Non-Motorized** (BCNM)	**Critical Biological** (CB)	**Wilderness** (W)
Disposal of NFS Lands	By Exception[1]	By Exception[1]	By Exception[1]	By Exception[1]	By Exception[1]	Not Suitable
(Non-Rec) Special Use Low Intensity	Suitable	Suitable	Suitable	By Exception[1]	By Exception[1]	By Exception[1]
Major Utility Corridor	Designated Areas	Designated Areas	Designated Areas	Not Suitable	Not Suitable	Not Suitable
Road Construction or Reconstruction	Suitable	Suitable	Suitable for Authorized Use	Not Suitable	Not Suitable	Not Suitable
Developed Facilities	Suitable	Suitable	Not Suitable	Not Suitable	Not Suitable	Not Suitable
Renewable Energy Resources	Suitable	Suitable	By Exception[1]	By Exception[1]	Not Suitable	Not Suitable

Notes:
1. By Exception = Conditions which are not generally compatible with the land use zone but may be appropriate under certain circumstances.

Source: USDA Forest Service

Other relevant exhibits, as excerpted from the Forest Plan, are presented in Figure 4.11.2-2 (Trabuco Ranger District – Recreational Opportunity Spectrum) and Figure 4.11.2-3 (Trabuco Ranger District – Inventoried Roadless Areas).

- Federal Coastal Zone Management Act. Section 307(c)(3) of the Coastal Zone Management Act (CZMA) requires that all federally-licensed and federally-permitted activities be consistent with the approved state coastal zone management programs. If a FERC project is not located in or would not affect the coastal zone, the project proponent

[17]/ The Forest Plan has a "place-based program emphasis," whereby the CNF is subdivided into distinct geographic units called "places." Within the TRD, the Project's sites are located within the "Elsinore Place."
[18]/ Op. Cit., Land Management Plan – Part 2 Cleveland National Forest Strategy, p. 2.
[19]/ Correspondence from Peggy Hernandez, Acting Forest Supervisor, Cleveland National Forest to Billie Blanchard, California Public Utilities Commission, File Code 2720/1950, March 16, 2007.

shall so note and cite the coastal zone program office's concurrence.[20] As illustrated in Figure 4.11.2-4 (Local Coastal Program), while the coastal areas within Camp Pendleton is within the California Coastal Commission's local coastal zone, no portion of the Project is located within a designated coastal management zone.

- California Government Code. California's land use and zoning law is codified, in part, in Sections 65000-66037 in Division 1 of Title 7 of the CGC. As required under Section 65300 therein: "Each planning agency shall prepare and the legislative body of each county and city shall adopt a comprehensive, long-term general plan for the physical development of the county or city, and of any land outside its boundaries which in the planning agency's judgment bears relation to its planning." As further specified under Section 65300.5, it is the Legislature's intent that "the general plan and elements and parts thereof comprise an integrated, internally consistent and compatible statement of policies for the adopting agency." Senate Bill 1468 (SB1468), signed by the Governor on September 26, 2002, among other matters, amended Section 65302(a) of the CGC to require that cities and counties consider the impact of new growth on military readiness activities carried out on military bases, installations, and operating and training areas.[21]

  As illustrated in Figure 4.11.2-5 (Military Operations Areas and Military Training Routes – South Southern California), as extracted from the "California Advisory Handbook for Community and Military Compatibility Planning,"[22] portions of the Project are located in proximity to Camp Pendleton and Naval Weapons Station, Fallbrook Detachment. Consultation with the Department of the Navy (DON) and USMC is, therefore, required. Camp Pendleton has three types of Special Use Airspace (SUA) approved by the FAA and charted on aviation maps for the purpose of supporting the military training operations at the base.

  Camp Pendleton's SUAs include: Restricted Areas, Military Operations Areas, and Controlled Firing Areas. The SUAs provide a safety buffer to civilian aircraft by alerting them of the presence of hazardous military training operations occurring on the ground or waters below this airspace. The Restricted Airspace is used to support hazardous training activities in which "live-fire" training activities are occurring. When activated, Restricted Airspace prevents civil aircraft from entering these airspace areas and over-flying these hazardous training activities when live-fire training operations are occurring.

  A portion of Restrictive Airspace R-2503B, in the vicinity of the proposed Case Springs Substation, is illustrated in Figure 4.11.2-6 (Camp Pendleton - Restrictive Airspace R-

[20]/ Federal Energy Regulatory Commission, Preparing Environmental Assessments – Guidelines for Applicant's, Contractors, and Staff, March 14, 2001, p. 19.

[21]/ As specified, in part, therein: "Consider the impact of new growth on military readiness activities carried out on military bases, installations, and operating and training areas, when proposing zoning ordinances or designating land uses covered by the general plan for land, or other territory adjacent to military facilities, or underlying designated military aviation routes and airspace. (A) In determining the impact of new growth on military readiness activities, information provided by military facilities shall be considered. Cities and counties shall address military impacts based on information from the military and other sources. (B) The following definitions govern this paragraph: (i) "Military readiness activities" mean all of the following: (I) Training, support, and operations that prepare the men and women of the military for combat. (II) Operation, maintenance, and security of any military installation. (III) Testing of military equipment, vehicles, weapons, and sensors for proper operation or suitability for combat use. (ii) "Military installation" means a base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the United States Department of Defense as defined in paragraph (1) of subsection (e) of Section 2687 of Title 10 of the United States Code."

[22]/ Governor's Office of Planning and Research, California Advisory Handbook for Community and Military Compatibility Planning, February 2006, Appendix A.

2503B) and in Figure 4.11.2-7 (Regional Aviation Airspace Profile – Special Use and Restricted).[23] Designated ground training operation areas are shown in Figure 4.11.2-8 (Camp Pendleton - Ground Training Operations). The proposed Case Springs Substation is located in close proximity to a number of LFAM, AFAs, and MFAs.

The Subdivision Map Act (SMA), codified in Sections 66410-66499.37 of the CGC, provides the statutory framework under which local entities regulate land use and development within their jurisdictions by controlling the design and improvement of the subdivision of real property. The SMA was enacted to ensure uniformity of mapping procedures, provide regulation and control of development, and accommodate the dedication of land within a subdivision.

- California Natural Community Conservation Planning Act. Under the California Natural Community Conservation Planning Act, the California Resources Agency began implementing a pilot program in 1991 for the protection of coastal sage scrub habitat. The pilot program organized five counties in southern California, including San Bernardino and Riverside Counties, into eleven planning subregions, which were further subdivided into subareas. Each subregion and subarea must design its own habitat conservation plan (HCP) for endangered species, which is then submitted to the USFWS under the NCCP. When approved, these plans allow local communities to manage endangered species on specified reserve areas without having to seek additional take permits from the USFWS.

- California Public Resources Code. In Senate Bill 1059 (SB1059), signed by the Governor on September 29, 2006, added Chapter 4.3 (commencing with Section 25330) to Division 15 of the PRC, the Legislature found and declared that: (1) California currently lacks an integrated, Statewide approach to electric transmission planning and permitting that addresses the state's critical energy and environmental policy goals; (2) planning for and establishing a high-voltage transmission system is vital to the future economic and social well-being of California; (3) it is in the interest of the State to identify the long-term needs for electrical transmission corridor zones within the State; and (4) it is in the interest of the State to integrate transmission corridor zone planning at the State level with local planning. The TE/VS Interconnect is specifically identified in the DOE's "Draft National Interest Electric Transmission Corridor Designations" (Docket No. 2007-OE-02), as released on April 27, 2007. The CPUC's CEQA document could be used by the CEC as the environmental basis for formal designation of the proposed transmission alignment as a "transmission corridor zone" under SB1059.

- California Code of Regulations. Section 14000-14010 in Division 1 of Chapter 13 in Title 5 of the CCR outlines minimum standards for school site selection. As specified therein, the property line of the site shall be at least the following distance from the edge of respective power line easements: (1) 100 feet for 50-133 kV line. (2) 150 feet for 220-230 kV line. (3) 350 feet for 500-550 kV line (5 CCR 14010[c]). In addition, the site shall not be located near an above-ground water or fuel storage tank or within 1500 feet of the easement of an above ground or underground pipeline that can pose a safety hazard

[23]/ Op. Cit., Integrated Natural Resources Management Plan – Marine Corps Base and Marine Corps Air Station, Camp Pendleton, Figure 2-3, p. 2-11.

as determined by a risk analysis study, conducted by a competent professional, which may include certification from a local public utility commission (5 CCR 14010[h]). The school district shall consider environmental factors of light, wind, noise, aesthetics, and air pollution in its site selection process (5 CCR 14010[q]).

- California Public Utilities Code. As specified under Section 21670 in Division 9, Part 1, Chapter 4 of the PUC, the Legislature declares that it is in the public interest to provide for the orderly development of each public use airport and the area surrounding the airport. Every county in which there is located an airport which is served by a scheduled airline shall establish an airport land use commission. Each commission shall formulate and adopt an airport land use compatibility plan (Section 21675). If an airport does not have an approved comprehensive land use plan (CLUP) in place, the airport influence area is the area within two miles of the boundary of the airport (Section 21675.1).

  Section 21658 states: "No public utility shall construct any pole, pole line, distribution or transmission tower, or tower line, or substation structure in the vicinity of the exterior boundary of an aircraft landing area of any airport open to public use, in a location with respect to the airport and at a height so as to constitute an obstruction to air navigation, as an obstruction is defined in accordance with Part 77 of the Federal Aviation Regulations, Federal Aviation Administration, or any corresponding rules or regulations of the Federal Aviation Administration, unless the Federal Aviation Administration has determined that the pole, line, tower, or structure does not constitute a hazard to air navigation." Section 21659(a) further states: "No person shall construct or alter any structure or permit any natural growth to grow at a height which exceeds the obstruction standards set forth in the regulations of the Federal Aviation Administration relating to objects affecting navigable airspace contained in Title 14 of the Code of Federal Regulations., Part 77, Subpart C, unless a permit allowing the construction, alteration, or growth is issued by the department."

  As extracted from the "California Advisory Handbook for Community and Military Compatibility Planning," illustrated in Figure 4.11.2-5 (Military Operations Areas and Military Training Routes - South Southern California) is that portion of the Project area located in proximity to Camp Pendleton and Naval Weapons Station, Fallbrook Detachment. Consultation with the Department of the Navy and United States Marine Corps is, therefore, required. Camp Pendleton has three types of Special Use Airspace (SUA) approved by the FAA and charted on aviation maps for the purpose of supporting the military training operations at the base.

4.12 Mineral Resources

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations, and existing Etiwanda Generating Station and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, mineral resources are not further addressed herein.

4.12.1 Mineral Resources Environmental Setting

Construction aggregate is the largest non-fuel mineral commodity produced in California. Aggregate production plays a major role in the State's economy. Demand for aggregate is expected to increase as the State's population continues to grow and infrastructure systems are maintained and improved. Between 2001 and 2005, permitted aggregate resources have decreased by about 2.5 billion tons. Decreases were caused by changes in permitted resource calculations, aggregate consumption, and social and economic conditions leading to mine closure. Areas throughout the State are experiencing shortages in local permitted aggregate resources and are required to transport aggregate longer distances. The shortage of portland concrete cement (PCC) grade sand in the San Diego and San Francisco areas has driven up prices, making importation of sand from Mexico and Canada into those regions competitive.

Of the thirty-one aggregate consumption areas are identified in California, the California Department of Conservations concluded: (1) 4.3 billion tons of permitted resources exist throughout the State; (2) in the next 50 years, California will need 13.5 billion tons of aggregate; (3) about 32 percent of the total projected 50-year aggregate demand is currently permitted; and (4) only six percent of the total aggregate resources are currently permitted.[24] The Project area are located within the Temescal Valley-Orange County and Western San Diego County aggregate consumption areas. As illustrated in Figure 4.12.1-1 (Aggregate Availability in Southern California),[25] projected 50-year aggregate demands exceed permitted resource supplies.

In 2004, the USGS found that the State consumed 221,400,000 million metric tons of sand, gravel, and crushed rock.[26] With a population of about 36.2 million people, the State consumed 6.12 tons per capita, close to the California Department of Conservation's estimated average aggregate consumption rate of 7 tons/year/capita.[27] In high growth areas, like northern San Diego County and southwestern Riverside County, the annual consumption rate for aggregate may be as high as 10 tons/year/capita.[28]

In 2006, the population of Temecula, Murrieta, Lake Elsinore, Hemet, San Jacinto, and adjacent unincorporated areas or Riverside County was estimated at 544,797 persons. By 2030, that population is projected to increase to 887,909 individuals, representing an increase of 343,112 persons or 63.0 percent. Assuming an aggregate demand of 7.0 tons per person, a total of 3.8 million tons of aggregate was needed in 2006, rising to about 6.2 million tons by 2030.

Northern San Diego County had an estimated population of 825,871 persons in 2006. That population is projected to increase to 1,043,034 individuals by 2030, representing an increase of 217,163 individuals or 26.3 percent. Northern San Diego County's demand for aggregate in 2006 was 5.8 million tons, rising to about 7.3 million tons by 2030.[29]

[24]/ California Department of Conservation, Map Sheet 52, Aggregate Availability in California, California Geological Survey, 2006, pp. 19-20.
[25]/ Kohler, Susan L, Aggregate Availability in California – Fifty-Year Aggregate Demand Compared to Permitted Aggregate Resources, Map Sheet 52, California Department of Conservation, California Geological Survey, December 2006.
[26]/ United States Geological Survey, Mineral Yearbook 2004, 2005, Table 3b and 5b.
[27]/ Kohler, Susan L.., Aggregate Availability in California, 2002, p. 16.
[28]/ Husing, John E., Economic Impact on Riverside County & its Southwestern Area – Liberty Quarry, February 13, 2007, p. 6.
[29]/ Ibid., pp. 5-6.

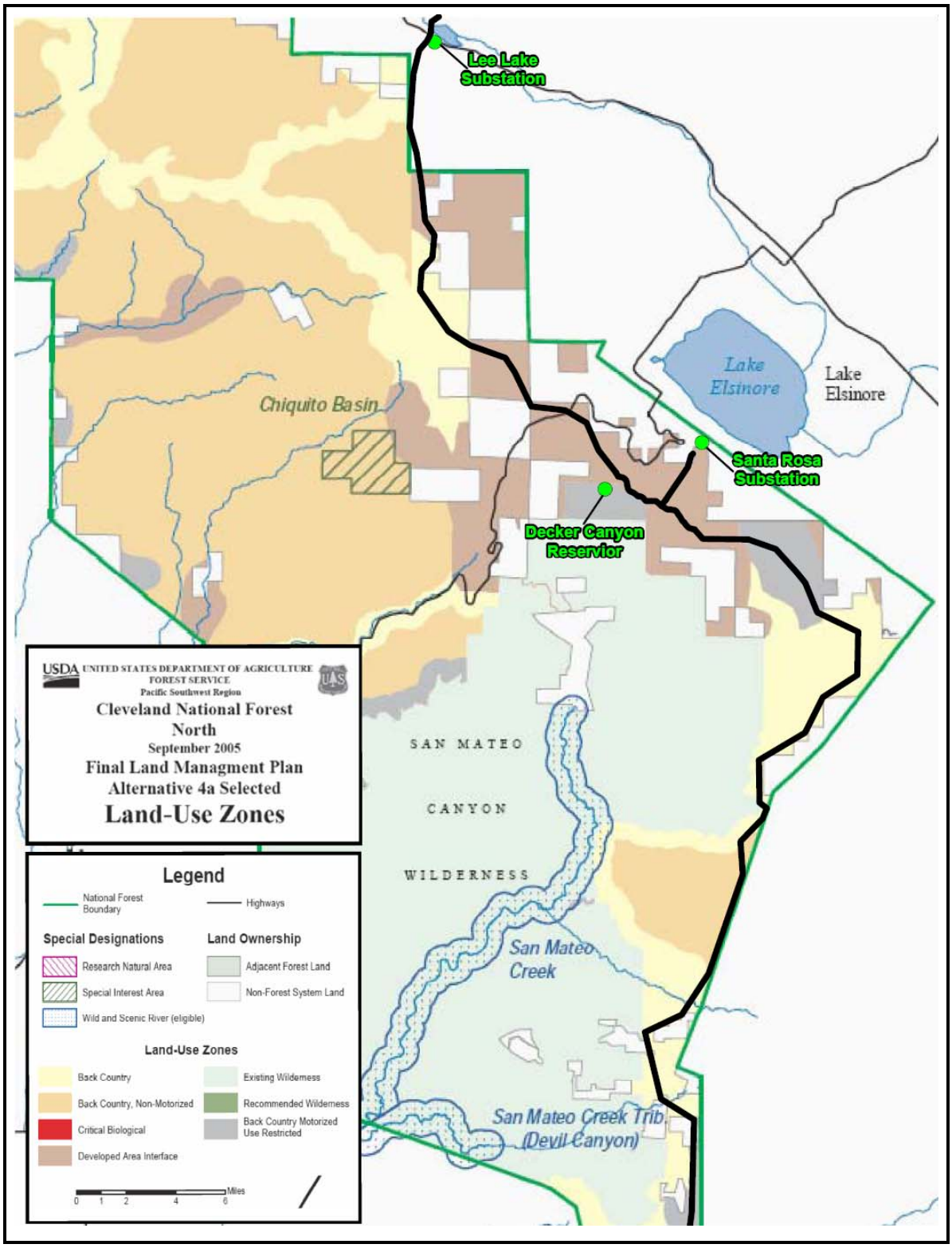


Figure 4.11.2-1. Cleveland National Forest Trabuco Ranger District Land Use Zones
Source: USDA Forest Service

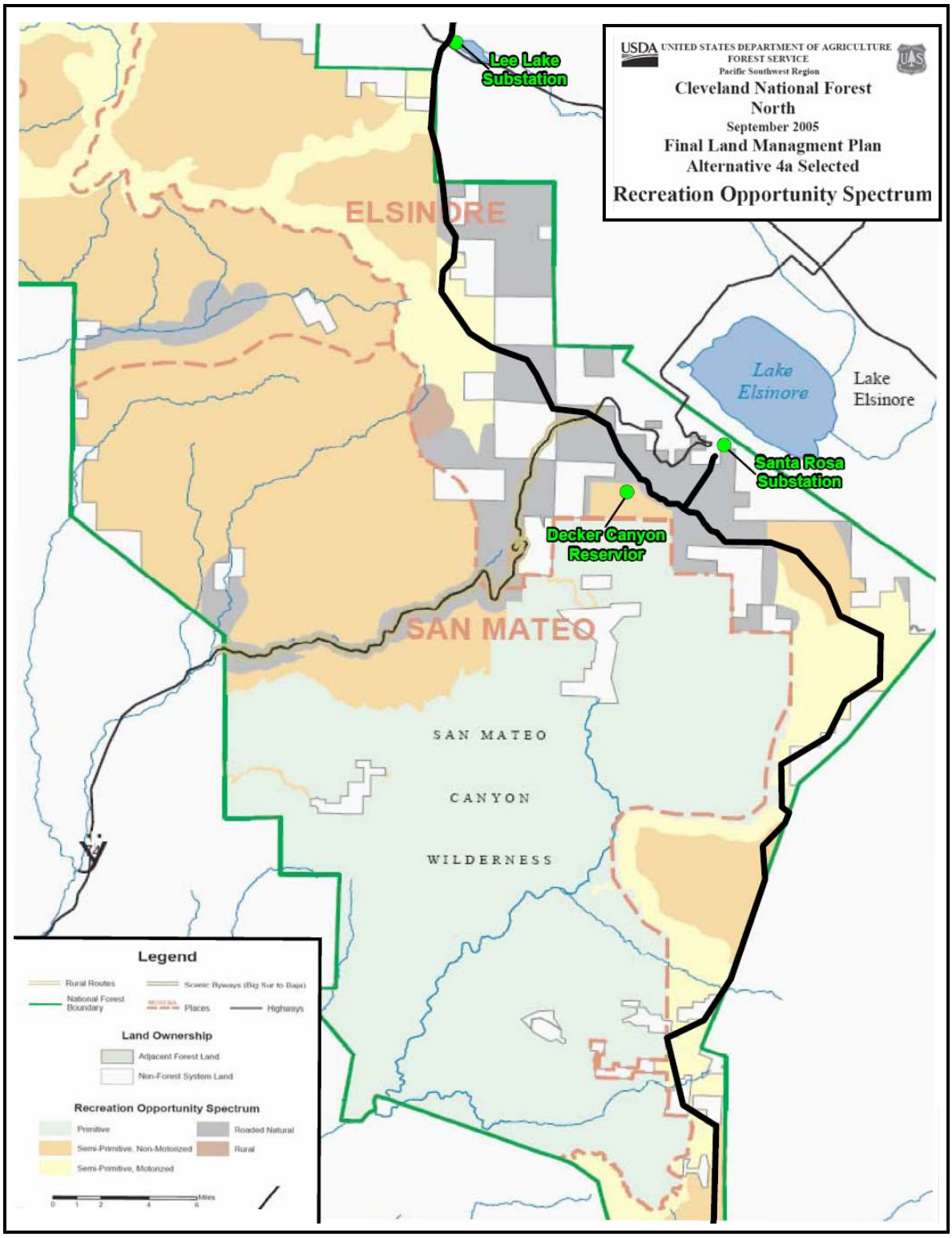


Figure 4.11.2-2. Trabuco Ranger District Recreational Opportunity Spectrum
Source: USDA Forest Service

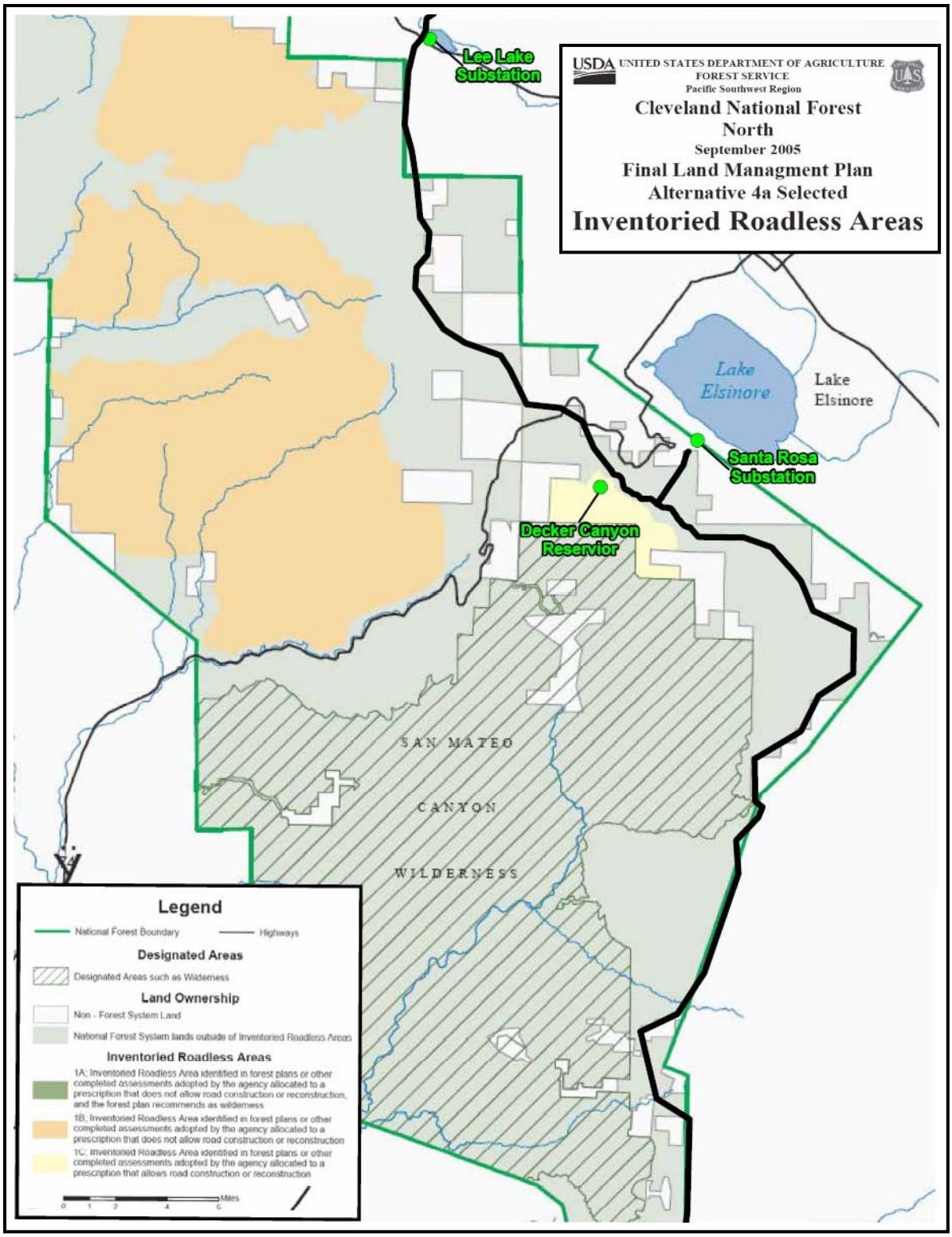


Figure 4.11.2-3. Trabuco Ranger District Inventoried Roadless Areas
Source: USDA Forest Service

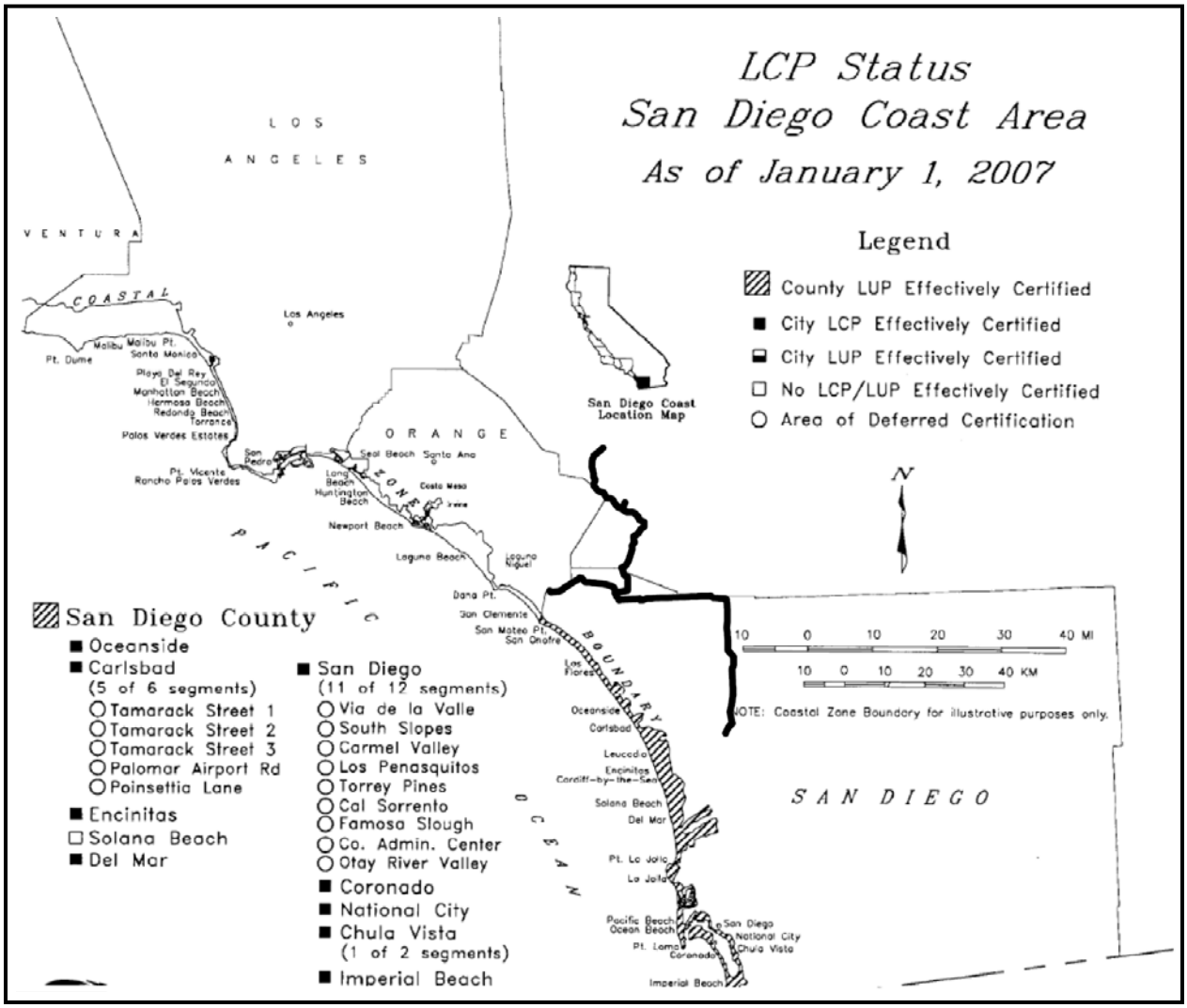


Figure 4.11.2-4. Local Coastal Program
Source: California Coastal Commission

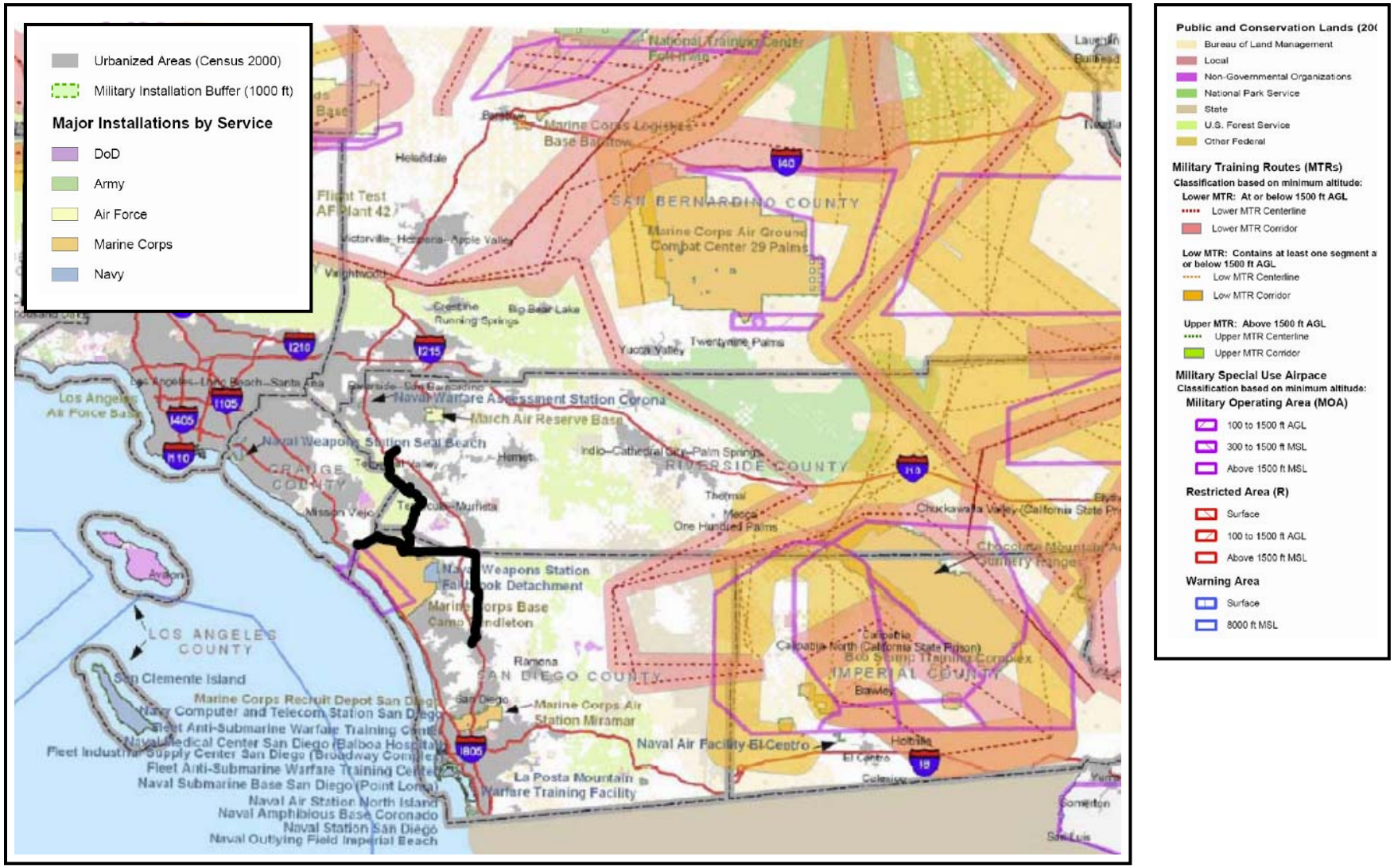


Figure 4.11.2-5. Military Operations Areas and Military Training Routes South Southern California
Source: Governor's Office of Planning and Research

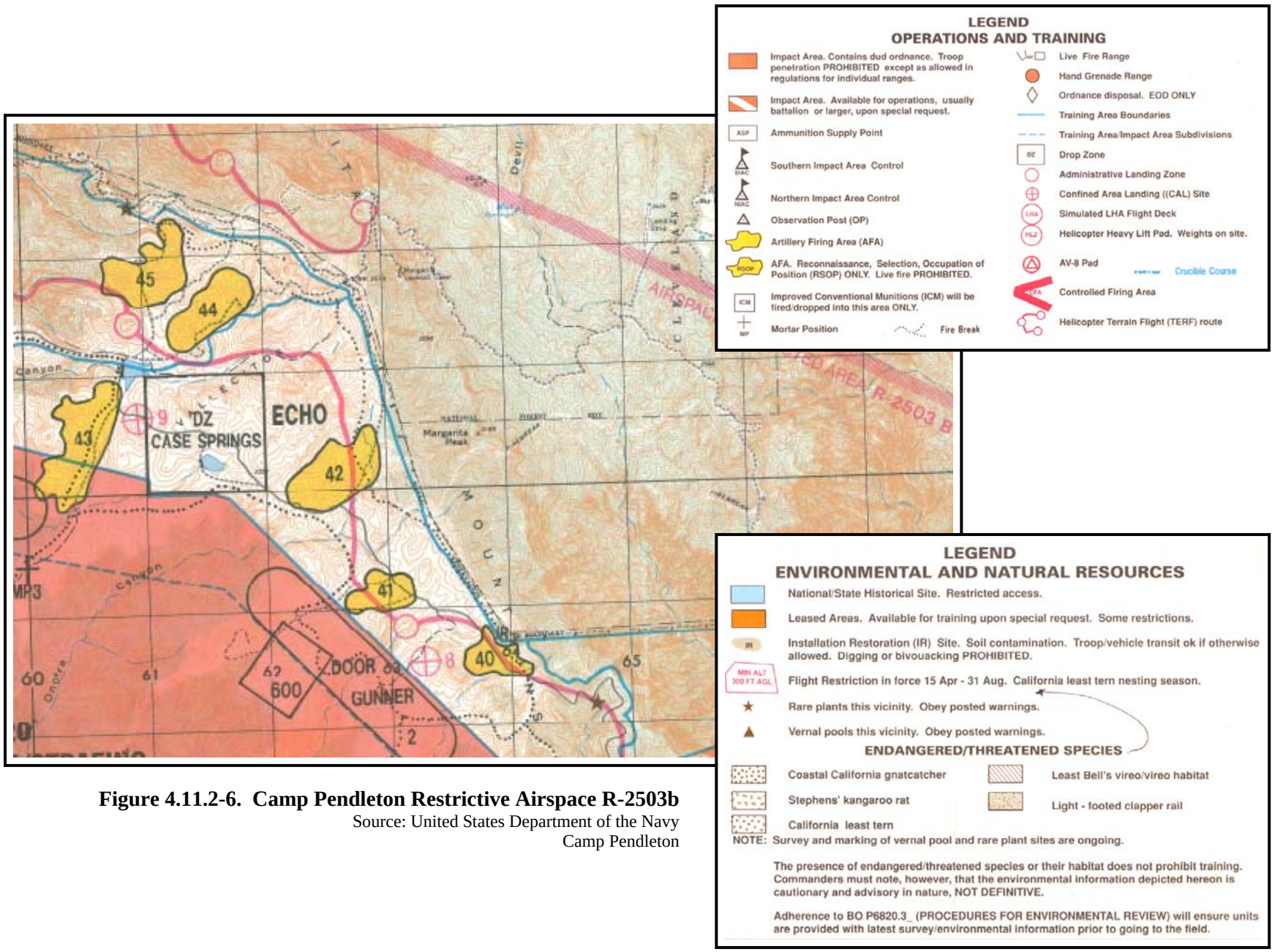


Figure 4.11.2-6. Camp Pendleton Restrictive Airspace R-2503b
Source: United States Department of the Navy
Camp Pendleton

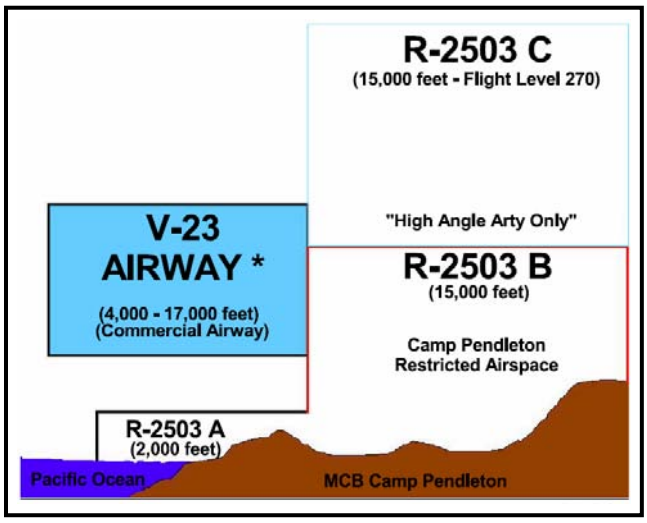
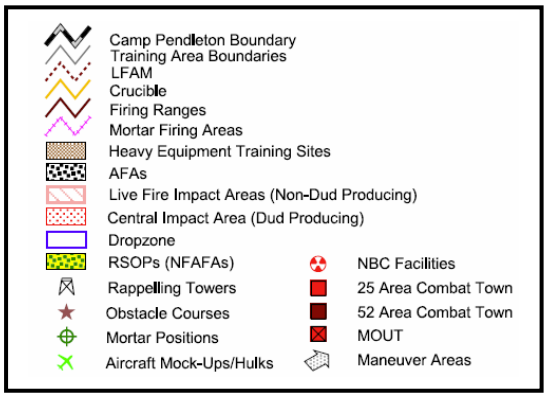


Figure 4.11.2-7. Regional Aviation Airspace Profile - Special Use and Restricted
Source: United States Marine Corps



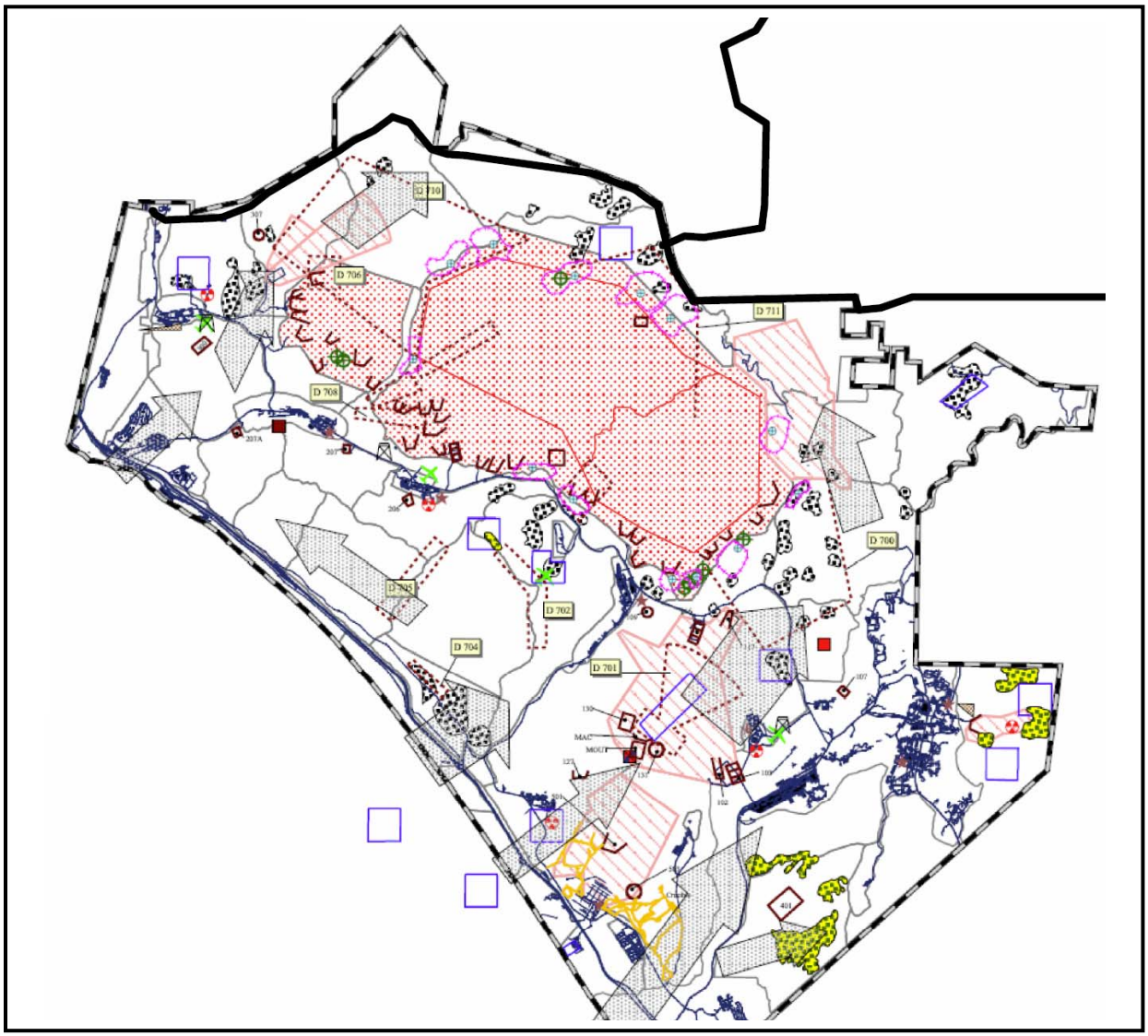


Figure 4.11.2-8. Camp Pendleton Ground Training Operations
Source: United States Marine Corps

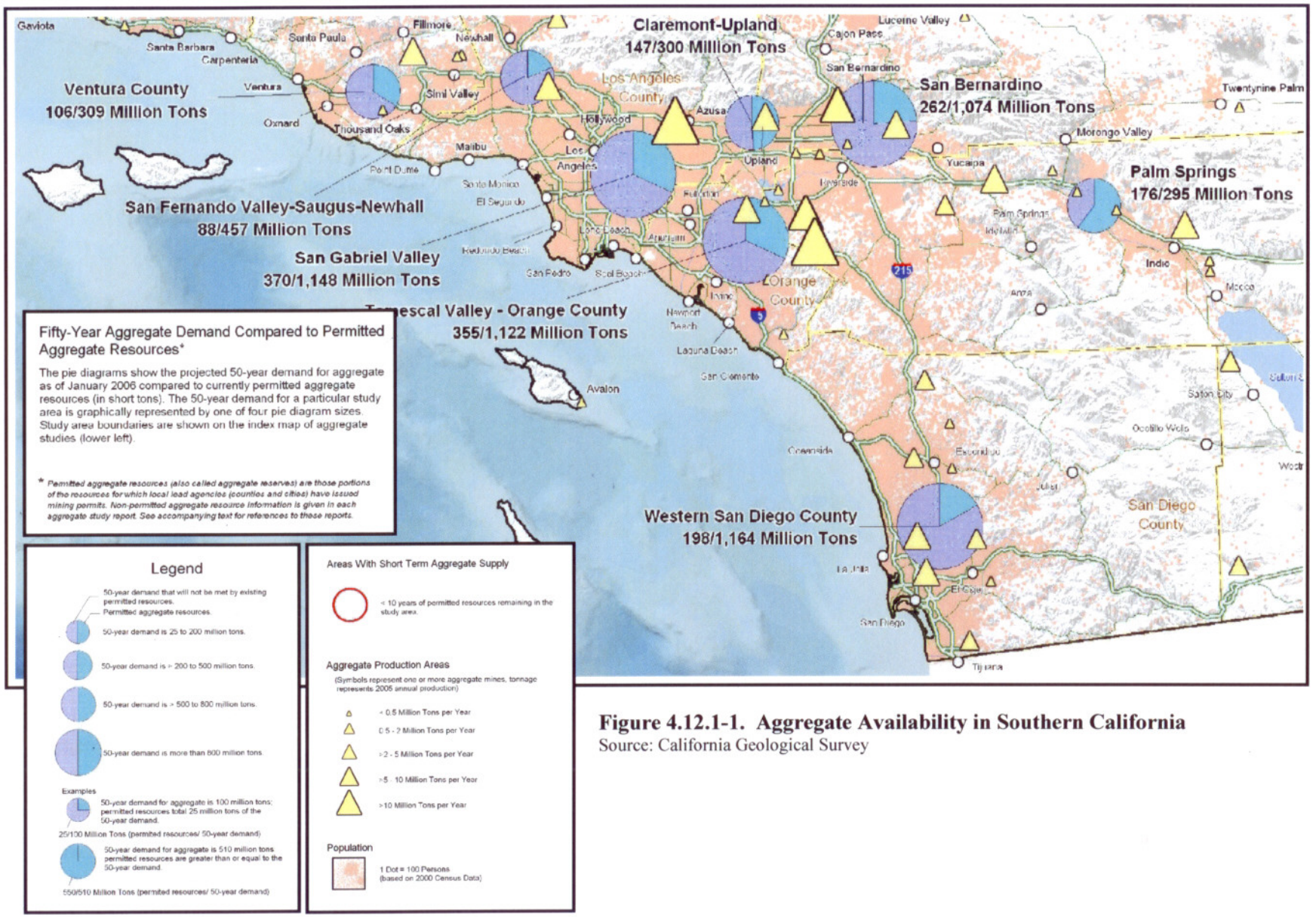


Figure 4.12.1-1. Aggregate Availability in Southern California
Source: California Geological Survey

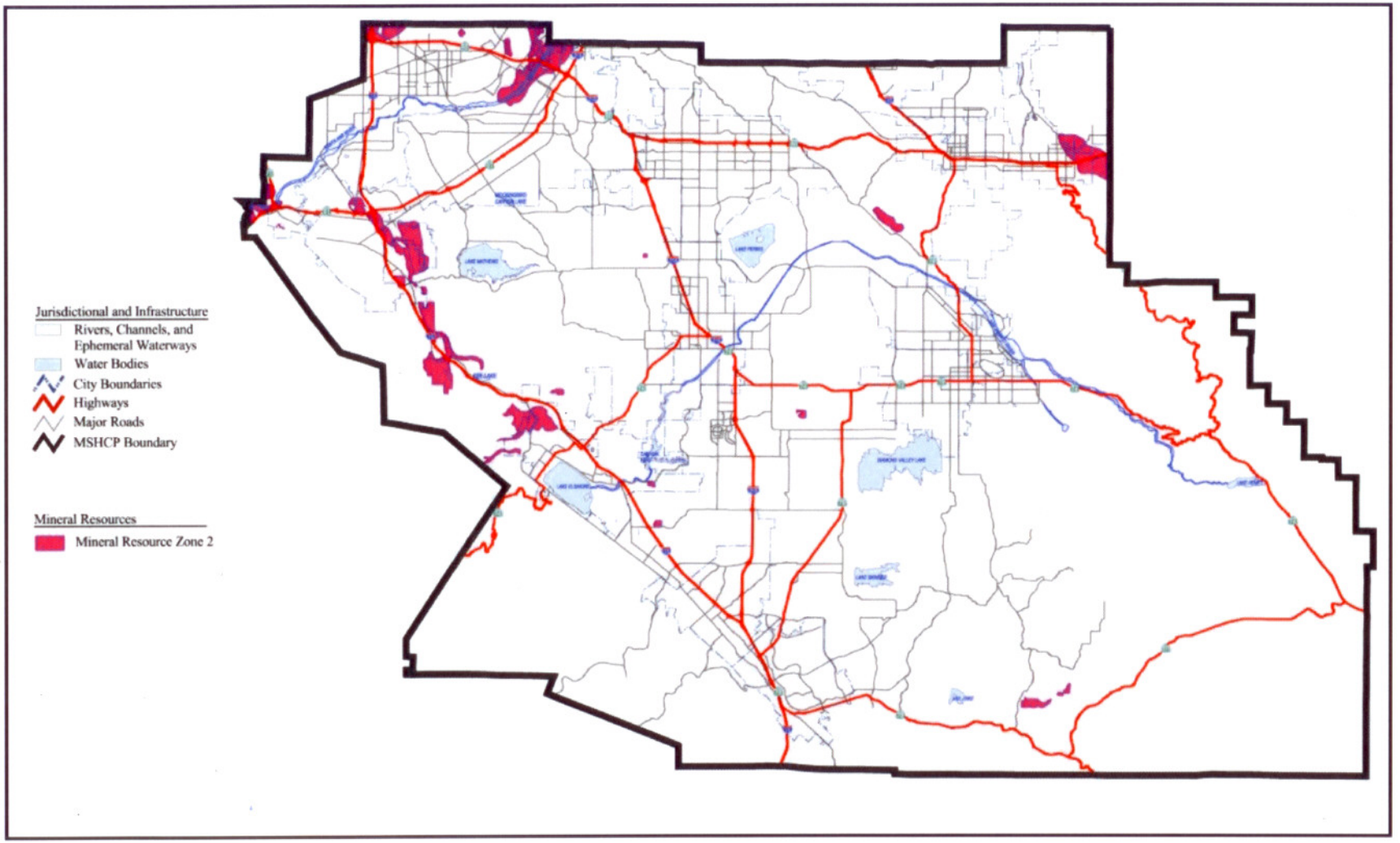


Figure 4.12.1-2. Mineral Resource Zone Designations – Western Riverside County
Source: County of Riverside

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Additional baseline information concerning mineral resources within Riverside and San Diego Counties is presented below.

- **County of Riverside**. Riverside County has diverse mineral resources, including extensive deposits of clay, limestone, iron, sand, and aggregates, which serve as an important component of the County's economy. The mineral resources addressed in this section pertain to those resources that are classified under SMARA. Classification of land within California takes place according to a priority list that was established by the State Mining and Geology Board (SMGB) in 1982. In addition, the State has also designated Aggregate Mineral Resource areas within the County. Accordingly, the MRZ classification system is used to evaluate an area's mineral resources pursuant to SMARA. MRZ classifications are applied based on available geologic information, including geologic mapping and other information on surface exposures, drilling records, and mine data; and on socioeconomic factors such as market conditions and urban development patterns.

  Figure 4.12.1-2 (Mineral Resource Zone Designations – Western Riverside County) identifies the areas within western Riverside County having potential mineral resource deposits. Several areas located along Temescal Wash are classified by the California Geological Survey as "Mineral Resource Zone 2" (MRZ-2), defined as an area where adequate information indicated that significant mineral deposits are present or where it is judged that a high likelihood exists for their presence. As indicated in the Riverside County General Plan, within Riverside County, there are three permitted surface mining zones between Lake Elsinore and Lee (Corona) Lake. In addition, SDG&E's existing Talega-Escondido 230-kV transmission line traverses the site of the proposed Liberty Quarry in southwestern Riverside County.[30]

  Active mining activities within the general area include clay extraction and brick and other ceramic fabrication operations at Pacific Clay Products, Inc., located in the unincorporated area of Alberhill. Several active clay pits are being operated at that location. Both residual and sedimentary clay can be found within these deposits. The residual clay formed in place during Paleocene time by deep weathering of the mezozoic crystalline bedrock. Sedimentary clay was formed of erosion that deposited in the Silvarado Formation. This clay-bearing zone underlines an area of approximately 1.5 square miles bordering the Temescal Valley. Unmined portions have been demonstrated by subsurface data and by geologic evaluation to be of similar economic value to areas presently being mined.[31] Materials for the liner of the proposed Decker Canyon Reservoir could be imported from the Pacific Clay Product's existing operation.

  As indicated in the "Elsinore Area Plan," a component of the Riverside County General Plan: "There are significant areas of mineral resource extraction within the Elsinore Area Plan. The area contains regionally important aggregate and clay resources, as well as non-regionally important mineral resources. Most of these resources are currently being extracted or are being held in reserve for future extraction. Compatibility with surrounding land uses, potential noxious impacts, surface runoff management, and the

[30]/ County of Riverside, Initial Study, Environmental Assessment No. 40147, July 15, 2005
[31]/ Phillips Brandy Reddick, Draft Environmental Impact Report – Lake Elsinore General Plan, City of Lake Elsinore, July 1990, p. 29

future reclamation of the sites must be considered for all existing and proposed mineral extraction areas." As determined by the Riverside County Board of Supervisors, based on an assessment of the programmatic environmental impacts associated with the implementation of the Riverside County General Plan and the development activities authorized therein, with regards to mineral resource impacts, no significant environmental effects were identified.[32]

- **County of San Diego**. As described in the Valley-Rainbow Interconnect PEA, SDG&E's previously proposed Valley-Rainbow transmission alignment is underlain by MRZ-3a and MRZ-3b. These two mineral resource zone designations are associated with areas of known aggregate resources of undetermined mineral resource significance. With the possible exception of aggregate resources, the existing Talega-Escondido transmission line is not known to contain mineral resources.

4.12.2 Mineral Resources Regulatory Setting

The following discussion is presented of that State statute most applicable to an understanding of the Project's mineral resources regulatory setting.

- Surface Mining and Reclamation Act. The Surface Mining and Reclamation Act of 1975 (SMARA), codified in Section 2710 et seq. in Chapter 9 of Division 2 of the PRC, mandated the initiation, by the State Geologist, of a Mineral Land Classification System in order to help identify and protect mineral resources in areas within the State subject to urban expansion or other irreversible land uses that would preclude mineral extraction. Construction aggregate was selected by the State Mining Geology Board (SMGB) to be the initial commodity targeted for classification because of its importance to society, unique economic characteristics, and the imminent threat that continuing urbanization poses to that resource. The State Geologist subsequently developed Mineral Resource Zone (MRZ) nomenclature, criteria, and classifications.[33]

4.13 Noise

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations, and existing Etiwanda Generating Station and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, noise is not further addressed herein.

[32]/ Op. Cit., CEQA Findings of Fact and Statement of Overriding Considerations of the Board of Supervisors of Riverside County for the 2003 Riverside County General Plan, Findings of Fact for Riverside General Plan Impacts and Mitigation Measures, Environmental Impact 4.12.1.

[33]/ "MRZ-1" (Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence); "MRZ-2" (Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists); "MRZ-3" (Areas containing mineral deposits the significance of which cannot be evaluated from available data); "MRZ-4" (Areas where available information is inadequate for assignment to any other MRZ zone); and "SZ" (Areas containing unique or rare occurrences of rocks, minerals, or fossils that are of outstanding scientific significance shall be classified in this zone) (Source: Division of Mines and Geology, California Surface Mining and Reclamation Policies and Procedures, Guidelines for Classification and Designation of Mineral Resources, 1998, p. 3).

4.13.1 Noise Environmental Setting

Corona is the electrical breakdown of air into charged particles caused by the electric field at the surface of the conductors. Corona-generated audible noise from transmission lines is generally characterized as a cracking or hissing noise. Noise levels generated by transmission lines are greater during damp and rainy weather than during dry weather. Modern transmission lines are designed, constructed, and maintained so that, during dry-weather conditions, they operate below the corona-inception voltage. Corona can occur on the conductors, insulators, and hardware of an energized high-voltage transmission line. Corona on conductors occurs at locations where the field has been enhanced by protrusions, such as nicks, insects, or drops of water. The Electric Power Research Institute's (EPRI) daytime corona and arcing visual inspection technology (DayCor) lets the exact position, type, and magnitude of corona be determined, thus enabling the identification of the offending component and the possibility of failure. DayCor observations are unaffected by daylight and allow corona inspection to become part of the line's routine inspection.[34]

The EPRI has conducted noise tests and studies and has published reference material on transmission line noise. EPRI states that noise produced by a conductor decreases at a rate of three dB per doubling of distance from the source. The EPRI's "Transmission Line Reference Book"[35] indicates that fair-weather audible noise from modern transmission lines is generally indistinguishable from background noise at the edge of a 100-foot right-of-way. The audible noise from a typical 230-kV line with two conductors per phase would likely be less than 40 dBA at a distance of 40 feet from the outside conductor at ground level. During rainy or damp weather, an increase in corona-generated audible noise would be balanced by an increase in weather-generated noise.

Transmission line-related radio-frequency interference is one of the indirect effects of line operation and is produced by the physical interactions of transmission line electric fields. Corona-generated radio interference is most likely to affect the amplitude modulation (AM) broadcast band (535-1,605 kilohertz). Frequency modulation (FM) is rarely affected. Only AM receivers located very near to transmission lines have the potential to be affected by radio interference. The level of such interference usually depends on the magnitude of the electric field involved.

When coronal discharge is present, the air surrounding the conductors is ionized and many chemical reactions take place, producing small quantities of ozone and other oxidants. Approximately 90 percent of the oxidants are ozone, while the remaining 10 percent are composed primarily of nitrogen oxides.[36]

As reported by the FAA: "While instances may arise in which aviation noise does create a concern for those protecting wildlife or involved in animal husbandry, in general, aviation noise has a minimal impact on animals."[37] Conversely, it has been noted that: "Several reports stated

[34]/ Electric Power Research Institute, Guide to Corona and Arcing Inspection at Overhead Transmission Lines, EPRI Report 1001910, November 2001.
[35]/ Electric Power Research Institute, Transmission Line Reference Book, 345-kV and Above, Second Edition, 1982.
[36]/ Op. Cit., Final Environmental Impact Statement - Tucson Electric Power Company Sahuarita-Nogales Transmission Line, DOE/EIS-0336, BLM Reference No. AZA 31746, p. 3-104.
[37]/ Federal Aviation Administration, Aviation Noise Effects, ADA-154319, United States Department of Commerce, March 1985, p. 67.

that helicopters appear to cause a greater flight/fright response in wildlife than fixed-wing aircraft"[38] and "[a] vast literature supports the hypothesis that antipredator behavior has a cost to other activities, and that this trade-off is optimized when investment in antipredator behavior tracks short-term changes in predation risk. Prey have evolved antipredator responses to generalized threatening stimuli, such as loud noises and rapidly approaching objects. Thus, when encountering disturbance stimuli ranging from the dramatic, low-flying helicopter to the quiet wildlife photographer, animal responses are likely to follow the same economic principles used by prey encountering predators."[39]

As noted by the USDA Forest Service: "Aircraft overflights can affect the physiology and behavior of wildlife, and if the stress becomes chronic, can negatively affect an animal's fitness and long-term survival. Both sound and visual stimuli can cause stress. The manner and degree in which overflights influence wildlife depends on life history of the species, characteristics of the aircraft and flight activities, and other factors including habitat, season, activity at time of exposure, sex, age, health, and previous experience with aircraft. . .The relationship between overflights and impacts to wildlife is complex, but it is clear that the closer the aircraft, the more likely an animal will be stressed; helicopter overflights are more stressful than fixed-wing overflights. Studies have documented physiological and behavioral responses to helicopter overflights. Physiological responses, such as increased heart rate or stress hormone levels, have been demonstrated, but whether such responses lead to long-term harm is equivocal. Combined with other events such as nesting, nursing young, or harsh winters, the impacts of physiological stress can be more severe. Behavioral responses to overflights can range from indifference to extreme panic. Behavior can vary among species, and even among individuals within a species. Escape flight is the most common response. Frequent overflights have the greatest likelihood of harmful consequences… Some wildlife species can develop an increased tolerance, or become habituated to aircraft overflights, decreasing apparent physiological stress and behavioral response. Frequent and predictable overflights are more likely to lead to habituation."[40]

With regards to transmission lines, there are no design-specific Federal regulations limiting audible noise (corona). Any noise usually results from the action of the electric field at the surface of the line conductor and is perceived as a crackling, frying, or hissing sound or hum. Such noise is usually generated during wet weather and from lines 345 kV or higher.

Additional baseline information concerning the existing noise environment within the City of Lake Elsinore, County of Riverside, and County of San Diego is presented below.

- **City of Lake Elsinore**. Sensitive receptors in the Project vicinity include, but may not be limited to, proximal single- and multi-family residential uses and Butterfield Elementary Visual and Performing Arts Magnet School and Ortega Trails Youth Center (16275 Grand Avenue, Lake Elsinore).

[38]/ United States Fish and Wildlife Service, Effects of Aircraft Noise and Sonic Booms on Fish and Wildlife: Results of a Survey of U.S. Fish And Wildlife Service Endangered Species and Ecological Services Field Offices, Refuges, Hatcheries, and Research Centers, NERC 88/30, June 1988, p. 4.
[39]/ Frid, A. and L. M. Dill, Human-Caused Disturbance Stimuli as a Form of Predation Risk. Conservation Ecology Vol. 6(1): No. 11, 2002, (http://www.consecol.org/vol6/iss1/art11/).
[40]/ United States Department of Agriculture, Forest Service, Alaska Region, Draft Environmental Impact Statement – Helicopter landing Tourism on the Juneau Icefield, 2002-2006, File Code 1950, Chapter 4, Environmental Consequences on Wildlife.

- **County of Riverside**. As determined by the County of Riverside, based on an assessment of the programmatic environmental impacts associated with the implementation of the Riverside County General Plan: "Noise levels from grading and other construction activities would potentially result in noise levels reaching 91 dBA L_{max} at off-site locations 50 feet from the site boundary. This would result in potentially significant noise impacts to off-site sensitive receptors adjacent to the individual construction site. Compliance with the County's noise ordinance construction hours would be required to reduce construction-related noise impacts to a less than significant level."[41] Riverside County General Plan policies and measures designed to mitigate noise include:

  - ◊ The construction contractor shall use temporary noise attenuation fences where feasible, to reduce construction noise impacts on adjacent noise sensitive land uses.
  - ◊ During excavation and grading, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards; the construction contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the Project site.
  - ◊ The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the Project site during all Project construction.
  - ◊ The construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Saturday. No construction shall be allowed on Sundays and public holidays.
  - ◊ The construction-related noise mitigation plan required shall also specify that haul truck deliveries be subject to the same hours specified for construction equipment.
  - ◊ Additionally, the plan shall denote any construction traffic haul routes where heavy trucks would exceed 100 daily trips (counting those both to and from the construction site). To the extent feasible, the plan shall denote haul routes that do not pass sensitive land uses or residential dwellings. Lastly, the construction-related noise mitigation plan shall incorporate any other restrictions imposed by County staff.

  As determined by the County Board of Supervisors, the implementation of these policies and mitigation measures will reduce this impact to a less-than-significant level.[42]

- **County of San Diego**. In 1996, SANDAG prepared a master list of all known public, private, and military airports and heliports in the San Diego region. Camp Pendleton and the existing heliport at Palomar Medical Center (555 E. Valley Parkway, Escondido 92025) was the only heliport identified by SANDAG.

[41]/ County of Riverside, CEQA Findings of Fact and Statement of Overriding Considerations of the Board Of Supervisors of Riverside County for the 2003 Riverside County General Plan, October 7, 2003, Findings of Fact for Riverside General Plan Impacts and Mitigation Measures, 4.13.1.
[42]/ Ibid.

As illustrated in Figure 4.13.1-1 (1996 Aviation Facilities Inventory for the San Diego Region),[43] existing airports located near the Talega-Escondido 230 kV transmission line include the privately operated Fallbrook Community Airport (2141 S. Mission Drive, Fallbrook 92028) and the military airport located at Camp Pendleton (Vandergrift Boulevard, Camp Pendleton 92132). The Fallbrook Community Airport is located on San Diego County-owned land, approximately two miles south of the town center of Fallbrook. The airport is bounded by the United States Naval Weapons Station Seal Beach, Fallbrook Annex, Camp Pendleton to the west and Mission Road along the eastern border.[44] Existing (1995) and projected (2015) annual operations at the Fallbrook Community Airport and at Camp Pendleton are listed in Table 4.13.1-1 (Annual Aircraft Operations).[45]

Table 4.13.1-1. Annual Aircraft Operations

Year	Based Aircraft	Based Helicopters	Total All Based	Aircraft Operations	Helicopter Operations	Total All Operations	Total All Operations/All Based
Fallbrook Community Airport							
1995	100	0	100	7,223	0	7,223	72
2015	NA	NA	NA	NA	60	NA	NA
Camp Pendleton							
1995	0	115	115	0	120,000	120,000	1,043
2015	NA	NA	NA	0	175,000	175,000	NA

Source: San Diego Association of Governments

As indicated in the "Fallbrook Community Airpark Airport Master Plan Final Report," the number of based aircraft at Fallbrook Community Airport is projected to increase from 112 aircraft in 2005 to 230 aircraft in 2025. Aircraft operations are projected to increase form present levels of approximately 36,124 to 51,700 aircraft operations in 2025.[46]

As further indicated therein, helicopter operations are currently performed from a "recently constructed helipad on the eastern portion of the transient ramp. Patterns have been established to minimize noise to the surrounding community based on this location. This project involves enhancing the helipad with the installation of lighting and windsock. . .Additionally, the mast plan recommends developing 0.7 acres near the helicopter area to provide a building area adjacent to helicopter operations."[47]

4.13.2 Noise Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's regulatory setting.

[43]/ San Diego Association of Governments, 1996 Aviation Facilities Inventory for the San Diego Region, August 1996.
[44]/ County of San Diego, Notice of Preparation – Program Environmental Impact Report for Fallbrook Community Airpark Airport Master plan, Fallbrook Community Airport, Fallbrook, San Diego County, October 16, 2006.
[45]/ Future military operational requirements are difficult to precisely define. Considerable changes can occur over time due to adjustments to force structure, fleet and equipment, deployment requirements, surge requirements, and operational tempo (Source: San Diego Regional Airport Authority [Ricondo & Associates Team], Draft Report: Alternative Analysis – Military Sites, May 2006, p. 4-46).
[46]/ County of San Diego (P&D Aviation), Fallbrook Community Airpark Airport Master Plan Final Report, March 2006, p. 2-2.
[47]/ Ibid., pp. 6-14 and 6-28.

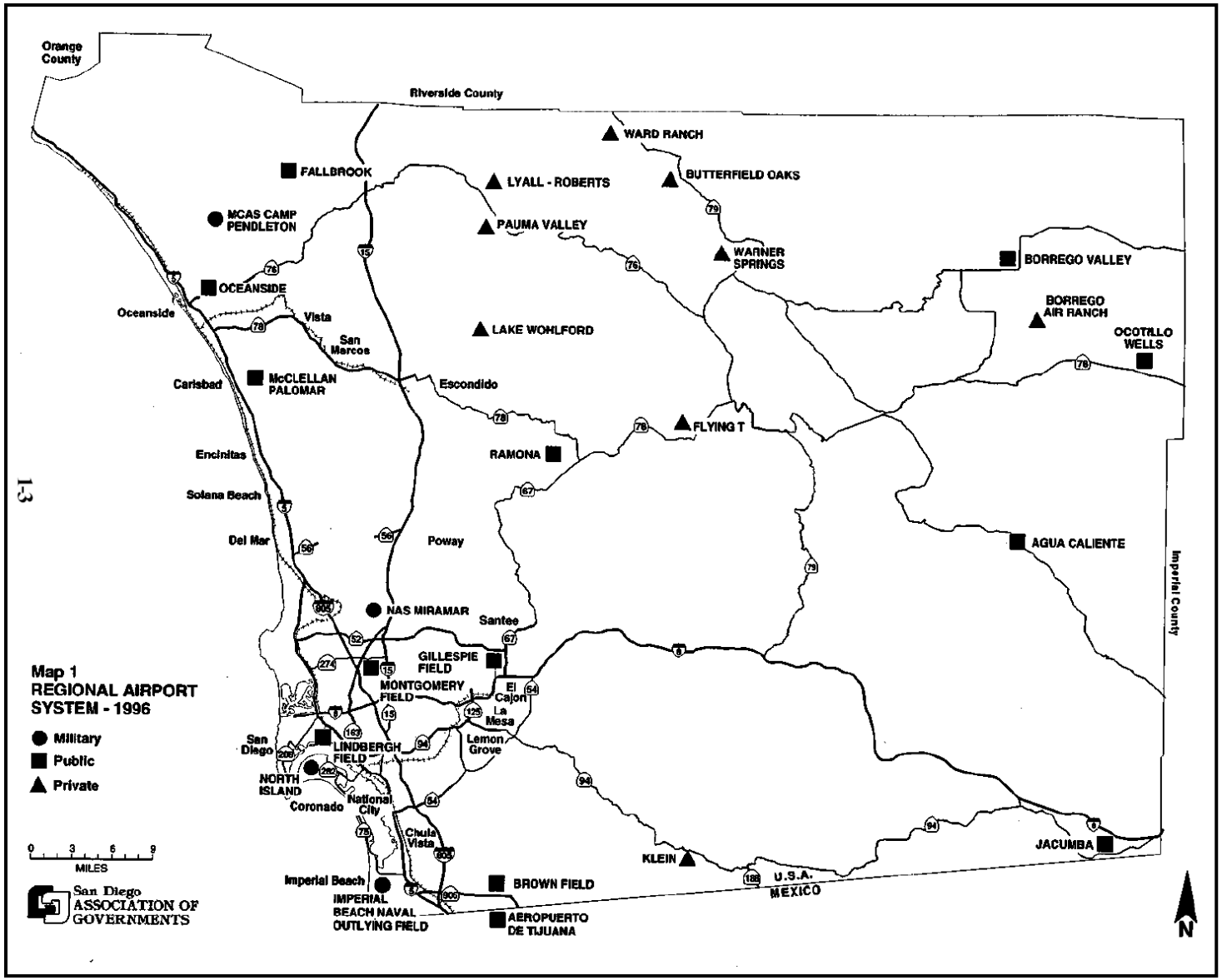

Figure 4.13.1-1. 1996 Aviation Facilities Inventory for the San Diego Region (1 of 2)
Source: San Diego Association of Governments

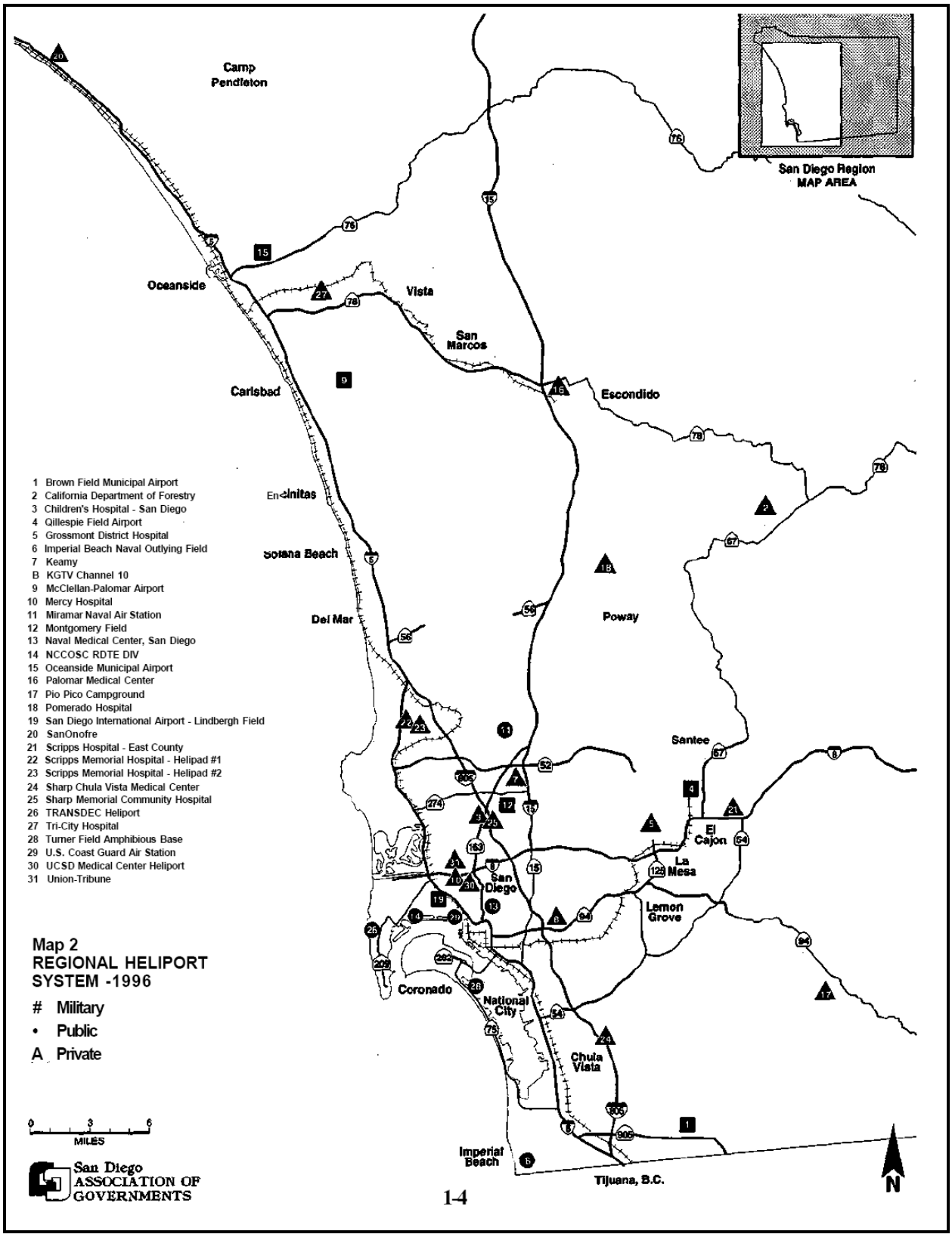

Figure 4.13.1-1. 1996 Aviation Facilities Inventory for the San Diego Region (2 of 2)
Source: San Diego Association of Governments

- Federal Noise Control Act. The Federal Noise Control Act of 1972 (PL 92-574), along with its subsequent amendments (Quite Communities Act of 1978 [42 U.S.C. Parts 4901-4918]) require the Federal government (acting through the USEPA and FAA) to set and enforce uniform noise control standards for, among other things, aircraft and airports, interstate motor carriers and railroads, workplace activities, medium and heavy-duty trucks, motorcycles and mopeds, portable air compressors, and federally-assisted housing projects. In addition, the act delegated to the states the authority to regulate environmental noise and directs governmental agencies to comply with local community noise standards and regulations.

- Federal Occupational Safety and Health Act. Under the Occupational Safety and Health Act of 1970 (29 U.S.C. 651-671), OSHA has adopted regulations (29 CFR 1910.95) that establish maximum noise levels to which workers at a facility may be exposed. OSHA noise regulations are designed to protect workers against the effects of noise exposure and list permissible noise level exposure as a function of the amount of time during which the worker is exposed. Separate noise regulations have been established for construction noise exposure (29 CFR 1926.52), requiring hearing protection when noise levels exceed a certain level for a specified time period. OSHA regulations also dictate hearing conservation program requirements and workplace noise monitoring requirements.[48]

  Under the provisions of the Federal Occupational Safety and Health Act of 1970, the California Department of Industrial Relations - Division of Occupational Safety and Health's (Cal/OSHA) occupational safety program is required to be at least as effective as the OSHA program.

- Federal Communications Commission Regulations. The Federal Communication Commission's (FCC) regulations (47 CFR 15.25) prohibit the operation of any devices producing force fields that interfere with radio communications, even if such devices are not intentionally designed to produce radio-frequency energy. Such interference is due to the radio noise produced by the action of the electric fields on the surface of the energized conductor. The FCC requires each line operator to mitigate all complaints about interference on a case-specific basis.[49]

- Federal Aviation Regulations. Federal aviation regulations (FAR Part 36) set forth noise levels that are permitted for aircraft of various weights, engine number, and certification date. FAR Part 36, adopted in 1969, does not address rules applicable to helicopters. As indicated in Advisory Circular 91-66 (Noise Abatement for Helicopters),[50] the FAA has developed guidelines intended to assist pilots, operators, and others in the establishment of noise reduction procedures when operating helicopters.

[48]/ Cal/OSHA has promulgated Occupational Noise Exposure Regulations (8 CCR 5095 et seq.) that set employee noise exposure limits equivalent to federal OSHA standards.

[49]/ Since the level of interference depends on factors such as line voltage, distance from the line to the receiving device, orientation of the antenna, signal level, line configuration, and weather conditions, maximum interference levels are not specified as design criteria for modern transmission lines.

[50]/ Federal Aviation Administration, Advisory Circular 91-36, June 4, 1987.

Advisory Circulator 91-36D (Visual Flight Rules Flight Near Noise-Sensitive Areas)[51] encourages pilots making visual flight rules (VFR) flights near noise-sensitive areas to fly at altitudes higher than the minimum permitted by regulations and on flight paths that will reduce aircraft noise in such areas. As defined therein, "noise-sensitive" areas include residential, educational, health, and religious structures and sites and parks, recreational areas (including areas with wilderness characteristics), wildlife refuges, and cultural and religious sites where a quiet setting is a generally recognized feature or attribute.

As indicated in FAA Advisory Circular 91-36D: "Excessive aircraft noise can result in annoyance, inconvenience, or interference with the uses and enjoyment of property, and can adversely affect wildlife. It is particularly undesirable in areas where it interferes with normal activities associated with the area's use, including residential, educational, health, and religious structures and sites, and parks, recreational areas (including areas with wilderness characteristics), wildlife refuges, and cultural and historic sites where a quiet setting is a generally recognized feature or attribute. Moreover, the FAA recognizes that there are locations in National Parks and other federally managed areas that have unique noise-sensitive values. The Noise Policy for Management of Airspace over Federally Managed Areas, issued November 8, 1996, states that it is the policy of the FAA in its management of the navigable airspace over these locations to exercise leadership in achieving an appropriate balance between efficiency, technological practicability, and environmental concerns, while maintaining the highest level of safety."[52]

The FAA's "Noise Policy for Management of Airspace over Federally Managed Areas" stated: "The National Park System and other natural resource management areas under Federal jurisdiction include many locations with unique values which merit special environmental protection. Some areas provide opportunities for solitude and natural quiet and allow visitors to experience nature unaffected by civilization. Some provide opportunities for people to visit historically authentic settings, as they existed before the introduction of mechanized power. Others contain designated wilderness, critical habitat for endangered species, or solemnity of purpose, which would be diminished by the intrusion of noise. While aircraft noise is not the only noise or environmental impact that may be incompatible with areas having such unique values, this is the area of FAA's special expertise and jurisdiction."[53]

In order to carryout that policy, the FAA will, among other things, actively consult with other Federal agencies to identify and mitigate appropriately aircraft noise levels that are not compatible with designated locations in federally managed areas. Such consultation will ensure that any resulting mitigation strategies will not transfer impacts to other noise-sensitive locations within or beyond the federally managed area.

[51]/ Federal Aviation Administration, Advisory Circular 91-36D, September 17, 2004.
[52]/ Federal Aviation Administration, Advisory Circular 91-36D, Visual Flight Rules Flight Near Noise-Sensitive Areas, September 17, 2004, p. 1.
[53]/ Federal Aviation Administration, FAA Order 7400.2F, Procedures for Handling Airspace Matters, effective February 16, 2006, Appendix 9.

- California Occupational Safety and Health Act. The California Occupational Safety and Health Act of 1973, codified in Section 6300 et seq. of the California Labor Code (CLC), establishes a mandate to assure safe and healthful working conditions for all California workers. Cal/OSHA is designated under the CLC to be responsible for administering the provisions of the California Occupational Safety and Health Act and the enforcement programs required to comply with that mandate.

- California Government Code. As required under Section 65300 of the CGC, each planning agency shall prepare and the legislative body of each county and city shall adopt a comprehensive, long-term general plan for the physical development of the county or city and any lands outside its boundaries that, in the planning agency's judgment, bear relation to its planning. Section 65302 of the CGC stipulates that the local general plan shall consist of seven mandated elements, including a noise element. As required under Section 65302(f) therein, the noise element shall identify and appraise noise problems in the community and shall recognize the guidelines established by the California Department of Health Service's Office of Noise Control.

  Most jurisdictions in California utilize the weighted 24-hour Community Noise Equivalent Level (CNEL) noise exposure criterion not only as a planning tool but require actual verification of the ability to meet these standards as part of building plan approval process. These criteria are based on compatibility standards established by DHS' Office of Noise Control and the United States Department of Housing and Urban Development (HUD). The DHS' model guidelines are shown in Figure 4.13.2-1 (California Department of Health Noise/Land Use Compatibility Standards).

  At the Federal level, the USEPA has not promulgated standards or regulations for environmental noise generated by electrical substations or transmission lines. The USEPA has, however, published a guideline that specifically addresses issues of community noise.[54] This guideline contain goals for noise levels affecting residential use of $L_{dn} \leq 55$ dBA for outdoors and $L_{dn} \leq 45$ dBA for indoors noise. The USEPA stresses that these recommendations contain a factor of safety, do not consider technical or economic feasibility issues, and should not be construed as standards or regulations.

  USEPA guidelines recommend an L_{dn} of 55 dB(a) to protect the public from the effect of broadband environmental noise in typically quiet outdoor and residential areas. This level is not a regulatory goal but is "intentionally conservative to protect the most sensitive portion of the American population" with "an additional margin of safety." For protection against hearing loss in the general population from non-impulsive noise, the USEPA guidelines recommend an Leq of 70 dB(A) or less over a 40-year period.[55]

4.14 Population and Housing

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations, and existing Etiwanda Generating Station and SDG&E's

[54]/ United States Environmental Protection Agency, EPA Levels Document, Report No. 556/9-74-664.
[55]/ United States Environmental Protection Agency, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, EPA-550/9-74-004, March 1974.

existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, population and housing are not further addressed herein.

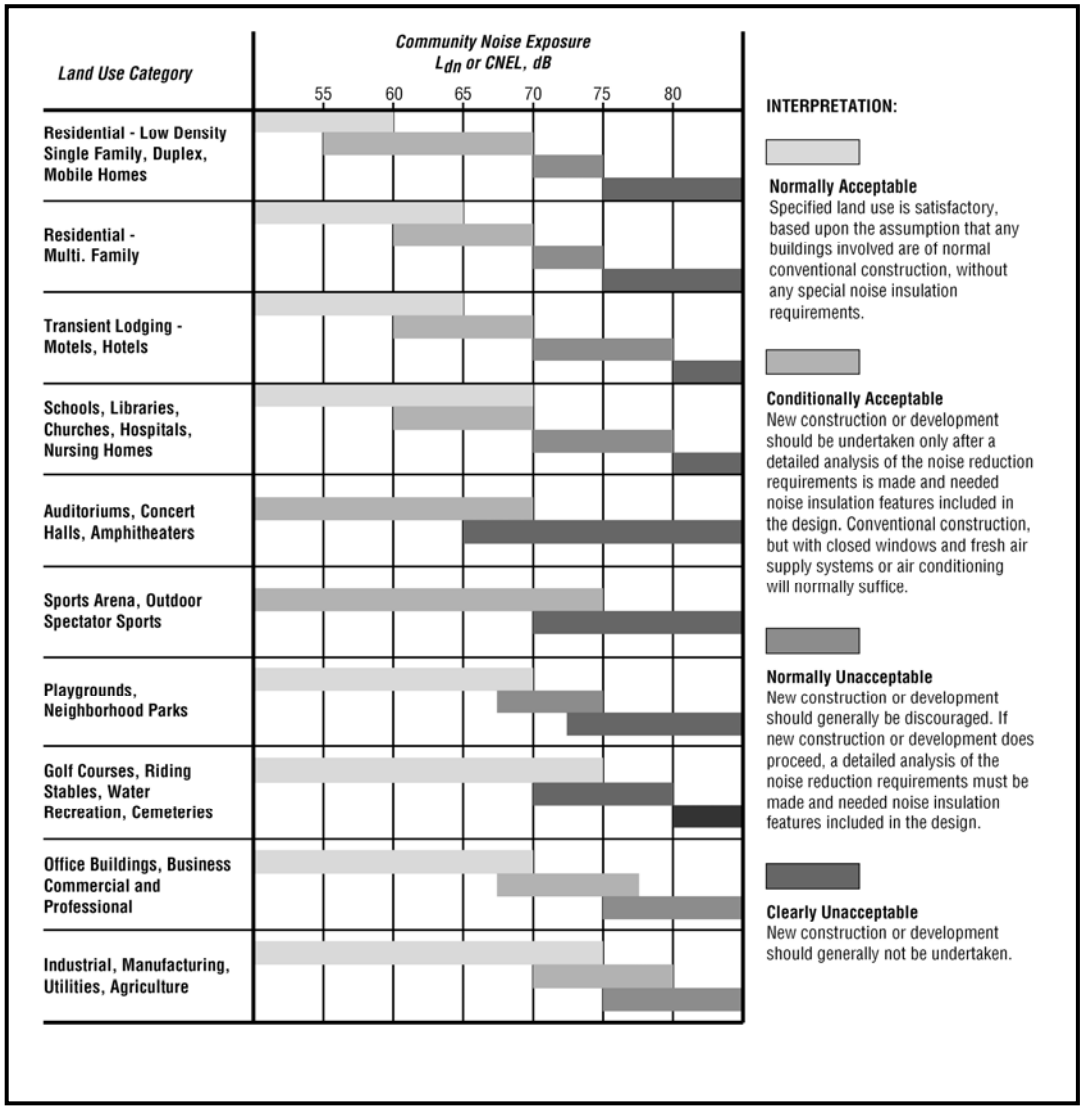

Figure 4.13.2-1. California Department of Health Noise/Land Use Compatibility Standards
Source: California Department of Health

Current economic conditions within California and the general Project area may alter historic trends and agency growth projections and forecasts. The baseline information presented herein does not consider the impacts of those existing conditions but is based on information obtained prior to the third quarter of 2008.

4.14.1 Population and Housing Environmental Setting

Riverside County is the fourth largest county in California. Riverside County occupies more than 7,300 square miles (4,612,740 acres) in southern California. The 2000 census reported the County population to be approximately 1.5 million residents, representing about 4.6 percent of

all State residents. Riverside County is one of the fastest growing counties in California, with most of the growth and associated development occurring in the western portion of the County.

As indicated in Table 4.14.1-1 (Population Growth [1990, 2000, and 2003]), Riverside County is growing faster than the State and the City is growing faster than the County. Rapid population growth and rapid job growth have occurred in tandem in California's Inland Empire, which includes the western portions of Riverside and San Bernardino Counties.

Table 4.14.1-1 Population Growth (1990, 2000, and 2003)

Year	State of California	Riverside County	City of Lake Elsinore	Lakeland Village	San Diego County
Population 1990	29,760,021	1,170,413	18,285	-	2,498,016
Population 2000	33,871,648	1,545,387	28,928	5,626	2,813,833
Population 2003 (Estimated)	35,484,453	1,782,650	34,914	-	2,930,886
1990-2000 Percentage Change	13.6	32.0	58.2	-	12.6
2000-2003 Percentage Change	4.8	15.4	20.7	-	4.2

Source: United States Census Bureau

San Diego County encompasses over 4,500 square miles (2,081,739 acres) and had a 2000 population of approximately 2.8 million, representing about 8.3 percent of all State residents. In contrast to the growth of the Riverside County and Lake Elsinore areas, San Diego County's growth rate has been slightly below that of the State.

Population growth in the five-county SCAG region accounted for 56 percent of the total increase in the State in 2003. As illustrated in Figure 4.14.1-1 (Top Ten Counties in Population Increase in 2003), the top four California counties in terms of population increase were in the SCAG region and included Los Angeles, Riverside, San Bernardino, and Orange Counties. Within the region, every county grew at a faster rate than the rest of the State. In particular, Riverside County achieved the highest growth rate and San Bernardino County was sixth in ranking. About 35 percent of the total population increase in the region occurred in the Inland Empire.[56]

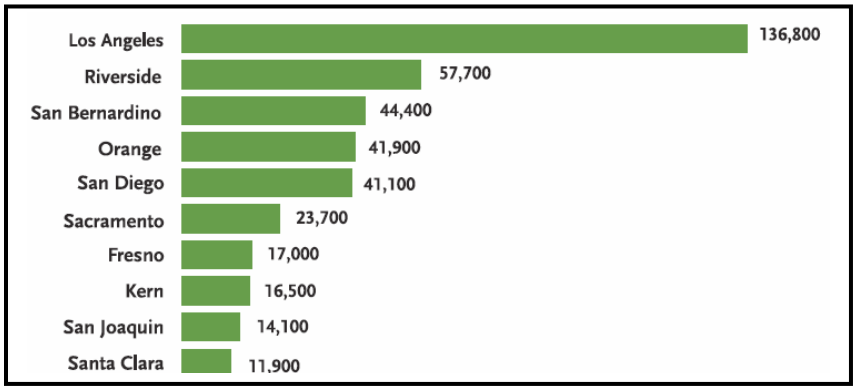

Figure 4.14.1-1. Top Ten Counties In Population Increase in 2003
Source: Southern California Association of Governments

[56]/ Southern California Association of Governments, The State of the Region 2004: Measuring Regional Progress, December 2004, p. 18.

SCAG's forecast population growth for the seven counties that comprise southern California. The forecast is for the Riverside County population to grow by 1,128,200 people between 2000 and 2020, representing a 66.6 percent increase in the County population over that period. Of the seven southern California counties, Riverside County would be the second fastest growing in terms of both percent growth and growth in absolute numbers.

The California Department of Finance (CDF) indicates that California's population exceeded 36.81 million persons on January 1, 2005. The State grew by about 1.5 percent during 2004, adding 539,267 residents. California now represents about 12.5 percent of the United States population. California's population is expected to grow to nearly 44 million by 2020 and nearly 55 million by 2050.

Two-thirds of the State's population currently lives south of Bakersfield. California is the most ethnically diverse state in country, with no majority ethnic group. The population is 46.8 percent White, 33.2 percent Hispanic, 11.1 percent Asian, 6.2 percent Black, 0.4 percent American Indian/Alaskan Native, and 0.7 percent Hawaiian/Pacific Islander.[57] The CDF estimates that the City of Lake Elsinore's 2004 population was 35,358 individuals. Between 1990 and 2000, the City's population increased 57.95 percent (from 18,316 to 28,930 persons). During that same period, the housing stock increased 35.94 percent (from 6,993 to 9,506 dwelling units).[58] The 2000 Census reports that there were 8,872 households in the City, with an average size of 3.29 persons. Of those, 7,021 households (79.1%) were family households and 1,394 households (15.7%) were individuals living alone. The balance of the City's households were comprised of non-family households with more than one occupant.[59]

Employment information for 2000 indicates that the City was comparable to the State in terms of the percent of persons 16 and older who are in the labor force, that is, employable. These percentages were 62.3 and 62.4 percent, respectively. As for those who are currently employed, 62 percent of those in the City were employed and 61.8 percent in the State were employed. In Riverside County as a whole, a smaller percentage of the population was in the labor force (58.2%) and a smaller percentage was employed (53.6%). California Employment Development Department (CEDD) data indicate that the March 2005 unemployment rates were 5.7 percent for the State, 5.0 percent for Riverside County, 4.7 percent for the City of Lake Elsinore, and 8.0 percent for Lakeland Village.

As indicated in Table 4.14.1-2 (Total Employment by Sector [1999 and 2000]), the State average for management, professional, and related occupations (36 percent) is higher than the County (27.8 percent) or City (21.9 percent). The City has a higher percentage of jobs in construction, extraction and maintenance occupations. Those employed in these industries do so at a rate that is 6.6 percent higher than the State average and 3.2 percent higher than the County average. As indicated in Table 4.14.1-3 (Employment Projections by Industry [2005-2025]), the number of construction jobs in western Riverside County is projected to continue to increase.[60]

[57]/ Governor's Office of Emergency Services, State of California Multi-Hazard Mitigation Plan, September 2004, p. 53.
[58]/ Op. Cit., Final Draft Municipal Service Review for the Western Riverside County Area, p. 4-5.
[59]/ Ibid., p. 4-7.
[60]/ Op. Cit., Workers Ahead: The Balance between Jobs and Housing in Western Riverside County, p. 16.

Table 4.14.1-2. Total Employment by Sector (1999 and 2000)

Employment Status	State of California		Riverside County		Lake Elsinore	
	Number	Percent	Number	Percent	Number	Percent
Population 16 years and older	25,598,144	100.0	1,124,807	100.0	19,701	100.0
In labor force	15,977,879	62.4	654,387	58.2	12,268	62.3
Civilian labor force	15,829,202	61.8	651,952	58.0	12,218	62.0
Employed	14,718,928	57.5	602,856	53.6	11,352	57.6
Unemployed	1,110,274	4.3	49,096	4.4	866	4.4
Armed forces	148,677	0.6	2,435	0.2	50	0.3
Occupation						
Management, professional, and related occupations	5,295,069	36.0	167,739	27.8	2,488	21.9
Service	2,173,874	14.8	105,466	17.5	1,806	15.9
Sales and office	3,939,383	26.8	163,095	27.1	3,300	29.1
Farming, fishing and forestry	196,695	1.3	9,499	1.6	67	0.6
Construction, mining, and maintenance	1,239,160	8.4	70,974	11.8	1,698	15.0
Production, transportation, moving	1,874,747	12.7	86,103	14.3	1,993	17.6
Industry						
Agriculture, forestry, fishing, and hunting, and mining	282,717	1.9	13,063	2.2	101	0.9
Construction	915,023	6.2	55,751	9.2	1,415	12.5
Manufacturing	1,930,141	13.1	72,837	12.1	1,899	16.7
Wholesale trade	596,309	4.1	21,400	3.5	493	4.3
Retail trade	1,641,243	11.2	76,466	12.7	1,657	14.6
Transportation, warehousing, and utilities	689,387	4.7	31,683	5.3	636	5.6
Information	577,463	3.9	13,956	2.3	244	2.1
Finance, insurance, real estate, and rental and leasing	1,016.916	6.9	34,348	5.7	469	4.1
Professional, scientific, management, administration and waste management services	1,711,625	11.6	51,577	8.6	836	7.4
Educational, health, and social services	2,723,928	18.5	113,407	18.8	1,574	13.9
Arts, entertainment, recreation, accommodations, food services	1,204,211	8.2	59,131	9.8	981	8.6
Other services, except public administration	761,154	5.2	30,166	5.0	721	6.4
Public administration	668,811	4.5	29,071	4.8	326	2.9

Source: United States Census Bureau

Lake Elsinore employs a higher percentage of individuals in the production, transportation and moving industries than the County and the State. Differences in local, County, and State-level jobs are evident in the distribution of jobs among industries, where the average percentage of workers employed Statewide is higher than in the City in industries such as finance, insurance, and real estate; professional, scientific, management, and administration; educational, health, and social services; and public administration. Workers in Lake Elsinore are, however, more likely than the Statewide average to be found in the construction, manufacturing, and retail trade sectors. Due to the rapid growth that is occurring in Lake Elsinore and much of Riverside County, the Countywide average of 9.2 percent of workers employed in the construction industry is almost 50 percent higher than the Statewide average of 6.2 percent. The Lake Elsinore value of 12.4 percent is double the Statewide average.

Table 4.14.1-3. Employment Projections By Industry (2005-2025)

Industry	2005	2010	2015	2020	2025
Agriculture	20,465	18,524	16,414	14,472	13,440
Mining	284	224	166	115	73
Construction	30,740	31,704	31,950	31,965	33,662
Manufacturing	45,105	44,170	42,548	40,887	41,367
Transportation and Public Utilities	10,312	10,853	11,121	11,285	12,041
Wholesale	18,933	21,893	24,123	25,918	28,925
Retail	88,427	96,435	103,374	112,736	121,104
Finance, Insurance, and Real Estate	16,966	19,524	21,423	22,941	25,586
Service	167,461	201,197	236,719	278,342	304,877
Government	55,691	57,684	58,392	58,658	61,890
Total	454,383	502,208	546,230	597,319	642,965

Source: Western Riverside Council of Governments

Census data for 1999 indicate that, at that time, household and per capita income in Lake Elsinore and Lakeland Village were lower than the State and County averages, while the percentage of the population below the poverty level was higher. The Public Policy Institute of California reports that during the past three decades, the economic well-being of California's regions, as measured by income, has become increasingly divergent. Between 1989 and 1999, inflation-adjusted per capita incomes grew in California and in all regions of the State, except the San Joaquin Valley and the Inland Empire (which includes Riverside County). The greatest decline in per capita incomes occurred in the Inland Empire during that period. Median household and per capita income figures for 1999 are present in Table 4.14.1-4 (1999 Median Income).

Table 4.14.1-4. 1999 Median Income

Median Income in 1999 (dollars)	State of California	Riverside County	City of Lake Elsinore	Lakeland Village
Households	$47,493	$42,887	$41,806	$34,136
Per capita	$22,711	$18,689	$15,408	$14,922
Individuals Below the Poverty Level	14.2	14.2	17.0	16.5

Source: California Department of Finance

Job growth in the Inland Empire has not kept pace with housing. Because of the relatively lower cost of housing and high single-family housing production, there has been a worsening of traffic congestion and longer commutes to jobs in Orange and Los Angeles Counties for residents of the Inland Empire. This has contributed to a jobs/housing imbalance.[61]

SCAG notes that between 1980 and 1996, while the number of households increased by 24 percent, vehicle miles traveled (VMT) increased by more than 82 percent. The fact that VMT is increasing at a greater rate than households suggests an increase in miles driven for employment. Commuters in the Inland Empire drive greater distances and spend more money per month commuting than other residents of the region.[62]

[61]/ Southern California Association of Governments, Housing in Southern California: A Decade in Review, January 2001, pp. 17-18.
[62]/ Ibid., pp. 14-15.

As shown in Table 4.14.1-5 (Growth Projections), SCAG's most recent growth projections indicate that the City's annual population growth between 2010 and 2030 is expected to be 1,440 persons (3.35 percent).[63]

Table 4.14.1-5. Growth Projections

Year	Population		Households		Employment	
	County	City	County	City	County	City
2010	2,085,432	42,940	685,775	12,703	727,711	11,231
2020	2,644,278	57,842	907,932	17,386	954,499	13,487
2030	3,143,468	71,737	1,127,780	22,008	1,188,976	15,835
Annual Growth Rate	2.54%	3.35%	3.22%	3.66%	3.17%	2.05%

Source: Southern California Association of Governments

As indicated in Table 4.14.1-6 (Elsinore Valley Municipal Water District Service Area - Population and Employment Forecasts),[64] within the EVMWD service area, the projected overall growth rate from 2005 to 2030 is projected to average 2.4 percent per annum. During that same period, employment is projected to increase 2.9 percent per annum. Similar growth projections have been formulated by the Riverside Local Agency Formation Commission which projects that population within the EVMWD's service area will increase from 106,351 individuals in 2005 to 172,346 individuals by 2025.[65]

Table 4.14.1-6. Elsinore Valley Municipal Water District Service Area Population And Employment Forecasts

Year	2005	2010	2015	2020	2025	2030
Population	100,153	115,034	133,333	150,870	166,806	181,940
Housing	16,099	19,858	23,091	26,369	29,649	32,972

Source: Southern California Association of Governments

4.14.2 Population and Housing Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's regulatory setting.

- Americans with Disabilities Act. Title III of the Americans with Disabilities Act of 1990 (42 U.S.C. 12181 et seq.) (ADA) authorizes the United States Department of Justice to certify that state laws, local building codes, or similar ordinances meet or exceed the ADA Standards for Accessible Design (28 CFR Part 36, Appendix A) (ADA Standards) for new construction and alterations. Title III applies to public accommodations and commercial facilities, including most private businesses and non-profit service providers. Section 4459(c) of the CGC indicates that the scope of accessibility regulations in the "California Building Standards Code" shall not be less than the application and scope of accessibility requirements of the ADA. The requirements outlined in Chapter 11B of the "California Building Standards Code" meet the new construction and alteration requirements of Title III of the ADA.

[63]/ Op. Cit., Final Draft Municipal Service Review for the Western Riverside County Area, p. 4-7.
[64]/ Elsinore Valley Municipal Water District (MWH), Urban Water Management Plan, Final Report, December 2005, pp. 3-3 and 3-4.
[65]/ Riverside Local Agency Formation Commission (Dudek and Associates, Inc.), Water and Wastewater Municipal Service Review Report: Western Riverside County and Coachella Valley – Final Report, February 2005, p. 2-8.

- California Government Code. As indicated in Section 65580 of the CGC: "The Legislature finds and declares as follows: (a) The availability of housing is of vital statewide importance, and the early attainment of decent housing and a suitable living environment for every California family is a priority of the highest order. (b) The early attainment of this goal requires the cooperative participation of government and the private sector in an effort to expand housing opportunities and accommodate the housing needs of Californians of all economic levels. (c) The provision of housing affordable to low- and moderate-income households requires the cooperation of all levels of government. (d) Local and state governments have a responsibility to use the powers vested in them to facilitate the improvement and development of housing to make adequate provisions for the housing needs of all economic segments of the community. (e) The Legislature recognizes that in carrying out this responsibility, each local government also has the responsibility to consider economic, environmental, and fiscal factors and community goals set forth in the general plan and to cooperate with other local governments and the state in addressing regional housing needs."

- California Public Resources Code. Referencing Section 21000(g) of CEQA, "it is the intent of the Legislature that all agencies of the State government which regulate activities of private individuals, corporations, and public agencies which are found to affect the quality of the environment, shall regulate such activities so that major consideration is given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian."

  As further indicated in Section 21001(d) of CEQA, the State Legislature finds and declares that it is the policy of the State to "[e]nsure that the long-term protection of the environment, consistent with the provisions of a decent home and suitable living environment for every Californian, shall be the guiding criterion in public decisions." Referencing Section 15021(d) of the State CEQA Guidelines, "CEQA recognizes that in determining whether and how a project should be approved, a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a decent home and satisfying living environment for every Californian."

4.15 Public Services[66]

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations, and existing Etiwanda Generating Station, and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, public services are not further addressed herein.

[66]/ For general information about fire hazard plan, stakeholders are referred to: (1) "Fire Hazard Planning – General Plan Technical Advisory Service" (The Governor's Office of Planning and Research, November 2003); (2) "Riverside Operational Area – Multi-Jurisdictional Local Hazard Mitigation Plan" (County of Riverside, October 5, 2004); (3) "Multi-Jurisdictional Hazard Mitigation Plan, San Diego County, CA" (County of San Diego, March 2004); and (4) "State of California Multi-Hazard Mitigation Plan" (Governor's Office of Emergency Service, September 2004).

As indicated in the State CEQA Guidelines, public services include fire protection, police protection, schools, parks, and other public facilities. Because the Project does not include either a housing or commercial component, police protection services and schools are not further addressed herein. Recreation is separately discussed in Section 4.16 (Recreation). The following discussion focuses primarily on fire protection and vector control.

4.15.1 Public Services Environmental Setting

Executive Order S-3-05, signed by Governor Arnold Schwarzenegger on June 1, 2005, called for the CalEPA to prepare biennial science reports on the potential impact of continued global warming on certain sectors of the California economy. CalEPA entrusted the CEC's Public Interest Energy Research (PIER) and its California Climate Change Center to lead this effort. As indicated in PEIR's 2006 report: "In California and throughout western North America, signs of a changing climate are evident. . .The latest projections, based on state-of-the-art climate models, indicated that if global heat-trapping emissions proceed at a medium to high rate, temperatures in California are expected to rise 4.7 to 10.5°F by the end of the century. In contrast, a lower emission rate would keep the projected warming to 3 to 5.6°F. . .However, if temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. Because wildfire risk is determined by a combination of factors including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throught the State. . .For example, if precipitation increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are expected to increase by approximately 30 percent toward the end of the century."[67]

With regards to projected climate changes in North America associated with global warming, in April 2007, the United Nation's IPCC reported: "Warming in western mountains is projected to decrease snowpack, more winter flooding, and reduced summer flows, exacerbating competition for over-allocated water resources. Disturbances from pests, diseases, and fire are projected to have increasing impacts on forest, with an extended period of high fire risk and large increases in area burned."[68]

With regards to electricity and wildfires, as indicated by the White House's Energy Project Streamlining Task Force, severe drought and fire conditions facing the western United States have increased the possibility that electrical power suppliers may have to de-energize certain electrical transmission lines due to fire threat. Service provided by these lines may have to be interrupted in order to protect the integrity of the transmission line and to protect the public and the environment. The task force recommends that the United States Departments of the Agriculture, Interior, and Energy: (1) notify permit holders of transmission line authorizations in areas of high, severe, and extreme fire conditions to immediately assess the threat of potential wildfire to their transmission lines; (2) jointly determine appropriate fire prevention and/or suppression actions; and (3) implement agreed upon fire prevention and suppression efforts on a priority basis. Fire prevention and suppression actions shall be included in each permit holders

[67]/ California Energy Commission, Our Changing Climate: Assessing the Risks to California – A Summary Report from the California Climate Change Center, Public Interest Energy Research, pp. 1 and 10-11.
[68]/ Op. Cit., Climate Change 2007: Climate Change Impacts, Adaptation and Vulnerability, Summary for Policymakers, Fourth Assessment Report, April 6, 2007.

"plans of development," "vegetation management plans, and/or "contingency plans" which are part of the transmission line authorization.[69]

Portions of the "Maps of the Fire Hazard Severity Zones in the State Responsibility Area" for Riverside and San Diego Counties are presented in Figure 4.15.1-1 (Fire Hazard Severity Zones - Local and State Responsibility Area). Presented in Figure 4.15.1-2 (Draft Fire Hazard Severity Zones [2006]), dated December 28, 2006, are draft revisions to Local Responsibility Areas (LRA) and State Responsibility Areas (SRA).[70] With regards to the Elsinore Plan Area, as illustrated in Figure 4.15.1-3 (Areas of Wildfire Susceptibility - Elsinore Area Plan), within Riverside County, a substantial portion of the Project area is within a high or very high wildfire hazard zone.

The National Interagency Fire Center reports "[b]elow normal precipitation has occurred since October 2006 except for the extreme northwestern corner of California. The entire lower third of the State has received less than 50% of normal precipitation since October 2006, with some areas on tract for record setting dryness. . .A severe January freeze caused significant dieback of native and non-native vegetation, especially in Ventura, Orange, and San Diego Counties. There is increasing concern about the potential for large fires in these freeze-killed areas."[71]

As indicated by the Panel of the National Academy of Public Administration to the United States Congress and the Departments of Agriculture and the Interior, "[t]he wildland-community interface is ever expanding. More and more people are moving to homes and communities that are in or near forests that present significant wildfire risks. It is not just the border of a city or suburban tract that is vulnerable, but also the municipal watersheds, the long-distance electric lines that transport vital power, and other scattered facilities and homes."[72]

Wildfires periodically burn large areas of chaparral and woodlands in southern California. These fires typically occur in conjunction with Santa Ana[73] weather events, which combine high winds and low humidity. Because conditions fostering large fall and winter wildfires in California are the result of large-scale patterns in atmospheric circulation, the same conditions can occur over a wide area at the same time.[74]

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[69]/ Letter from James L. Connaughton, Executive Office of the President, Council on Environmental Quality to Honorable Gale Norton, Secretary of the Interior, Honorable Ann M. Veneman, Secretary of Agriculture, and Hononable Spencer Abraham, Secretary of Energy, Re: Energy Project Streamlining Task Force Recommendation – Protecting Power Lines from Wildfires, July 26, 2002.

[70]/ A "State Responsibility Area" (SRA) means "lands that are classified by the Board of Forestry pursuant to Public Resources Code Section 4125 where the financial responsibility of preventing and suppressing forest fires is primarily the responsibility of the state." A "local agency very high fire hazard severity zones" means "an area designated by a local agency upon the recommendation of the CDF Director pursuant to Government Code Sections 51177(c), 51178 and 5118 that is not a state responsibility area where a local agency, city, county, city and county, or district is responsible for fire protection." A "Wildland-Urban Interface Fire Area" is a "geographic area identified by the State as a 'Fire Hazard Severity Zone' in accordance with the PRC Sections 4201 through 4204 and GGC Sections 51175 through 51189, or other areas designed by the enforcement agency to be at a significant risk from wildfires."

[71]/ National Interagency Fire Center, National Wildland Fire Outlook, Wildland Fire Outlook – May through August, 2007, Predictive Services Group, May 1, 2007.

[72]/ Panel of the National Academy of Public Administration to the United States Congress and the Departments of Agriculture and the Interior, Containing Wildland Fire Costs: Enhancing Hazard Mitigation Capacity, January 2004, Background Report, p. 36.

[73]/ The "Santa Ana" is the name given to foehn-like winds in California, which result when a cool, dry air mass flows downslope from high-elevation basins in the western North American interior toward lower atmospheric pressures off the Pacific coast. This flow is funneled toward passes in the southern California coastal ranges by the higher Sierra Nevada range in the west and the Rocky Mountains to the east. As the air sinks, it is compressed, warming it and reducing its relative humidity. Compression of this air mass through mountain passes often produces winds of 40-60 km/hour. These dry, sometimes hot winds reduce fuel moisture, thus enhancing the risk of fire, and accelerate the spread of flames once a fire is started.

[74]/ Westerling, Anthony L. and Cayan Daniel R., Climate, Santa Ana Winds and Autumn Wildfires in Southern California, EOS, transactions, American Geophysical Unit, Vol. 85, No. 31, August 3, 2004, p. 289.

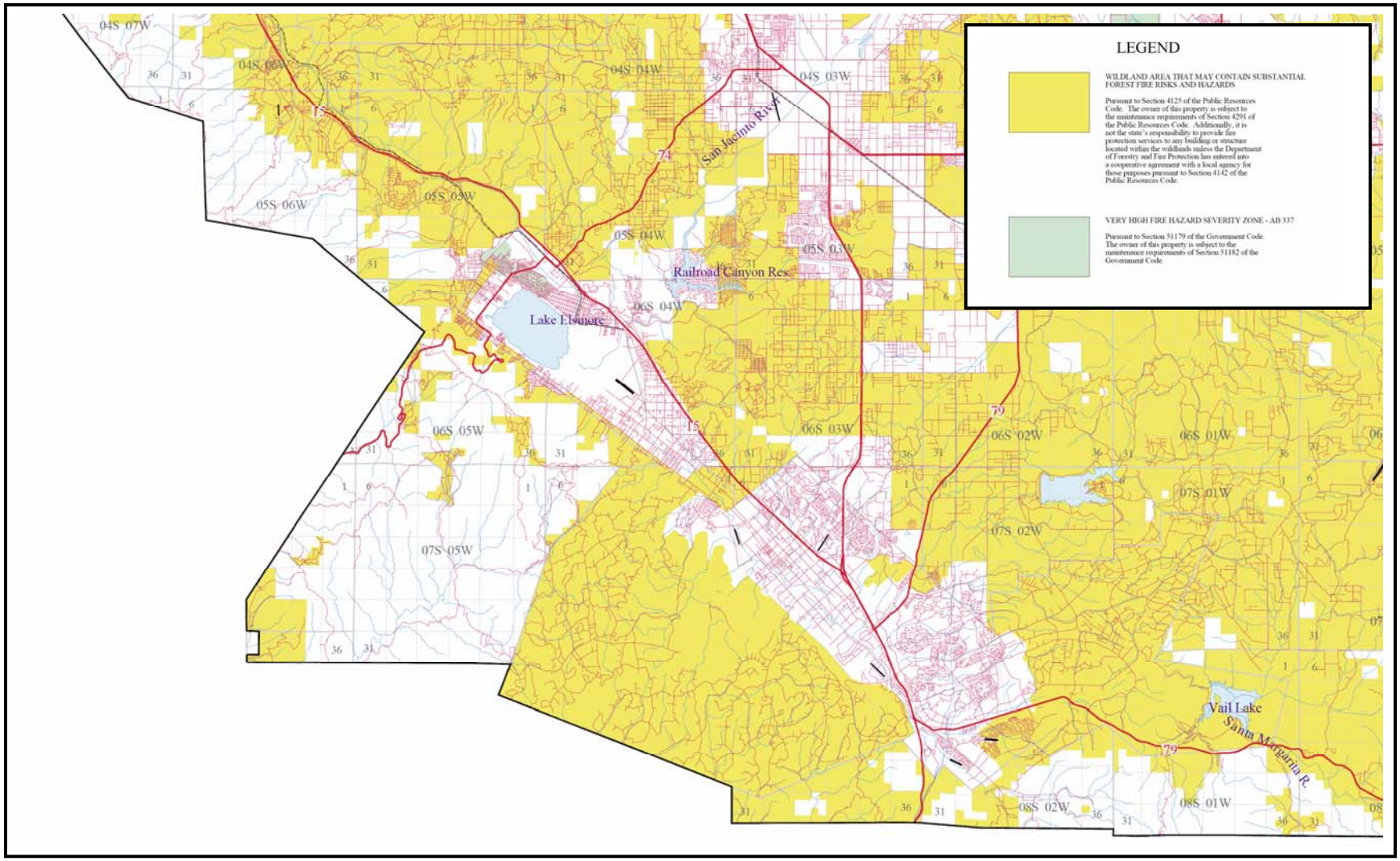


Figure 4.15.1-1. Fire Hazard Severity Zones Local and State Responsibility Areas (1 of 2)
Source: California Department of Forestry and Fire Protection

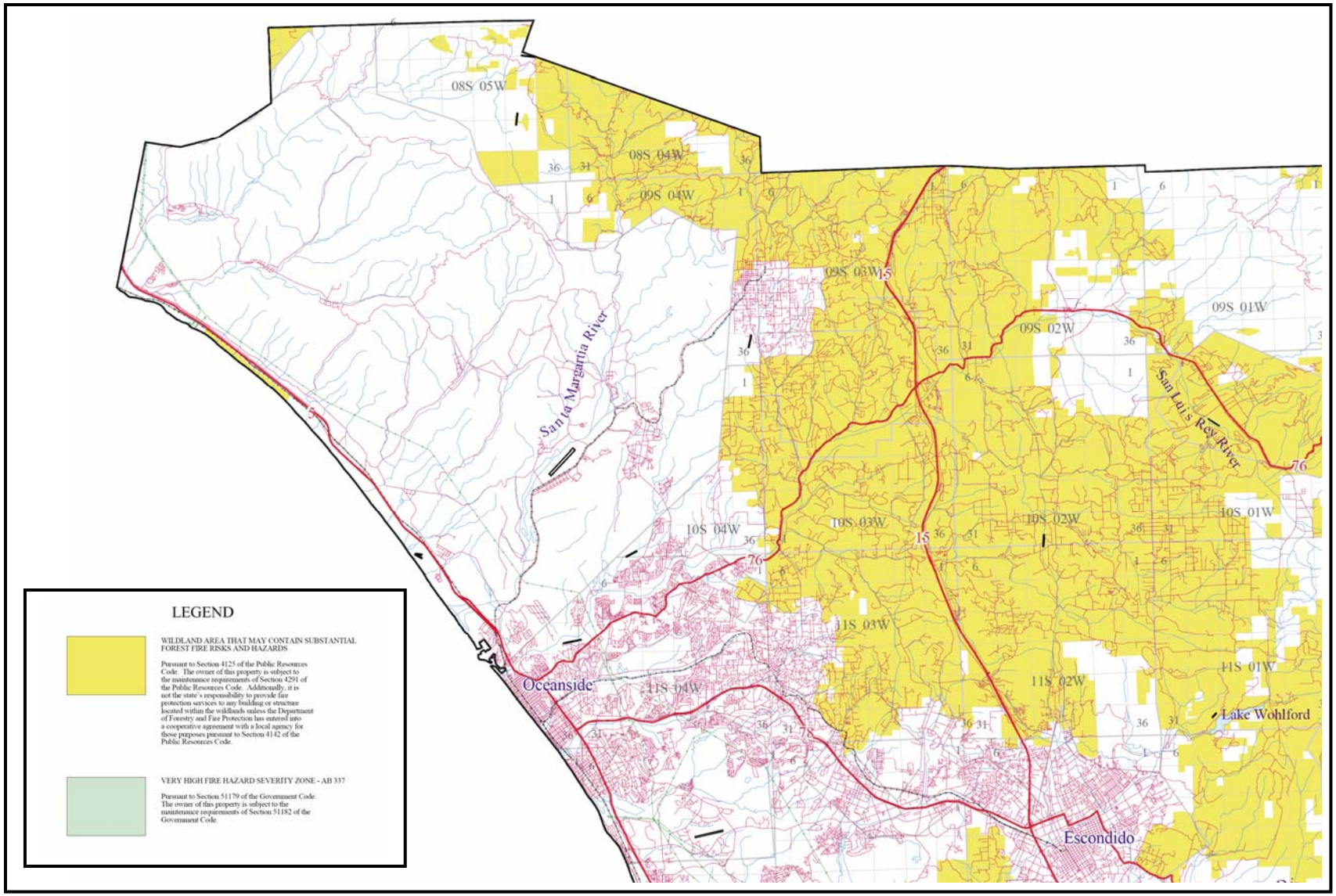
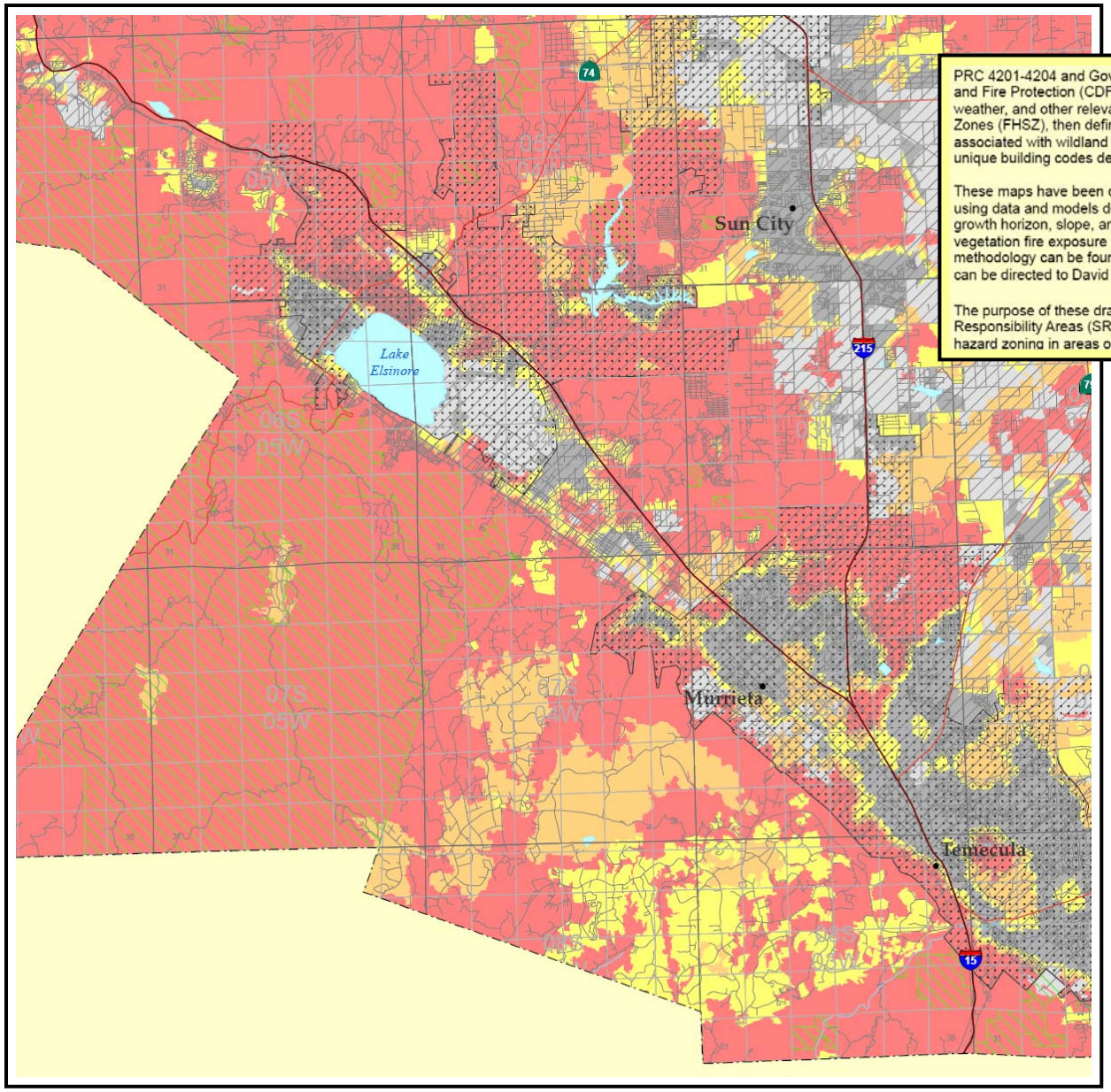


Figure 4.15.1-1. Fire Hazard Severity Zones Local and State Responsibility Areas (2 of 2)
Source: California Department of Forestry and Fire Protection



PRC 4201-4204 and Govt. Code 51175-89 direct the California Department of Forestry and Fire Protection (CDF) to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), then define the application of various mitigation strategies to reduce risk associated with wildland fires. Specifically, the zones determine the requirements for unique building codes designed to reduce the ignition potential of stuctures.

These maps have been created by CDF's Fire and Resource Assessment Program (FRAP) using data and models describing development patterns, potential fuels over a 30 year growth horizon, slope, and burn probabilities to quantify the likelihood and nature of vegetation fire exposure to new structures that may be built. Details on the modeling methodology can be found at http://frap.cdf.ca.gov/projects/hazard/methods.htm. Questions can be directed to David Sapsis, at 916.445.5369 dave.sapsis@fire.ca.gov.

The purpose of these draft maps is to facilitate model review for both FHSZ on CDF State Responsibility Areas (SRA) and for review of recommendations for inclusion in equivalent hazard zoning in areas of local fire jurisdiction (LRA).

FIRE HAZARD ZONES
- Moderate
- High
- Very High
- Non-wildland fuels (e.g. rock, agriculture, water)
- Urbanized/developed areas outside of hazard zones

FIRE PROTECTION RESPONSIBILITY
- Federal Responsibility Area (FRA)
- Local Responsibility Area (LRA)
- Incorporated Area

Figure 4.15.1-2. Draft Fire Hazard Severity Zones (1 of 2)
Source: California Department of Forestry and Fire Protection

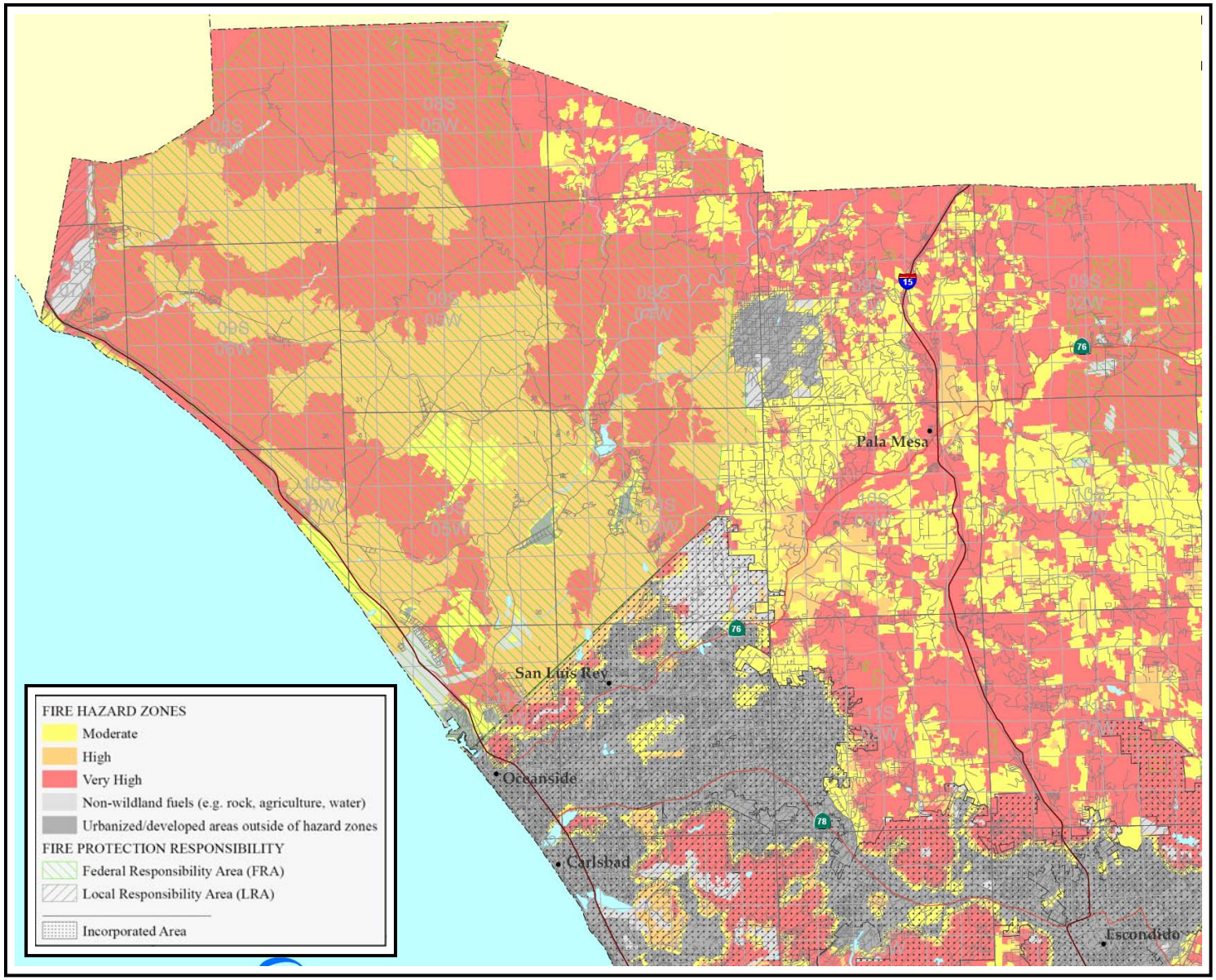


Figure 4.15.1-2. Draft Fire Hazard Severity Zones (2 of 2)
Source: California Department of Forestry and Fire Protection

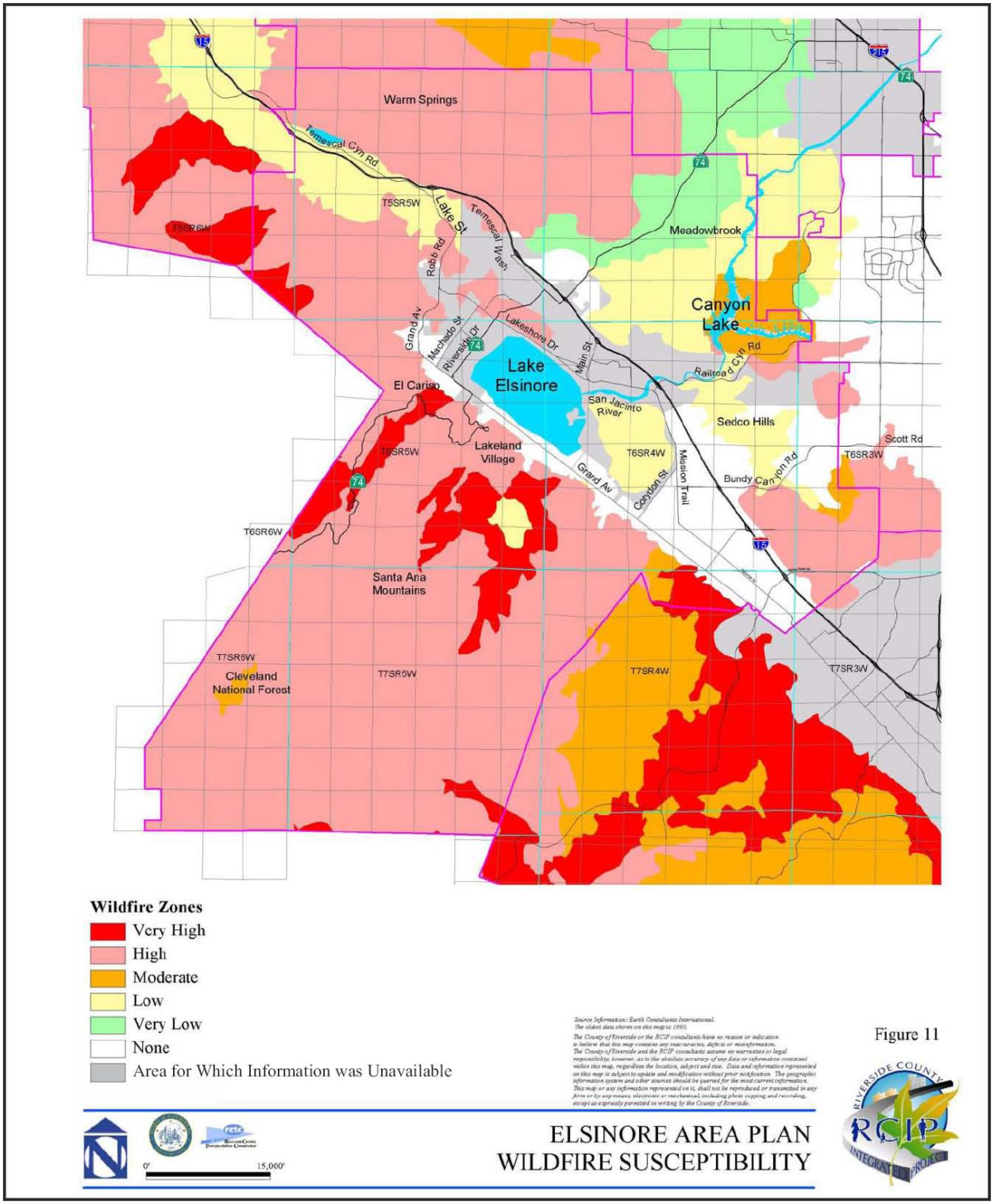


Figure 4.15.1-3. Areas of Wildfire Susceptibility Elsinore Area Plan
Source: County of Riverside

Figure 4.15.1-4. Northern San Diego County Fire History (1910-2006)
Source: California Department of Forestry and Fire Protection

The fire history of northern San Diego County presented in Figure 4.13.1-4 (Northern San Diego County Fire History [1910-2006])[1] demonstrates an extensive history of wildland fires.

Wildfires are both inevitable within the CNF and other wildland areas in southern California and a natural factor in any fire-adapted ecosystems. As indicated in the California Board of Forestry and Fire Protection's "The Changing California – The 2007 Policy Statement and Strategic Program of the Board of Forestry and Fire Protection": "Over millennia, fire has played an integral role in regulating the spatial pattern, composition, and structure of California's natural resources. With its Mediterranean climate, productive soils, and frequent ignitions from lightning and Native American peoples, fire has been an endemic force shaping the landscape of the State. Many area of the State have evolved under the natural selection pressure of frequent and relatively low intensity fires. . .While fire is often described as a destructive agent, the ecological role that fire plays on vegetation is often better characterized as fire-maintained or fire-recycled, rather than fire-destroyed. In areas where the regime indicates severe stand-replacing types of fires, often these fires served as forces of renewal for mature vegetation that required fire to restore vegetation life cycles."[2]

The State of California, acting through the CDF, funds wildland fire protection for State Responsibility Areas (SRAs). The CDF is the State's largest fire protection organization and, in combination with local and Federal agencies, is part of the Statewide mutual aid system. The CDF has a responsibility for the protection of historic resources during suppression of wildland fires if such protection can be done safely without delaying or hindering the emergency response operations.[3,4] A military/civilian interface agreement exists between the California National Guard (CNG) and the CDF. CDF has utilized CNG aircraft on past fires in San Diego County.

An agreement exists between the USMC and the Camp Pendleton Fire Department. The USMC provides helicopters with water dropping capability to Camp Pendleton during wildfire events.[5]

The "California Fire Plan" is the State's road map for reducing the risk of wildfire.[6] The plan noted: "CDF commands a force of approximately 3,800 full-time fire professions, foresters, and administrative employees; 1,400 seasonal personnel; 5,500 local government volunteer firefighters; 2,600 Volunteers in Prevention; and 3,800 inmates and wards. . .CDF operates 1,027

[1]/ United States Forest Service, Cleveland National Forest, Fire and Aviation, Fire Management Plan (http://www.fs.fed.us/r5/cleveland/fire/).

[2]/ California Board of Forestry and Fire Protection, The Changing California – The 2007 Policy Statement and Strategic Program of the Board of Forestry and Fire Protection, May 1, 2007, p. 37.

[3]/ California Department of Forestry and Fire Protection, California State Board of Forestry and Fire Protection, California State Office of Historic Preservation, and Information Centers of the California Historic Resources Information System, Memorandum of Understanding, revised August 29, 2006, p. 2.

[4]/ Under the provisions of Executive Order W-26-92, the CDF is responsible for the administration of cultural resources and historic properties under its control. Executive Order W-26-92, as signed by then Governor Pete Wilson in 1992, directs State agencies to administer the cultural and historic properties under their control in a spirit of stewardship and trustship for future generations; to initiate measures necessary to direct their policies, plans, and programs in such a way that State-owned sites, structures, and objects of historical, architectural, or archaeological significance are preserved, restored, and maintained for the inspiration and benefit of the people; to ensure that the protection of significant heritage resources are given full consideration in all land use and capital outlay decisions; and in consultation with the OHP, to institute procedures to ensure that State plans and programs contribute to the preservation and enhancement of significant non-State owned heritage resources (Source: Foster, Daniel G. and Betts, John, History of the California Department of Forestry and Fire Protection Archaeological Program: 1970-2004, CDF Archaeological Reports, Number 30, June 2004, pp. 38-39.

[5]/ Op. Cit., San Diego Regional Fire Prevention and Emergency Preparedness Task Force, p. 50.

[6]/ The Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection (BOF) and the CDF. The plan's five strategic objectives include: (1) to create willfire protection zones that reduce the risks to citizens and firefighters; (2) to assess all wildlands; (3) to identify and analyze key policy issues and develop recommendations for changes in public policy; (4) to have a strong fiscal policy focus and monitor the wildland fire protection system in fiscal terms; and (5) to translate the analysis into public policy (Source: State Board of Forestry and Fire Protection and California Department of Forestry and Fire Protection, California Fire Plan, March 1996, p. 1).

fire engines (338 State-funded engines and 689 local government funded engines), 103 rescue squads, 12 aerial trucks, 58 bulldozer units, 5 mobile communication centers; and 11 mobile kitchen units. . .In addition to its ground attach capability, CDF maintain a significant fleet of aircraft that includes seventeen 800-gallon air tankers, one 3,000-gallon and two 2,000-gallon contract air tankers, 13 air attack planes, and 10 helicopters."[7] Individual fire management plans document CDF's assessments of the fire situation within each of CDF's 21 units and six contract counties. The plans include strategic areas for pre-fire planning and fuel treatment. The fire management plans for the Riverside and San Diego units are briefly described below.

- Riverside Unit Pre-Fire Management Plan.[8] As illustrated in Figure 4.15.1-5 (Riverside Unit – Assets at Risk), the Riverside Unit pre-fire management plan identifies the following "assets at risk" by battalion.

  - ◊ Battalion 2 (Lake Elsinore). "The primary assets at risk in Battalion 2 are lives and residential structures. A secondary concern is the potential damage that could occur if a severe winter followed a large fie in the Trabuco area of the Ortega Mountains. This area has suffered two major fires in recent history, the 1988 Ortega Fire burned 16,000 acres from Orange County into the Lake Elsinore area, and the Decker Canyon Fire on August 8, 1959 which claimed the lives of five fire fighters. The area is also under coastal influences, combined with Lake Elsinore, which create 'sundowner' winds, significant down canyon winds in the afternoon."

  - ◊ Battalion 15 (Temecula). "Major assets at risk in the Temecula area include the DeLuz area inter-mixed with very high dollar housing and the Santa Margarita River drainage, which runs from Temecula to the Pacific Ocean. . .Another area is the Pala/Temecula Grade, where there is a very heavy brush load, and an active real estate market has generated large, high dollar homes in the area. Additionally, a community of homeless has set up a decent size encampment at the mouth of the Margarita drainage. The potential is here as everywhere in the county for a large high dollar fire. If there were a start in the Santa Margarita drainage or the Pala/Temecula Grade, it would be difficult to achieve an initial attack success, due to fuels, topography, and accessibility."

  Wildland fuels (vegetation) are a key component of fire behavior. The various fuels found in California have specific characteristics, allowing fire behavior analysts to categorize them based on how they burn. Vegetative wildfire fuels within the western portion of the Riverside Unit are shown in Figure 4.15.1-6 (Riverside Unit – Fuel Types).

  The Battalion 2 (Lake Elsinore) area consists of light brush and heavy grass throughout the area. Due to the frequent fire history of the area, these areas are maintaining the light brush and heavy grasses. In the TRD, the "Ortega front country" consists primarily of medium to heavy brush, which is one of the more volatile area of the Riverside Unit. Current CDF projects in the Riverside Unit include the El Cariso and Decker Canyon fuelbreaks (improvement of a fuelbreak in the El Cariso/Decker Canyon area located

[7]/ Ibid., p. 46.
[8]/ California Department of Forestry and Fire Protection, Riverside Unit Fire Management Plan, 2005, p. 35.

along Ortega Highway). The location of these communities puts them at "extreme risk" from wildfires burning under coastal or Santa Ana wind conditions in predominately chaparral fuels. This fuelbreak project has reduced the fire hazard by modifying the fire environment and giving fire protection agencies points of access to initiate defensive and offensive control strategies around the community.

- San Diego Unit Pre-Fire Management Plan.[9] As indicated in San Diego unit pre-fire management plan, "all communities within San Diego County area potentially at risk of wildland fires." The San Diego Unit fire history map shows that the County has had a significant history of major fire incidents. Almost every community within the unit has been threatened by wildfires.

  Readily available fuels, influenced by topography and Santa Ana winds year round will always present suppression problems in the unit. The San Diego Unit is comprise of 18 CDF fire stations (26 CDF fire engines), seven local government stations (11 fire engines), four CDF/Californa Department of Corrections (CDC) conservation camps (19 handcrews), one CDF/USDA Forest Service air attack base (1 CDF OV-10 air attack aircraft, 2 CDF S-2T air tankers, 1 USDA Forest Service Type 2 helicopter), four CDF bulldozers, and one CDF/USDA Forest Service Interagency Commend Center (Monte Vista Headquarters).

Additional baseline information concerning public services within the City of Lake Elsinore, County of Riverside, and County of San Diego is presented below.

- **City of Lake Elsinore**. The City of Lake Elsinore contracts for fire and paramedic services from the Riverside County Fire Department (RCFD). The RCFD's Southwest Division serves the southwestern portion of the County, extending from the San Diego County line on the south, to the southern edge of the City of Moreno Valley on the north, and to the western portion of the Hemet Valley on the east. This division, which includes the Cities of Lake Elsinore, Perris, Canyon Lake and Temecula, has four battalions containing 19 permanently staffed fire stations and two all-volunteer stations.

- **County of Riverside**. Within Riverside County, the Project is located, in part, within the service area of the Riverside County Fire Deparment - Southwest Division. The Southwest Division encompasses the southwestern portion of the County from the San Diego County line on the south, on the north to the southern edge of the City of Moreno Valley, and east to the western portion of the Hemet Valley. This division consists of four battalions containing 19-permanently staffed and 2-volunteer stations.

  All County fire stations are part of the Integrated Fire Protection System, under contract with the State, and may have a mix of State, County, contract city, or volunteer staffed equipment. As indicated in Table 4.15.1-1 (Western Riverside County Fire Department Battalion 2 Fire Stations and Equipment Serving the City of Lake Elsinore), fire personnel and equipment that currently serve the City consist of two engines and one rescue squad staffed with three firefighters for 24 hours per day, seven days per week.

[9]/ California Department of Forestry and Fire Protection, San Diego Unit Pre-Fire Management Plan, 2005.

Table 4.15.1-1 Western Riverside County Fire Department
Battalion 2 Fire Stations and Equipment Serving the City of Lake Elsinore

Station	Equipment	Personnel
Station 10 (Elsinore) 410 W. Graham Avenue Lake Elsinore 92530	2 triple combination engines 1 rescue squad	2 fire captains, 1 fire captain paramedic, 9 fire apparatus engineers, 12 firefighter II, 12 firefighter II paramedics, and 30 active volunteers
Station 85 (McVicker Park) 29405 Grand Avenue Lake Elsinore 92530	1 triple combination engine	
Station 11 (Lakeland Village) 33020 Maiden Lane Lake Elsinore 92530	-	-
Station 51 (El Cariso) Ortega Highway Lake Elsinore 92530	-	-
Station 61 (Wildomar) 32637 Gruwell Street Wildomar 92595	-	-
Station 62 (Volunteer) Verdugo Road P.O. Box 1062 San Juan Capistrano 92693	-	-
Station 74 (Volunteer) Rancho Capistrano 35420 Calle Grande Lake Elsinore 92530	-	-
Station 94 (Canyon Hills) 22770 Railroad Canyon Road Lake Elsinore 92532	-	-

Source: Riverside County Fire Department

All calls for service are dispatched by the same County Fire 9-1-1 Center. In addition to emergency and fire services, the City receives services, such as administration, personnel, finance, dispatch, fire prevention, hazardous materials, training, emergency services, and arson investigation from the Riverside County Fire Department. Other County fire stations serving western Riverside County which are located in close proximity to the Project include the Sycamore Creek Fire Station No. 64 (25310 Campbell Ranch Road, Corona), located in the Sycamore Creek area within an approximately one-mile distance from the proposed Lake Switchyard. The RCFD service standard is 1.0 full-time fire personnel per 1,000 population, with a response time of five minutes for urban areas and six minutes for rural areas. Approximately 75 percent of the City of Lake Elsinore meets the criteria for an urban response.[10]

The "Elsinore Area Plan" noted: "The plan area contains a number of unique features and communities that are subjected to a high risk of fire hazards, including the Cleveland National Forest, Cleveland Ridge, Warm Springs and Meadowbrook. Methods to address this hazard include techniques such as avoidance of building in high-risk areas, creating setbacks that buffer development from hazard areas, maintaining brush clearance to reduce potential fuel, establishing low fuel landscaping, and utilizing fire-resistant building techniques. In still other cases, safety oriented organizations such as Fire Safe can provide assistance in educating the public and promoting practices that contribute to improved public safety."

[10]/ Op. Cit., Final Draft Municipal Service Review for the Western Riverside County Area, pp. 4-10 and 11.

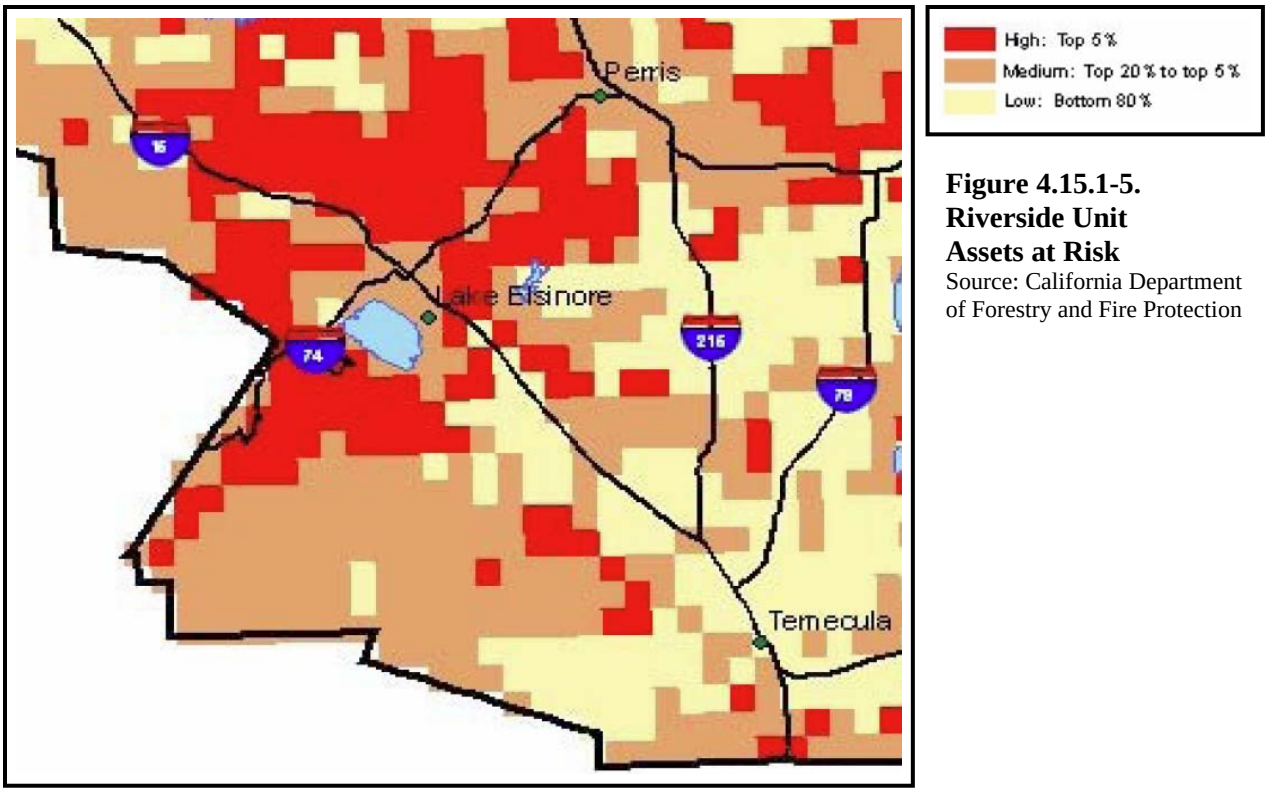


Figure 4.15.1-5.
Riverside Unit
Assets at Risk
Source: California Department of Forestry and Fire Protection

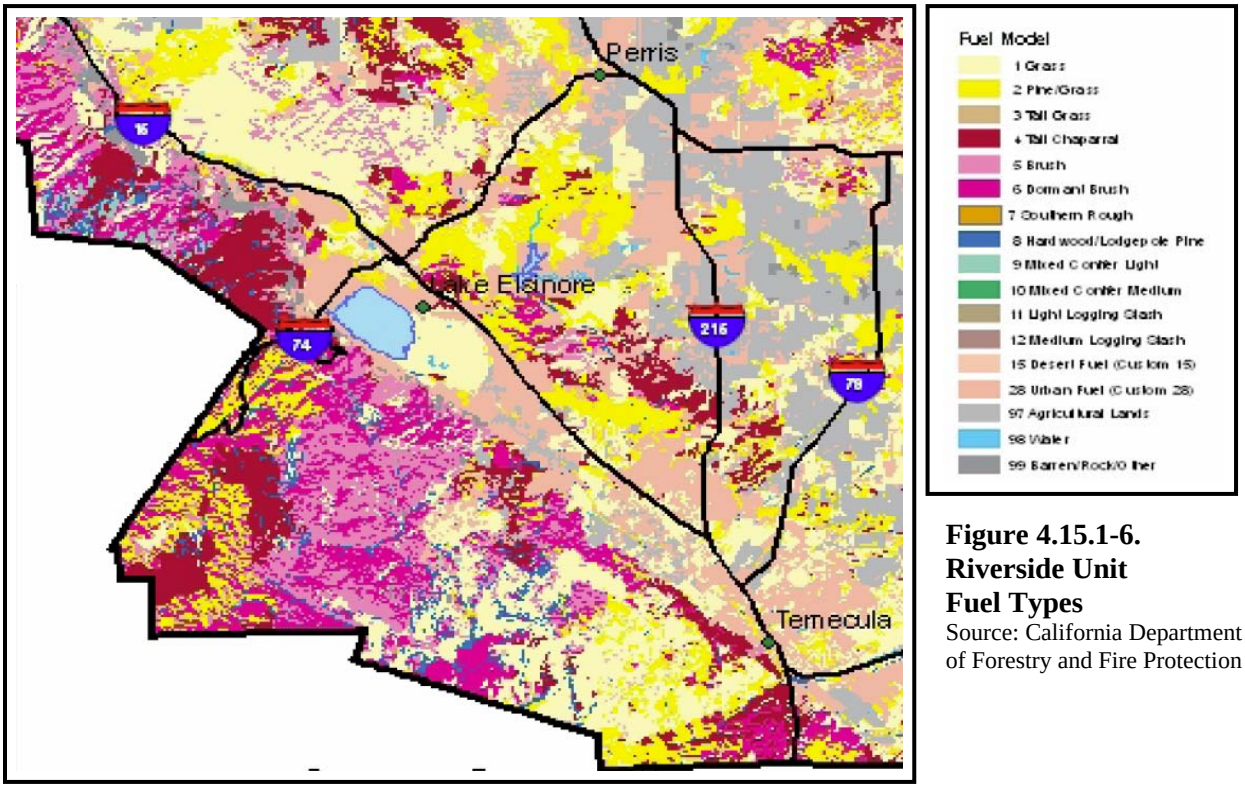


Figure 4.15.1-6.
Riverside Unit
Fuel Types
Source: California Department of Forestry and Fire Protection

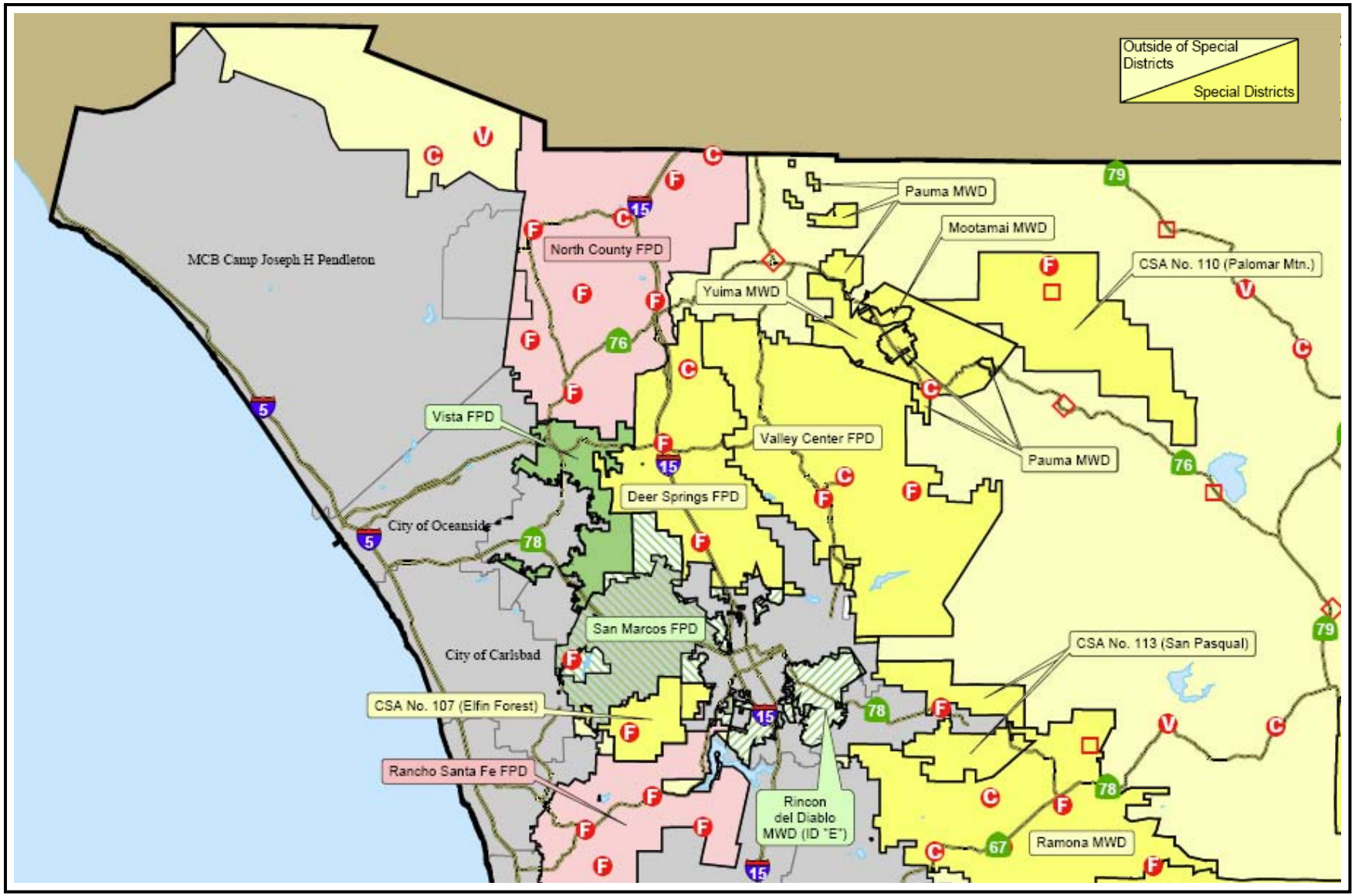


Figure 4.15.1-7. County of San Diego Fire Protection Districts
Source: San Diego Local Agency Formation Commissions

As determined by the Riverside County Board of Supervisors, based on an assessment of the programmatic environmental impacts associated with the implementation of the Riverside County General Plan and the development activities authorized therein, with regards to public service impacts, all environmental effects can be mitigated to a less-than-significant level.[11]

Within Orange and Riverside Counties, that portion of SR-74 (Ortega Highway) located between the Cities of Lake Elsinore and San Juan Capistrano has been designated the "California Wildland Firefighters Memorial Highway."

In Riverside County, a number of agencies provide vector-control services and vector-borne disease surveillance. The Northwest Mosquito and Vector Control District provides services to the northwest portion of the County, including the Cities of Corona, Norco, Lake Elsinore, and part of Riverside. As indicated by the County of Riverside Community Health Agency, in 2006, the Riverside County vector-control program responded to 512 calls, 57 percent of which involved mosquito-related issues, with the majority received from April through October. Mosquito problems are mitigated by larvaciding and adulticing procedures.[12]

- **County of San Diego**. San Diego is the largest urban county in California without a county fire department. For many years, the County of San Diego did provide fire protection to its residents as a discretionary service. The County discontinued fire protection in the mid 1970's, which required locally run fire organizations to be responsible for fire protection and emergency medical services in mutual aid with each other. The CDF provides service to SRAs and contracts with several communities in the unincorporated area of the County for fire protection.[13]

  The San Diego County Office of Disaster Preparedness lists 53 agencies that provide fire protection services in San Diego County. Excluding fire departments on military reservations, those agencies include 17 municipal, 10 volunteer (Campo, DeLuz, Elfin Forest-Harmony Grove, Intermountain, Mount Laguna, Ocotillo Wells, Palomar Mountain, Ranchita/Montezuma Valley, San Pasquel, Shelter Valley, Sunshine Summit), and four tribal (Campo, Pala, Sycuan, North County) fire departments., two fire and rescue dispatch, the CDF, and the USDA Forest Service. As illustrated in Figure 4.15.1-7 (County of San Diego – Fire Protection Districts),[14] unincorporated San Diego County is divided into fire protection districts. Currently, 17 cities, 28 special districts, and a number of volunteer agencies fund structural fire protection services.[15] Each fire protection agency is a signatory to the State Mutual Aid Agreement and participate in individual automatic aid agreements with surrounding agencies.

[11]/ Op. Cit., CEQA Findings of Fact and Statement of Overriding Considerations of the Board of Supervisors of Riverside County for the 2003 Riverside County General Plan, Findings of Fact for Riverside General Plan Impacts and Mitigation Measures, Environmental Impacts 4.15.1 through 4.15.7.

[12]/ County of Riverside Community Health Agency, Vector-Control Program – Year End Report, Department of Health Services, 2006, p. 4.

[13]/ San Diego County Sheriff's Department and San Diego County Fire-Rescue Department, San Diego Regional Fire Prevention and Emergency Preparedness Task Force, October 7, 2004, pp. 34 and 38.

[14]/ San Diego Local Agency Formation Commission, Micro Report – Reorganization of Structural Fire Protection and Emergency Medical Services in Unincorporated San Diego County, January 31, 2007, Figure 1.

[15]/ San Diego Local Agency Formation Commission, Funding Fire Protection – An Overview of Funding Issues Facing Fire Protection Districts, 1999, updated November 2003, p. 3.

Fire protection district fire stations located in general proximity to Project facilities are listed in Table 4.15.1-2 (Northern San Diego County Fire Protection Districts' Fire Stations and Equipment). In addition, the Escondido Fire Department provides fire protection and emergency medical services to the City of Escondido and, through a contractual arrangement established in 1984, the Rincon Del Diablo Fire Protection District. The Camp Pendleton Fire Department provides fire protection services within the area of Camp Pendleton.

Table 4.15.1-2. Northern San Diego County Fire Protection Districts' Fire Stations and Equipment

Station	Equipment	Personnel
North County Fire District		
Station 1 315 East Ivy Street Fallbrook 92028	Engine 1111 Brush 1161 Medic Ambulance 1191 Heavy Rescue 1190	1 Captain 1 Engineer 2 Firefighters/Paramedics 1 Reserve Firefighter
Station 2 2180 Winterwarm Fallbrook 92028	Engine 1112 OES 191	1 Captain 1 Engineer 1 Firefighter/Paramedic
Station 3 4157 Olive Hill Road Fallbrook 92028	Engine 1113 Medic Ambulance 1193	1 Engineer 1 Firefighter/Paramedic
Station 4 4375 Pala Mesa Drive Fallbrook 92028	Medic Engine 1114 Brush 1164 Medic Ambulance 1194	1 Captain 1 Engineer 2 Firefighters/Paramedics 1 Reserve Firefighter
Station 5 31403 Old River Road Fallbrook	Engine 1115 Brush 1165	1 Captain 1 Engineer 1 Firefighter/Paramedic
Station 6 2309 Rainbow Valley Blvd. Rainbow	Engine 1511 Quick Attack 1561 Rescue 1581 Water Tender 1560	33 Volunteers
Pala Reservation		
Pala Reservation Fire Dept. P.O. Box 15 Pala 92059	-	-
California Department of Forestry and Fire Protection		
De Luz Station 39431 De Luz Road Fallbrook 92028	-	-
Rincon Station 16971 Highway 76 Pauma Valley 92061	-	-
San Marcos Station 236 Pico Avenue San Marco 92069	-	-
Valley Center Station 1 28741 Cole Grade Road Valley Center 92082	-	-
Valley Center Station 72 28234 Lilac Road Valley Center 92082	-	-
Valley Center Station 73 28205 N. Lake Wohlford Road Valley Center 92082	-	-

Source: North San Diego County Fire Protection District

The Unified San Diego County Emergency Service Organization is a joint-powers authority (JPA) comprising the County of San Diego and each of the incorporated cities within the County.[16] The organization, acting through its governing board, the Unified Disaster Council (UDC) coordinates and facilitates regional emergency plans and programs. UDC membership does not include special districts and the UDC does not have policy, funding, or operational accountability for the unincorporated region's numerous fire protection organizations.

As determined by San Diego LAFCO: (1) "Within approximately 60 percent of the unincorporated region, public infrastructure is generally inadequate to facilitate effective structural fire protection and emergency medical services"; (2) "Within the unincorporated region, topography, lack of public roads and highways, a prevalence of private roads that do not connect or permit through access, plus large intervals between fire protection and emergency medical facilities, prevent personnel from responding within industry standards [eight minutes] for protecting life and property to approximately 60 percent of the unincorporated region"; and (3) "There is no long-term comprehensive strategy within the unincorporated region to improve or add to infrastructure for fire protection and emergency medical services."[17]

As jointly reported by the Los Angeles Times and North County Times, at a field hearing before the House Committee on Oversight and Government Reform, as conducted in Fallbrook on December 10, 2007, City of San Diego Fire-Rescue Department Chief Tracy Jarman testified that "the County of San Diego has and still lacks the firefighting resources necessary to protect its residents and visitors during significant firestorms."[18]

In San Diego County, the vector-control program is administered by the County of San Diego Department of Health Services. Aerial applications are used to control mosquito breeding in inaccessible locations next to urban interface areas.[19]

Additional baseline information concerning fire ecoloy, helicopter firefighting, other fire-related considerations, and vector control is presented below.

- **Fire Ecology**. The presence of fire in the landscape has been one of the major evolutionary factors determining the composition of flora throughout the State and around the world. Natural causes of fire range from lightning, sparks from falling rocks, volcanic activity, and the spontaneous combustion of plant materials and other organic matter. Of these, lightning is the most influential factor in almost all regions of the world as lightning strikes the earth an average of 100 times a second totaling over 3 billion strikes a year.

[16]/ Ibid., p. 17; San Diego Local Agency Formation Commission, Fire Protection and Emergency Medical Services Review, Section One – Unincorporated San Diego, 2005, p. 33.
[17]/ Ibid., Fire Protection and Emergency Medical Services Review, Section One – Unincorporated San Diego, pp. 1-3.
[18]/ Sifuentes, Edward, Sparks Fly Over County Fire Resources, North County Times Newspaper, December 12, 2007; Perry, Tony, Fire Chief Warns of Shortages, Los Angles Times Newspaper, Orange County Edition, December 11, 2007, pp. B-1 and B-9.
[19]/ County of San Diego Department of Environmental Health, Annual Report – Calendar Year 2005, Vector Control Program, May 2006, p. 12.

Man has also played a role in the pattern of fires in the landscape, dating back possibly as far as 30,000 years ago with the arrival of the first Americans. Early Spanish explorers and missionaries documented the use of fire by Native Americans who used fire to clear areas for the germination of oaks, for the production of acorns, and to create and maintain grasslands for hunting. Many Native American stories speak of the use of fire, and these stories indicate that wildfire was also a concern of Native Americans and that fire was used in a careful and respectful manner. Latter, European settlers used fire to clear brush so land could be used for agricultural purposes.

Three main classes of wildfire exist depending upon location in the fuel matrix and intensity. These are surface, crown, and ground fires. Surface fires are typically low intensity, rapid fires that seldom reach high temperatures. These fires consume light fuels and present little danger to basal portions, root stocks, and tubers, in the soil. Crown fires occur in the upper sections of trees and are typically the result of a surface fire. During such fires, surface materials and trees alike are ablaze. Ignited branches and embers fall to earth further spreading the fire. Ground fires are typically very intense blazes that remove vegetation and organic matter down to bare earth. The heat and intensity of such fires can destroy roots, tubers, and rhizomes, located beneath the soil surface, and may devastate entire plant communities.

Various plant species depend upon fire to reproduce and others have adapted to survive in the presence of fire. In the case of coast live oaks, stump sprouting (generation of new stems and growth from brunt trunks and branches) occurs after a blaze. The vegetation of chaparral communities has evolved to a point it requires fire to spawn regeneration.

Chaparral habitat covers only about 8.5 percent of California, and only ranges in elevation from near sea level to over 5,000-feet above msl in southern California, and up to 3,000-feet above msl in northern California. Yet, it is considered by many to be the most characteristic vegetative community of the State. This is especially true in southern California. Chaparral communities experience long dry summers, and receive most of their annual precipitation, 10-32 inches per year, from winter rains. Although chaparral is commonly referred to as one community there are two distinct types (hard and soft), more commonly referred to as chaparral and coastal sage scrub, respectively.[20]

As reported by the USDA Forest Service: "In California chaparral, fire intervals for large fires (more than 5,000 acres) typically ranged from 20 to 40 years. But at higher elevations and north aspects fire return intervals were longer, perhaps as infrequently as 50 to 100 years. Young stands of chaparral whose canopy has not closed and stands that have not restocked well after disturbance often have a grass component that can burn on any given year, as is the case with the grasslands. These fires may or may not be stand-replacement fires, depending upon the amount of heat transferred from the grass component to the sparse shrub overstory. Fully developed chaparral stands can be difficult to ignite unless there is some component of dead material and good fuel

[20]/ Ainsworth, Jack and Dos, Troy Alan, Natural History of Fire and Flood Cycles, Post-Fire Hazard Assessment Planning and Mitigation Workshop, University of California, Santa Barbara, August 18, 1995 (http://www.coastal.ca.gov/fire/ucsbfire.html).

continuity. However, given an ignition and some wind, they will propagate a moving fire even when virtually no dead materials exists in them."[21]

It is commonly believed that fire has been an important component of chaparral communities for at least 2 million years; however, the true nature of the "fire cycle" has been subject to interpretation. In a period of 750 years, it generally thought that fire occurs once every 65 years in coastal drainages, and once every 30 to 35 years inland. Many wildland blazes of the interior mountains of California are the cause of lightning; however, in the coastal ranges of the State, where coastal sage scrub is a dominant community, the "Catalina eddy" and marine influence create conditions where summer lightning rarely occurs. Despite the marine influence associated with the coastal range, lightning, or other nature causes, may still have played a major role in the creation of early to mid summer fires. With the advent of fire suppression, fires in this region now occur predominately between late fall and early winter, coinciding with the Santa Ana winds. These fires differ in intensity from the interior summer blazes as Santa Ana conditions result in lower than normal humidity levels and produce high wind speeds which further intensify a wildfire to a point where it produces its own weather conditions creating what is commonly referred to as "firestorm." These fires are often too intense to control until fuels are either consumed, weather conditions change, or the fire reaches the sea.[22]

All chaparral species have the ability to regenerate rapidly after fire though seed germination or resprouting. Fire usually kills seeds on the soil surface; however, buried seeds remain insulated from extremely high temperatures, provided that the soil is relatively dry. Some seeds, such ass ceanothus and fire-following herbs, only germinate after fire. Chaparral species that are obligate seeders after fire are resilient to fire-free intervals of 100 years or more.[23]

- **Helicopter Firefighting**. With regards to the 2003 southern California wildfires, the Panel of the National Academy of Public Administration to the United States Congress and the Departments of Agriculture and the Interior noted: "These fires began with three powerful, wind-driven wildfires on October 24th. The most noted one at that time was in the foothills of the San Bernardino National Forest 50 miles east of Los Angeles. It required evacuation of several thousand people. Over the next eleven days, nine serious wildfires burned in six counties of southern California stretching 180 miles from the Mexican border to north of Los Angeles; 22 people died, well over 3,500 structures were lost, and 800,000 acres burned. Governor Gray Davis declared these fires to be the most devastating in the state's history. Tens of thousands of people were evacuated. The Cedar Fire in San Diego was the largest of the individual fires and also the largest in the state's history.

[21]/ United States Department of Agriculture, Forest Service, Wildland Fire in Ecosystems, General Technical Report RMRS-GTR-42, Volume 2, Rocky Mountain Research Station, December 2000, p. 145.
[22]/ Op. Cit., Natural History of Fire and Flood Cycles, Post-Fire Hazard Assessment Planning and Mitigation Workshop.
[23]/ Winter, Kirsten, Expected Vegetation Recovery of the Cedar Fire, Cleveland National Forest (http://www.cnpssd.org/fire/cedarfirerecovery-winter.pdf).

According to CNN, Governor Davis announced, 'At the peak of the wildfires, there were more than 15,600 firefighters battling the flames, along with 1,900 fire engines, 203 water trucks, 43 air tankers and 105 helicopters.'"[24]

In 1947, helicopters were first used on wildland fires in the southern California area. Fire managers found that helicopters could rapidly transport personnel and cargo to a fire and then remain on-scene to perform a variety of tactical and logistical missions. Nationally, the USDA Forest Service has over 500 helicopters on contract for use in a wide variety of projects and missions. Helicopters can be equipped with a bucket or fixed tank to drop water or retardant during firefighting operations, deliver helitack crews (firefighting personnel) for initial attack, and transport personnel and cargo in support of fires.[25] Helicopters can serve four basic tactical functions: initial attach crew transport, air tanker, aerial observer of air tactical supervisor platform, and backfiring with aerial ignition devices.[26]

In assessing the use of helicopters for firefighting, the Sacramento Municipal Fire Department noted:

> The firefighting helicopter is an essential component of the total resources needed to suppress wildland fires and to respond to other emergency incidents, such as natural and man-made threats to our community. With a growing number of people moving into rural areas and the subsequent increase in fire loss potential, more and different types of fire protection methods are necessary. The concept of the closest station being able to handle an emergency in the urban interface is not always applicable. Fire station personnel alone, spread out over large geographical response areas, simply cannot make the quick, aggressive attack that is needed to suppress a fast-moving brush fire which threatens homes and their residents. This fact has been repeatedly demonstrated by the devastating fire disasters in California's rural areas with urban interface development like that in Sacramento County. For the sake of comparison, a firefighting helicopter is similar to a fire engine in that it transports and supports a firefighting crew, which provides immediate fire suppression - potentially in the form of helitack crew, constructing fire lines. The helicopter then provides aerial support with water/foam drops. Close ground support of the fire engines and hand crews, structure protection, holding actions and wet line construction can be provided in a moments notice. Support operations, such as reconnaissance and mapping, crew shuttles, cargo delivery and in an emergency, transport injured firefighters; all can be accomplished throughout the course of the fire as needed.
>
> A firefighting helicopter performs a number of different critical fire suppression tasks, described as follows: [1] A helicopter provides the

[24]/ Op. Cit., Containing Wildland Fire Costs: Enhancing Hazard Mitigation Capacity, Epilogue.
[25]/ United States Department of Agriculture, Forest Service, Fire & Aviation Management (http://www.fs.fed.us/fire/aviation/helicopters/index.html).
[26]/ United States Department of Agriculture, Forest Service, Professional Helicopter Pilot Guide, San Dimas Technology & Development Center, February 1996, p. 49.

> safest, quickest and, most effective early attack on wildland fires, thus minimizing property loss and potentially reducing the need for the allocation of other resources, including dozers, additional grass units and personnel. This is the primary function of the helicopter, and the biggest advantage it provides is by limiting property losses through early confinement of the fire area. Additionally, early extinguishment of a fire with a helicopter means that equipment and personnel that would have otherwise been assigned to the fire can continue to provide protection to other parts of the district. [2] A helicopter provides fast and efficient transportation of water/foam to fires. The helicopter proposed in this report would have the capacity to deliver 375 gallons of water with each drop or transport up-to 9 firefighters with equipment. [3] Emergency response personnel may also be transported to all types of incidents, including fires, natural disasters (floods, earthquakes), Urban Search and Rescue deployments and terrorist related incidents. [4] The helicopter provides the vital quick response to large fires (both structural and wildland) in outlying areas, thus reducing the response time which otherwise would be required for engines and firefighters to travel long distances over highways. [5] Helicopters can provide the initial, essential visual reconnaissance to fire command personnel on the ground to assist in incident management. This provides the incident commander with the ability to visualize (through the crews eyes) the entire fire for planning short and long-range strategy, and for mapping the fire to determine its progress and direction. [6] The helicopter can also provide emergency transportation to critical patients to the hospital when the local EMS helicopter providers are not available. The extreme effectiveness of helicopters in limiting property damage through quick and early containment is paramount. Firefighting helicopters will successfully prevent the spread of fires into residential areas where lives, as well as property, can be threatened.[27]

In support of its ground forces, the CDF emergency response air program includes 23 Grumman S-2T 1,200 gallon airtankers (one is kept as maintenance relief), 11 UH-1H Super Huey helicopters (two are kept as maintenance relief), and 14 OV-10A airtactical aircraft (one is kept as maintenance relief). From 13 air attack and nine helitack bases located statewide, aircraft can reach most fires within 20 minutes.[28] There are two helitack bases within the Riverside Unit. The Prado Helitack Base(at the Prado Conservation Camp, Chino), established in 1988, operates a UH-1H helicopter and helitender and responds to an average of 55 fire calls per year. The Hemet-Ryan Helitack Base (4710 W. Stetson Avenue, Hemet), established in 1959, operates a UH-1H and helitender and responds to an average of 100+ calls per year. Currently, CDF is in progress of relocating the facilities at the Hemet-Ryan Helitack Base to March Field.

[27]/ Sacramento Municipal Fire Department, Helicopter Study and Recommendations Report, November 11, 2001 (http://www.smfd.ca.gov/m11_07_01.htm).
[28]/ California Department of Forestry and Fire Protection (http://www.fire.ca.gov/fire_er_airprgm.php).

As proposed, the upper reservoir will be designed for and will accommodate access by Federal, State, and local firefighting helicopters. Helicopters will be able to utilize reservoir waters (helicopter dipping site) to fill suspended Griffith or Bambi buckets (helibuckets) and large-volume "pumpkin" and hard-sided dip tanks. As indicated by the BLM: "Readily available water sources have been shown to be effective in reducing the risk of wildland fires especially in areas where structures are located."[29]

- **Other Fire-Related Considerations**. Firefighters performing fireground operations near high-voltage power lines may be exposed to electrical shock hazards as a result of the damage caused by the flame, heat, and smoke from the fire. Potential shock hazards include: (1) electrical currents that flow through the ground and extend (ground gradient); (2) contact with downed power lines that are still energized; (3) overhead power lines that fall onto and energize conductive equipment and materials located on the fireground; (4) smoke that becomes charged and conducts electrical current; and (5) solid-stream water applications on or around energized, downed power lines or equipment.[30] The most common hazard is through direct or indirect contact with downed energized power lines. Dense smoke can obscure power lines, poles, and towers, as well as become charged and conduct electrical current. The air in the vicinity of high-voltage transmission lines can become ionized and could cause the transmission line to discharge to ground.

- **Vector Control**. With regards to vectors, approximately 3,000 mosquito species have been identified worldwide, including approximately 200 species in the United States alone. Since one unifying feature of this group is that they all have obligate aquatic larvae and pupae, they must have water to complete their life cycle.

  Before the discovery of modern pesticides, mosquito abatement was effectively carried out by applying petroleum-based liquids (diesel oil and kerosene) to the water surface. After World War II, pesticides, including DDT (dichlorodiphenyltrichloroethane), were widely used. Mosquitoes developed a resistance to DDT and other related insecticides, thus decreasing there effectiveness. In the decades that followed, many new classes of insecticides were developed for mosquito control, each with decreasing environmental toxicity. Modern mosquito control practices integrate a diversity of management practices, including the use of environmentally sound larvicides, biological control agents, and habitat management.

  Arthropod-borne viruses (arboviruses) are viruses that are maintained in nature through biological transmission between susceptible vertebrate hosts by blood-feeding arthropods, including mosquitoes, sand flies, ceratopogonids and ticks. In the United States, West Nile virus (WNV) is transmitted by infected mosquitos, primarily members of the *Culex* species. The most serious manifestation of WNV infection is fatal encephalitis in humans and horses, as well as mortality in certain domestic and wild birds. WNV has also been a significant cause of human illness in the United States. Arboviral encephalitis can be prevented through the use of personal protective measures

[29]/ Bureau of Land Management (Dynamas Corporation), Ten Sleep Public Land – Private Land Interface Hazardous Mitigation Report, Draft Report, Order No. KAD034014, July 2004, p. 17.
[30]/ National Institute for Occupational Safety and Health, Fire Fighters Exposed to Electrical Hazards during Wildland Fire Operations, NIOSH Bulletin HID 15, Center for Disease Control and Prevention, January 2002.

to reduce contact with mosquitoes and through public health measures to reduce the population of infected mosquitoes in the environment.[31]

WNV is a member of the family Flaviviridae (genus *Flavivirus*). Thirty-six species of mosquito species have been shown to be infected with WNV. This wide variety of WNV-infected mosquito species has widened this virus' host-range in the United States, such that 27 mammalian species have been shown to be susceptible to WNV infection and disease has been reported in twenty of these (including horses and humans).[32]

As reported by the County of Riverside Community Health Agency, 103 human WNV cases were reported in Riverside County in 2005. The geographic distribution of human WNV cases reflects the highest number of cases (29 percent) in the Moreno Valley and Perris areas. Twenty-five percent of the cases occurred in the Hemet and San Jacinto areas and surrounding communities.[33]

Urban storm water runoff regulations now mandate the construction and maintenance of structural Best Management Practices (BMPs) for both volume reduction and pollution management. Those BMPs can create additional sources of standing water and sources for mosquito propagation. In 1998, the California Department of Health Services' Vector-Borne Disease Section (VBDS) entered into an agreement with Caltrans to provide technical expertise regarding vector issues within its storm water BMP retrofit pilot study. As part of that study, VBDS conducted a two-year study of vector production associated with the 37 operational storm water BMP structures in southern California. The study concluded that a variety of vector species, particularly mosquitoes, utilize the habitats created by storm water BMP structures.

Design and maintenance of BMP structures has been shown to contribute to the production of vectors. In addition, without proper maintenance, storm water BMP structures can degrade and experience a degradation of their pollutant-removal efficiency. Stagnant water with a high concentration of organic material can attractive mosquitoes. In general, any design that includes standing water or requires more than 72 hours to drain serves as a source of mosquitoes and other vectors. Aquatic habitats that last only three to five days generally do not generally allow for the complete development of mosquito larvae. In California, the general recommendation has been for structures to drain completely in 72 hours or less.

Structural damage can reduce BMP performance and create conditions allowing for standing water. The accumulation of vegetation, silt, and debris predicates the need for routine maintenance to prevent the occurrence of standing water.[34]

[31]/ United States Department of Health and Human Services, Center for Disease Control and Prevention, Division of Vector-Borne Infectious Diseases, West Nile (http://www.cdc.gov/ncidod/dvbid/westnile/index.htm).
[32]/ United States Department of Health and Human Services, Center for Disease Control and Prevention, Epidemic/Epizootic West Nile Virus in the United States: Guidelines for Surveillance, Prevention, and Control, Division of Vector-Borne Infectious Diseases, 2003, p. 5.
[33]/ County of Riverside Department of Public Health, Public Health Update – West Nile Virus Activity in Riverside County for 2005, Community Health Agency Disease Control Branch, February 9, 2006.
[34]/ Metzer, Marco E., et al., The Dark Side of Stormwater Runoff Management: Disease Vectors Associated with Structural BMPs, Stormwater – The Journal for Surface Water Quality Professionals, Volume 3, No. 2, March/April 2002.

4.15.2 Public Services Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's regulatory setting.

- Federal Wildland Fire Management Policy. The Federal Wildland Fire Management Policy,[35] issued by the Secretaries of Agriculture and the Interior in 1995, requires that Federal lands with burnable vegetation have a fire management plan (FMP) based on its land management plan. The Federal Wildland Fire Management Policy is based on the following guiding principals: (1) Firefighter and public safety is the first priority in every fire management activity; (2) The role of willand fire as an essential ecological process and natural change agent will be incorporated into the planning process; (3) FMPs, programs, and activities support land and resource management plans and their importance; (4) Sound risk management is a foundation for all fire management activities; (5) Fire management programs and activities are economically viable, based on values to be protected, costs and land and resource management objectives; (6) FMPs must be based on the best available science; (7) FMPs and activities incorporate public health and environmental quality considerations; (8) Federal, tribal, state, and local interagency coordination and cooperation are essential; and (9) Standardization of policies and procedures among Federal agencies is an ongoing objective.

- Healthy Forests Restoration Act. Title I of the Healthy Forests Restoration Act of 2003 (P.L. 108-148) (HFRA) focuses primarily on expedited hazardous-fuel treatment on some NFS and BLM lands at risk of wildland fire and insect or disease epidemics. These lands include areas where vegetation treatment will provide long-term benefits to threatened and endangered species. The HFRA encourages Federal agencies to involve State and local governments and citizens when developing plans and projects for vegetation treatment on Federal and adjacent non-Federal lands. The HFRA is consistent with community-based wildland fire planning, watershed planning, and related efforts under the "National Fire Plan" and "A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan."[36]

  The HFRA provides improved administrative procedures for hazardous-fuel-reduction projects on NFS and BLM lands in the wildland urban interfaces (WUIs) of "communities in the vicinity of Federal lands at risk from wildfire."[37] The act encourages the development of community wildfire protection plans under which communities will designate their WUIs, where HFRA projects may take place. The HFRA is intended to accelerate the interest of listed at-risk communities.

[35]/ Under the policy, all fires not ignited by managers for predetermined objectives are considered wildland fires. All wildland fires have the same classification and receive management appropriate to conditions of the fire, fuels, weather, and topography to accomplish specific objectives for the area where the fire is burning. These management actions are termed the "appropriate management response" and vary among individual fires (Source: Zimmerman G. Thomas and Bunnell, David L., The Federal Wildland Fire Policy: Opportunities for Wilderness Fire Management, United States Department of Agriculture, Forest Service, Forest Service Proceedings, RMRS-P-15-VOL-5, 2000, p. 289).

[36]/ United States Forest Service and Bureau of Land Management, The Healthy Forest Initiative and Healthy Forests Restoration Act, Interim Field Guide, FS-799, February 2004.

[37]/ 66 FR 751 (January 4, 2001) and 66 FR 43384 (August 17, 2001).

The USDA Forest Service defines "wildland urban interface zones" as "those areas of resident population at imminent risk from wildfire, and human developments having special significance, including critical communication sites, municipal watersheds, high voltage transmission lines, observatories, church camps, research facilities, and other structures that if destroyed by fire, would result in hardships to communities. These areas encompass not only the sites themselves, but also the continuous slopes and fuels that lead directly to the sites, regardless of the distance involved."[38]

Those wildland urban interface zones located within the TRD, as identified by the USDA Forest Service, are illustrated in Figure 4.15.2-1 (Trabuco Ranger District – Wildland Urban Interface Zones).

- California Government Code. Under Assembly Bill 337 (AB337), passed in 1992, the California Department of Forestry and Fire Protection (CDF or CALFIRE) was required to identify and classify fire hazards in "Local Responsibility Areas" (LRA). The law mandated fire hazard assessments and zoning and included related minimum fire hazard standards to be adopted at the local level. As required under Sections 51175-51188 of the CGC, the CDF shall identify areas in the State as "very high fire hazard severity zones"[39] (VHFHSZ) based on consistent Statewide criteria addressing the severity of fire hazards expected to prevail in those areas. Very high fire hazard severity zones shall be based on fuel loading, slope, fire weather, and other relevant factors.[40]

  Mutual aid is provided between and among local jurisdiction and the State under the terms of the California Disaster and Civil Defense Master Mutual Aid Agreement[41] (Sections 8555-8561, CGC).[42]

- Public Resources Code. With regards to fire hazards, as specified under Section 4125(a) of the PRC: "The board [of Forestry] shall classify all lands within the State, without regard to any classification of lands made by or for any Federal agency or purpose, for the purpose of determining areas in which the financial responsibility of preventing and suppressing fires is primarily the responsibility of the State. The prevention and suppression of fires in all areas that are not so classified is primarily the responsibility of local or Federal agencies, as the case may be." As further specified in Section 4128.5(a) therein: "It is the intent of the Legislature that decisions affecting the use of land in State

[38]/ United States Forest Service, Forest Service Manual 5140, R3 Supplement No. 5100-2000-2.

[39]/ "Fire hazard severity zones" are geographic areas designed pursuant to Sections 4201-4204 of the PRC in State Responsibility Areas or as local agency "very high fire hazard severity zones" designated pursuant to Sections 51175-51189 of the CGC. Section 1280 of the CCR entitles the maps of these geographic areas as "maps of the fire hazard severity zones in the State Responsibility Areas of California."

[40]/ Pursuant to Section 51179 of the CGC, local agencies can accept or reject the CDF VHFHSZ assessment and delineation and can alter and update VHFHSZ boundaries as deemed necessary. Approximately 51 jurisdictions throughout the State with areas that otherwise would have been identified with a VHFHSZ claimed to meet or exceed AB337 requirements and were not required to designate VHFHSZ.

[41]/ The mutual aid system allows local law enforcement agencies to mutually support adjacent or regional jurisdictions at any time a single agency's own resources are insufficient. The mutual aid plan outlines the procedures for alerting, coordinating, dispatching, and utilizing law enforcement personnel and equipment resources.

[42]/ The State is divided into mutual aid regions. There area six mutual aid regions for fire and general mutual aid and seven mutual aid regions for law enforcement and coroners. The Project's sites are located in the Administrative and Mutual Aid Southern Region I (Los Angeles, Orange, San Luis Obispo, Santa Barbara, and Ventura Counties) and Region VI (Imperial, Inyo, Mono, Riverside, San Bernardino, and San Diego Counties), in Fire and Rescue Mutual Aid Regions I and VI, and Law Enforcement and Coroner Mutual Aid Regions I and VI. Section 8568 of the California Emergency Service Act (Chapter 7 of Division 1 of Part 2) states that "the State Emergency Plan shall be in effect in each political subdivision of the State, and the governing body of each political subdivision shall take such actions as may be necessary to carry out the provisions thereof."

responsibility areas result in land uses which protect life, property, and natural resources from unreasonable risks associated with wild land fires."

As specified in Section 4292, except as otherwise provided in Section 4296, any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land or forest-covered land, brush-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or comer pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such pole or tower. The director or agency which has primary fire protection responsibility for the protection of such area may permit exceptions from the requirements of this section based upon specific circumstances.

Section 4293 states, in part, that any person that owns, controls, operates, or maintains any electrical transmission or distribution line in such areas shall maintain a clearance of the respective specified distances, in all directions, between all vegetation and all conductors which are carrying electric current, any line which is operating at (a) 2,400 or more volts but less than 72,000 volts, four feet; (b) 72,000 or more volts but less than 110,000 volts, six feet; and (c) 110,000 or more volts, ten feet. Under USDA Forest Service Order No. 91-1 (Fire Restrictions – Pacific Southwest Region), pursuant to 36 CFR 261.50(a)-(b), the following are prohibited on lands, Forest Development Roads, or Trails: violating specified provisions of California State Forest and Fire Laws on NFS, or adjacent thereto, when such act or omission affects, threatens, or endangers property of the United States administered by the USDA Forest Service, including Sections 4291 (Reduction of Fire Hazards around Buildings), Section 4292 (Powerline Hazard Reduction), and Section 4293 (Powerline Clearance Required).

- California Code of Regulations. As defined in Section 702A of the CCR, "fire hazard safety zones" are "geographical areas designated pursuant to California Public Resources Code Section 4201 through 4204 and classified as Very High, High, or Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code Sections 51175 through 51189. The California Code of Regulations, Title 14, Section 1280 entitles the maps of these geographical areas as 'Maps of the Fire Hazard Severity Zones in the State Responsibility Area of California.'"

  Section 2700 et. seq. (High Voltage Safety Orders) in Title 8 provides safety orders establishing essential requirements and minimum standards for safely installing, operating, and maintaining electrical installations and equipment. Cal/OSHA has established specific workplace standards for fire safety. As required under Title 8, Article 36, Section 1920 (General Requirements) in the CCR: "The employer shall be responsible for the development of a fire protection program to be followed throughout all phases of the construction work; and he shall provide for the fire fighting equipment

as specified in this Article. As fire hazards occur, there shall be no delay in providing the necessary fire protection and/or prevention equipment."[43]

The California Fire Code is Part 9 of the twelve parts of the State's building regulations, codified in Title 24, also referred to as the California Building Standards Code.

- California Health and Safety Code. Sections 2000-2007 authorize the establishment of mosquito and vector-control districts. As defined therein, a "vector" includes any animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates (Section 2002[k], H&SC).

4.16 Recreation

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations and existing Etiwanda Generating Station and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, recreation is not further addressed herein.

4.16.1 Recreation Environmental Setting

As indicated in the "Recreational Fishery Resources Conservation Plan" (RFRCP) jointly executed by the United States Departments of Agriculture, Commerce, Defense, Energy, Interior, Transportation and the USEPA: "As we enter a new century, Federal and State resource management agencies and resource stakeholders, including willing Tribes, must work together toward a shared vision of a future where: 'All waters of the United States will be capable of sustaining healthy fish populations, and all Americans will have access to and opportunity for a diverse array of quality recreational fishing experiences.'"[44]

The RFRCP set a national goal the provision of "increased recreational fishing opportunities nationwide through the conservation, restoration, and enhancement of aquatic systems and fish populations, and by increasing fishing access, education and outreach, and partnership opportunities." In response to that executive order and the direction established under the RFRCP, it is the policy of the USFSW that "Federal Agencies shall, to the extent permitted by law and where practicable, and in cooperation with States and Tribes, improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities."[45]

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[43]/ OSHA's "Safety and Health Regulations for Construction" (29 CFR 1926.150[a]) requires employers performing demolition and construction work are responsible for the development of a fire protection program to be followed throughout all phases of the construction and demolition and shall provide the specified firefighting equipment identified under those regulations. As fire hazards occur, there shall be no delay in providing the necessary equipment. Access to all available firefighting equipment shall be maintained at all times and shall be conspicuously located. As further specified therein, a temporary or permanent water supply, of sufficient volume, duration, and pressure, required to properly operate the firefighting equipment shall be made available as soon as combustible materials accumulate. Where underground water mains are to be provided, they shall be installed, completed, and made available for use as soon as practicable (29 CFR 150[b]). Internal combustion engine powered equipment shall be so located so that the exhausts are well away from combustible materials. Smoking is prohibited at or in the vicinity of operations that constitute a fire hazard and prohibitions must be conspicuously posted (29 CFR 1926.151[a]).

[44]/ United States Department of the Interior, Recreational Fisheries Resources Conservation Plan, 1995.

[45]/ United States Fish and Wildlife Service, National Policy Issuance No. 98-07 (Executive Order 12962-Recreational Fisheries, December 20, 1996.

Recreational facilities located within the CNF, the City of Lake Elsinore, and the County of Riverside are separately discussed below.

- **Cleveland National Forest**. A substantial portion of the Project is located within the CNF. The CNF is the southernmost of the national forests in California. Its approximately 567,000 acres are located in Orange, Riverside, and San Diego Counties, at elevations ranging from 460 to 6271-feet above msl. Camping, picnicking, hiking, equestrian use, and sight-seeing are popular National Forest activities. Recreational use of the CNF during fiscal year 2001 was "0.79 million National Forest visits +/- 31 percent. There were 0.83 million site visits, an average of 1 site visit per national forest visit. Included in the site visit estimate are 31,616 Wilderness visits."[46] Developed recreational facilities can accommodate about 4,200 persons at one time.[47]

  Based on the most recent day-use survey conducted within the CNF (summer 2002), it was determined that, among the day-use site visitors, approximately two-thirds were male (66 percent). Of those responding to the survey questionnaire (249 respondents), ages ranged from 18 to 86 years, with an average age of 40 years. Whites (71 percent) were the largest racial/ethnic group of the visitors surveyed, followed by Mexican (9 percent) and American Indian or Alaskan Native (4 percent). Twelve percent described themselves as Hispanic/Latino.[48] Most CNF day-use visitors were recreating with family and friends, visit for one to three hours, were repeat visitors, and planned to return to sites on the CNF.[49]

  Recreational opportunities within the TRD include, but are not limited to, camping, picnicking, hiking, backpacking, mountain biking, wildlife observation, and hang gliding. There are several facilities that accommodate those activities. Developed recreational complexes at Black Star Canyon, Blue Jay, El Cariso, Fry Canyon Observatory, Laguna Mountain, San Juan Canyon, and Trabuco Canyon. USDA Forest Service operated campgrounds within the TRD include: (1) Blue Jay (55 sites), located west of SR-74 on Long Canyon Road; (2) El Cariso North (24 sites), located west of SR-74 near Killen Truck Trail; (3) Upper San Juan (18 sites), located along SR-74 and southwest of Decker Canyon; and (4) Wildomar (12 sites), located east of the area of Rancho Capistrano (Morrell Potero) and south of Elsinore Peak. Ortega Oaks Campground is an additional facility located along SR-74 within the TRD but is privately owned and operated. Trails designated for non-motorized use provide access to the National Forest by hikers, equestrian riders, and mountain bikers. There are currently about 327 miles of designated trials within the CNF.[50]

[46]/ Kocis, Susan M., et al., National Visitor Use Monitoring Results, USDA Forest Service Region 5, Cleveland National Forest, August 2002, p. 9.
[47]/ Chavez, Deborah J., Managing Outdoor Recreation in California: Visitor Contact Studies 1989-1998, General Technical Report PSW-GTR-180, United States Forest Service, Pacific Southwest Research Station, January 2001, p. 7.
[48]/ Chavez, Deborah J., et al., Day Use of National Forest Series: The Cleveland National Forest – Southern California Planning Places, 2002, United States Forest Service, Pacific Southwest Research Station, March 2003, p. 8.
[49]/ Ibid., p. 26.
[50]/ United States Fish and Wildlife Service, Biological and Conference Opinions on the Continued Implementation of Land and Resource Management Plans for the Four Southern California National Forests, as Modified by New Interim Management Direction and Conservation Measures (1-6-00-F-773.2), February 27, 2001, p. 9.

To the south and east of the proposed upper reservoir sites is the existing Wildomar Off-Highway Vehicle (OHV) area, located along Wildomar Road, south of Elsinore Peak. There are currently approximately 54 miles of designated OHV routes within the CNF.[51]

Management of recreation activities in the CNF is achieved by the incorporation of "Recreation Opportunity Spectrum" (ROS) into the Forest Plan. The ROS is a framework for defining classes of outdoor recreation environments, activities, and experience opportunities within the National Forest. The opportunities are arranged along a continuum or spectrum divided into classes which define recreation opportunities within various areas of the forest. Table 4.16.1-1 (Description of Recreational Opportunity Spectrum Classes) describes the four ROS classes that occur within the TRD in proximity to the Project, as illustrated in Figure 4.16.1-1 (Trabuco Ranger District – Recreational Opportunity Spectrum).

Table 4-16.1-1. Description of Recreational Opportunity Spectrum Classes

ROS Class	Description of Recreation Opportunity Setting
Primitive (P)	Very high probability of solitude and closeness to nature, challenge and risk; essentially unmodified natural environment; minimal evidence of others; few restrictions evident; non-motorized access and travel on trails or cross country; no vegetation alterations; at least 5,000 acres in size; at least 3 miles from the nearest road or trails with motorized use.
Semi-primitive, Non-motorized (SPNM)	High probability of solitude, closeness to nature, challenge and risk; natural appearing environment; some evidence of other users; subtle restrictions and controls are evident; non-motorized access and travel on trails; vegetative alterations occur but are widely dispersed and not too evident; at least 2,5000 acres in size, at least 0.5 mile from all roads, railroads or trails with motorized use.
Semi-Primitive, Motorized (SPM)	Moderate probability of solitude, and closeness to nature; high degree of challenge and risk using motorized equipment; predominately natural appearing environment; few users but evidence on trails; minimum or subtle on-site controls; vegetative alterations occur but are few; at least 2,500 acres in size; at lease 0.5 mile from all roads, railroads, or trail with motorized use, but may contain roads that are usually closed.
Roaded Natural (RN)	Some probability of solitude; little challenge and risk; mostly natural appearing environment; moderate concentration of users at developed and dispersed campsites; some obvious site restrictions and user controls are present; access is motorized; vegetative alterations completed to maintain desired visual characteristics; no size restrictions.

Source: USDA Forest Service

The 39,450-acre San Mateo Canyon Wilderness is located south and east of the proposed Lake-Case Springs transmission alignment. In the Project area, the wilderness is accessible via an improved trail system (Morgan Trail) and provide only non-motorized forms of access. No trails in the vicinity of the Project are designated as National Recreation Trails.

Within the CNF, recreational use during 2001 was estimated at 790,000 National Forest visits (based on a margin of error of 31 percent). There were 830,000 site visits, representing an average of one site visit per National Forest visit. Included in the site visit estimate are 31,616 wilderness visits. This level of use is attributed to the entire 460,000-acre CNF, which includes areas not in the vicinity of the Project.

Under the provisions of the Federal Land Recreation Enhancement Act, beginning in fiscal year 2005, the Secretaries of Agriculture and the Interior may establish, modify,

[51]/ Op. Cit, Biological and Conference Opinions on the Continued Implementation of Land and Resource Management Plans for the Four Southern California National Forests, as Modified by New Interim Management Direction and Conservation Measures (1-6-00-F-773.2), pp. 8-9.

charge, and collect recreation fees at Federal recreational lands and waters. Recreational fee sites located in the TRD are illustrated in Figure 4.16.1-2 (Trabuco Ranger District - Recreation Fee Sites).

In 2003, the USDA Forest Service has granted to the Elsinore Hang Gliding Association (EHGA) a revocable special use permit (SUP) for the use of two launch sites for recreational hang gliding and paragliding along South Main Divide Truck Trail. As indicated in that SUP: "This permit covers 2 acres, and/or 0 miles and is described as: NE ¼ of SEC 22 and SE ¼ of SEC 23, T6S R5W (SBM) as shown on the location map attached to and made a part of this permit, and is issued for the purpose of: Maintaining and operating two launch sites, Edwards and E for hang gliders and paragliders that include three outlying windsocks."[52] Hang gliders launching from those sites land at a number of locations near Lake Elsinore. In 2006, the Applicant was informed by the EHGA that litigation then existed between the EHGA and the property owner (CKS Concordia Development, LLC) with regard to a 9-acre portion of the alternative Ortega Oaks Powerhouse site.

- **City of Lake Elsinore**. Lake Elsinore is a shallow natural lake with the deepest area located in the southwest section of the main basin. The lake bottom is nearly level at an elevation of 1223-feet above msl. The approximate volume and surface area of the lake's main basin, in relation to its elevation, is listed in Table 4.16.1-2 (Water Elevation and Volume in the Lake Elsinore Main Basin). Steeper shoreline slopes existing on the north and south banks (5-10 percent), while flatter slopes exist along the east and west banks (1.5-2 percent).[53] When the lake water level drops to low levels, the lake becomes unusable for recreation.[54]

Table 4.16.1-2. WaterElevation and Volume in the Lake Elsinore Main Basin

Lake Elevation (feet above msl)	Lake Volume (acre-feet)	Surface Area (acres)
1236	26,935	2,892
1240	38,519	3,074
1245	54,504	3,319
1250	71,443	3,463
1255	89,114	3,606
1260	107,877	3,882

Source: City of Lake Elsinore (Black and Veatch)

Climate in the Elsinore Valley is generally comprised of warm, dry summers and mild winters. Virtually all the rainfall within the region occurs during winter months. Due to the area's semi-arid climate, water levels within Lake Elsinore have historically experienced significant fluctuations due to periods of flooding followed by prolonged dry periods. Lake Elsinore is a historically ephemeral lake whose main sources of water have been direct natural run-off from the surrounding mountains and drainage from the San

[52]/ As further stated therein: "This permit is a license for the use of federally owned land and does not grant any permanent, possessory interest in real property, nor shall this permit constitute a contract for purposes of the Contract Disputes Act of 1978 (41 U.S.C. 611). Loss of the privileges granted by this permit by revocation, termination, or suspension is not compensable to the holder."
[53]/ City of Lake Elsinore (Noble Consultants, Inc.), Lake Elsinore Master Plan/Economic Feasibility Study (1995-2015), September 16, 1994, pp. III-1 and III-2.
[54]/ Ibid., p. III-8.

Jacinto River. Evaporation losses have historically exceeding natural inflows into the lake. Left unmanaged, the lake has been known to be completely dry in severe drought conditions. In the last 75 years, average annual lake inflow has exceeded evaporative losses only 15 times. When the lake is low, fish have died and recreational use has stopped or been substantially curtailed (the lake actually went dry in the 1960's).

In response to these conditions, a lake stabilization project was initiated by the Lake Elsinore Management Authority (LEMA), a Joint Power Authority (JPA), in 1993. The LEMA subsequently adopted the "Lake Elsinore Management Plan" to alleviate these conditions and promote shoreline development. The $55 million management project, which included the construction of a 2.5-mile long levee by the USACE, was designed to ease extreme flooding and evaporative losses in the lake. Major earthwork construction was undertaken at the lake beginning in June 1989 with the majority of the work completed by March 1991. The key physical features of the plan included a main levee, a lake inlet system, an operations island, new groundwater wells and water distribution system, and a wetlands and riparian mitigation area. The stated objectives of these features included water quality improvement, irrigation supply, flood protection, outdoor recreational enhancement, and fish and wildlife enhancement. One of the functions of these physical features was to maintain the lake's operating range between 1240 and 1249-feet above msl the wetlands water level at approximately 1240-feet above msl.

Although it represents the largest natural freshwater lake in southern California, the level of recreational use of Lake Elsinore, while significant, can be assumed to be substantially less than would be expected if the lake levels were to be stabilized and if the lake's water quality were to be improve. The California Department of Parks and Recreation, referring to the LEMP, noted that "Lake Elsinore is not one of the most popular recreational lakes in Southern California. It could be if its problems of inconsistency are remediated through this proposal."[55]

As indicated in the "Final Report – Engineering Feasibility Study for NPDES Permit for Discharge to Lake Elsinore": "Lake Elsinore needs a more stable lake elevation if it is to become a popular destination for visitors and a desirable location for permanent lakeside dwellers. In addition, a more stable water level is essential for the submerged vegetation that forms the basis of the long-term lake management strategy of biomanipulation. Finally, the desirable emergent riparian growth at the lake edges also requires a fairly stable water elevation. A good method to moderate the current water level fluctuations would be to add new water in winter from other sources than the natural drainage."[56]

"Lake Elsinore currently has an annual water deficit of about 7,500 acre-feet and about 15,000 acre-feet in dry years. The Lake typically experiences a four to five foot elevation drop in normal years. The Lake has dried up completely in certain years. These elevation changes have resulted in significant adverse impacts on the quality and beneficial uses of the Lake, including contact and non-contact recreation, warm water

[55]/ Memorandum from Richard G. Rayburn, Chief, Resource Protection Division, Department of Parks and Recreation, dated August 17, 1987, included in "Final Environmental Impact Report/Supplemental Environmental Assessment – Proposed Elsinore Lake Management Project, SCH No. 84050901, Elsinore Valley Municipal Water District (Engineering – Science), January 1988, Comment Letter No. 11.
[56]/ Op. Cit., Final Report – Engineering Feasibility Study for NPDES Permit for Discharge to Lake Elsinore, p. 8-1.

aquatic habitat, and wildlife habitat."[57] These impacts, in turn, result in significant adverse impacts on the economy of the surrounding community. In 2000, there were 41,250 recreation visitor days from local residents to the lake and 177,300 visitor days from out-of-area visitors. Most users were mainly boaters. Only 5 to 20 percent of the estimated lake use was associated with angling.

The most important condition affecting recreation use at Lake Elsinore is the water level. Between 1992 and 1999, the surface elevation of Lake Elsinore fluctuated between 1229 and 1259-feet above msl. At lake levels below 1240-feet above msl, the water quality of Lake Elsinore declines significantly and adversely impacts recreational use. This poor water quality exists because warm water resulting from lowering lake levels creates excessive algal growth. This excessive algal growth removes dissolved oxygen from the water column as it grows and decays, which leads to sporadic fish kills. Both the fish kills and abundant algae create unpleasant conditions and potentially unsafe conditions for water recreation.

Lake levels affect various recreational opportunities. Warm water resulting from lowering water levels tends to favor fish populations of carp and shad, fish anglers do not highly value. In addition, the lake level affects the condition of the shoreline. Table 4.16.1-3 (Shoreline Locations Potentially Affected by Lake Level Fluctuations) depicts changes in the shoreline location associated with lake level fluctuations at the following locations: (1) Lakeshore Drive and Riverside Drive, (2) Park at Chaney Street and (3) Riverside County Park in Lakeland Village.

Table 4.16.1-3. Shoreline Locations Potentially Affected by Lake Level Fluctuations

Shoreline Location	**Change in Surface Level Elevation** (feet above msl)	**Resulting Horizontal Shoreline Movement** (receding shoreline in feet)
Lakeshore Drive and Riverside Drive	1240 to 1242 1240 to 1247	112 feet 415 feet
Park at Chaney Street	1240 to 1242 1240 to 1247	21 feet 81 feet
Riverside County Park - Lakeland Village	1240 to 1242	21 feet

Source: Elsinore Valley Municipal Water District

As illustrated in Figure 4.16.1-3 (Lake Elsinore Shoreline Zone Identification),[58] there are eight primary boat launch sites along the perimeter of Lake Elsinore, including Playground Park, Weekend Paradise and Crane's Marina, Elsinore West Marina, Roadrunner and Lake Elsinore Recreation Area, Seaport, and Outhouse. Revenues generated through the sale of lake day use passes at those launch sites is presented in Table 4.16.1-4 (City of Lake Elsinore Revenues from Sale of Lake Day Use Passes).

There are four fishing beaches along the lake (Elm Grove, Lowell Street, Davis Street, and Whiskers). No swimming is allowed but wading is permitted in designated areas. With regards to lake use, Federal, State, and local laws are enforced by the Riverside County Sheriff's Department, Lake Patrol.

[57]/ California Regional Water Quality Control Board, Santa Ana Region, Order No. R8-2002-0009-A01, January 23, 2002, p.1.
[58]/ City of Lake Elsinore, Lake Use Regulations, December 2006.

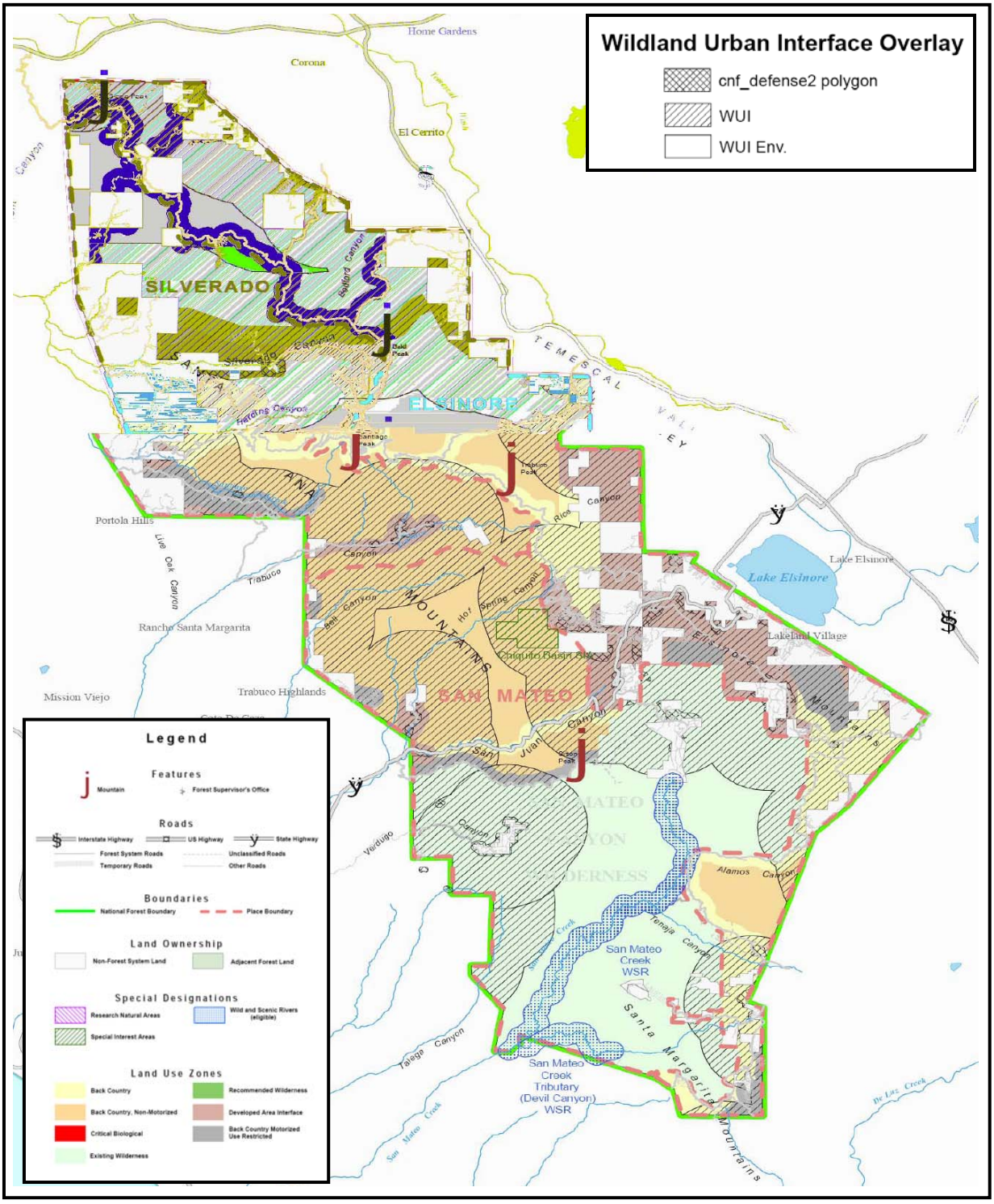


Figure 4.15.2-1. Trabuco Ranger District Wildland Urban-Interface Map
Source: USDA Forest Service

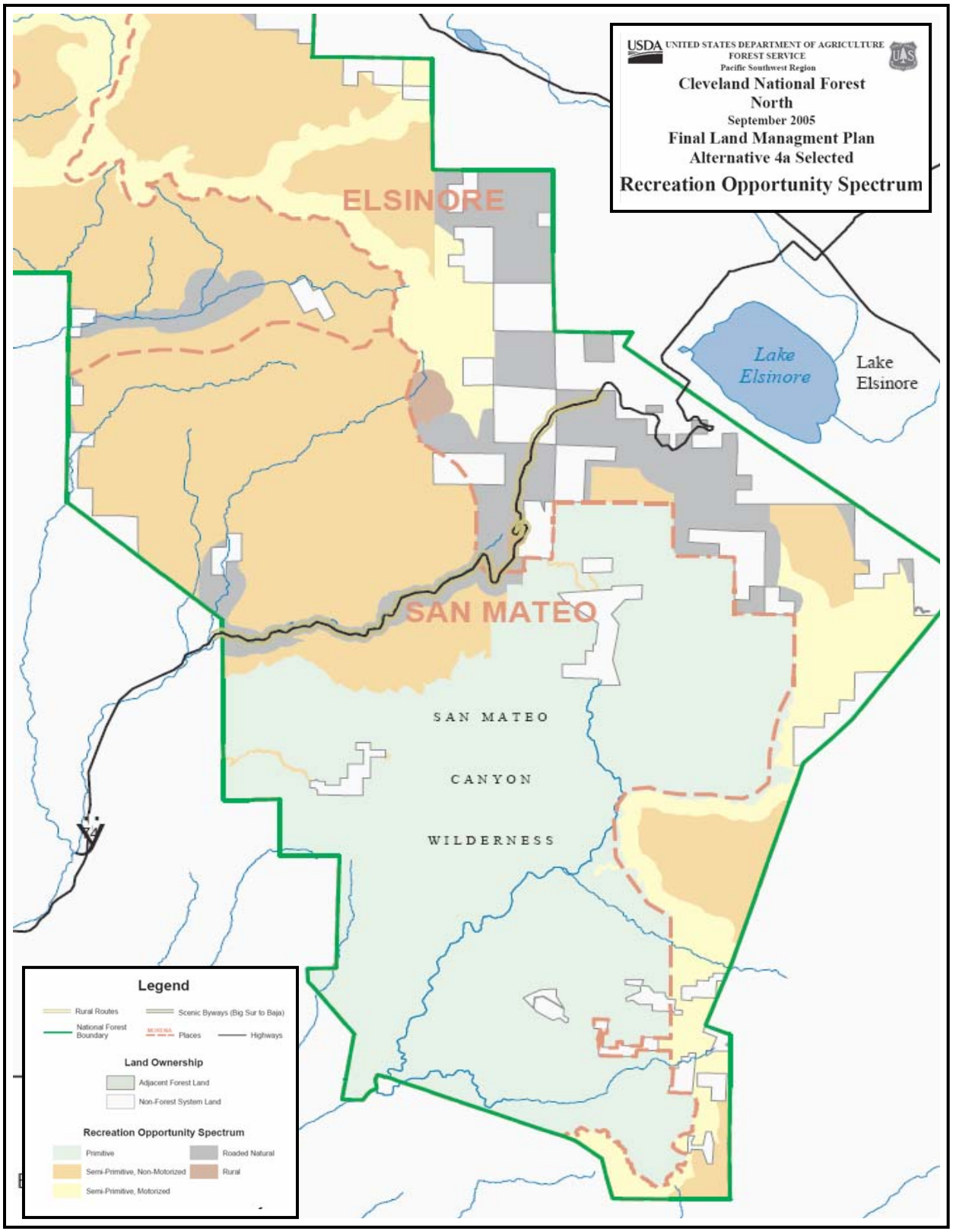


Figure 4.16.1-1. Trabuco Ranger District – Recreational Opportunity Spectrum
Source: USDA Forest Service

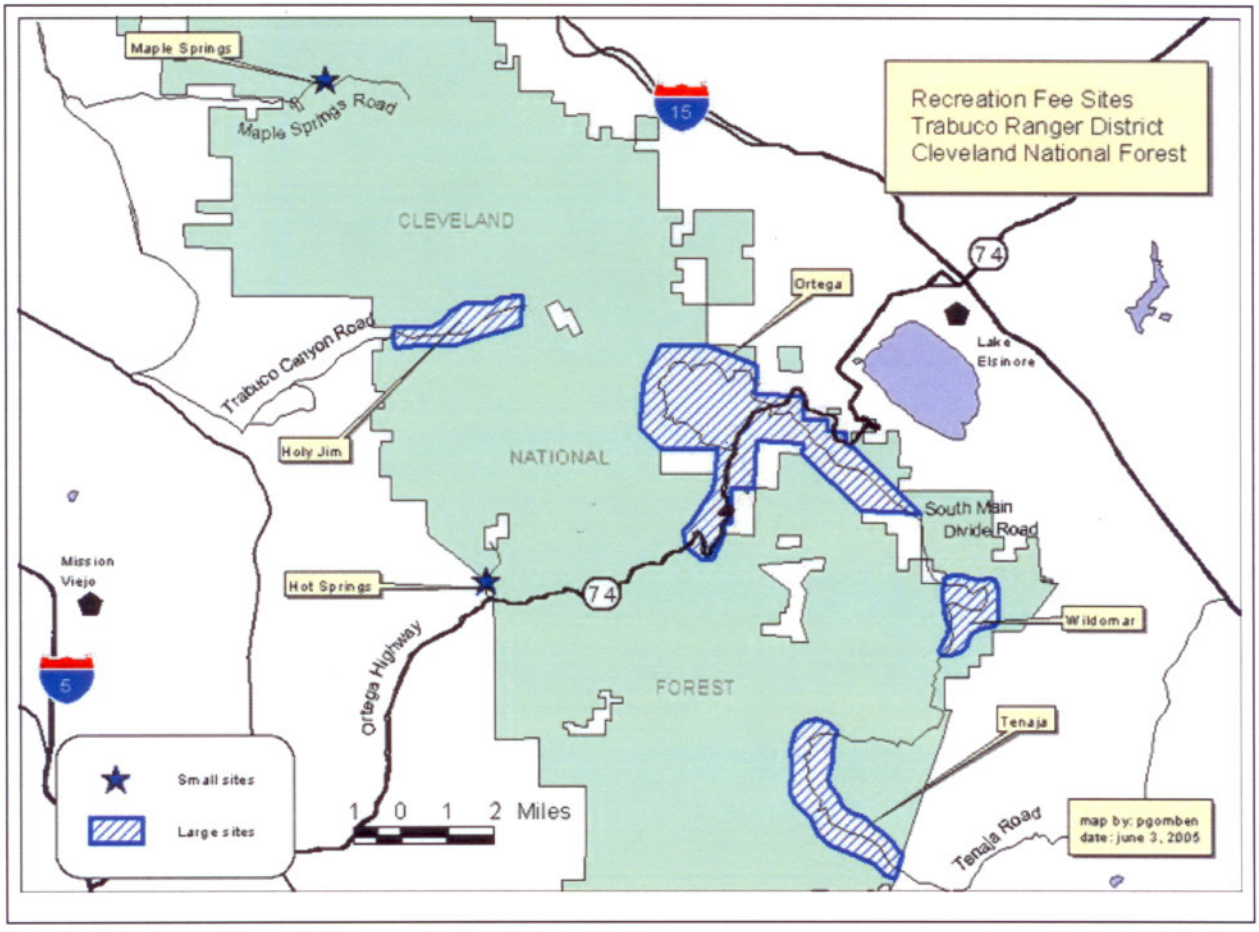
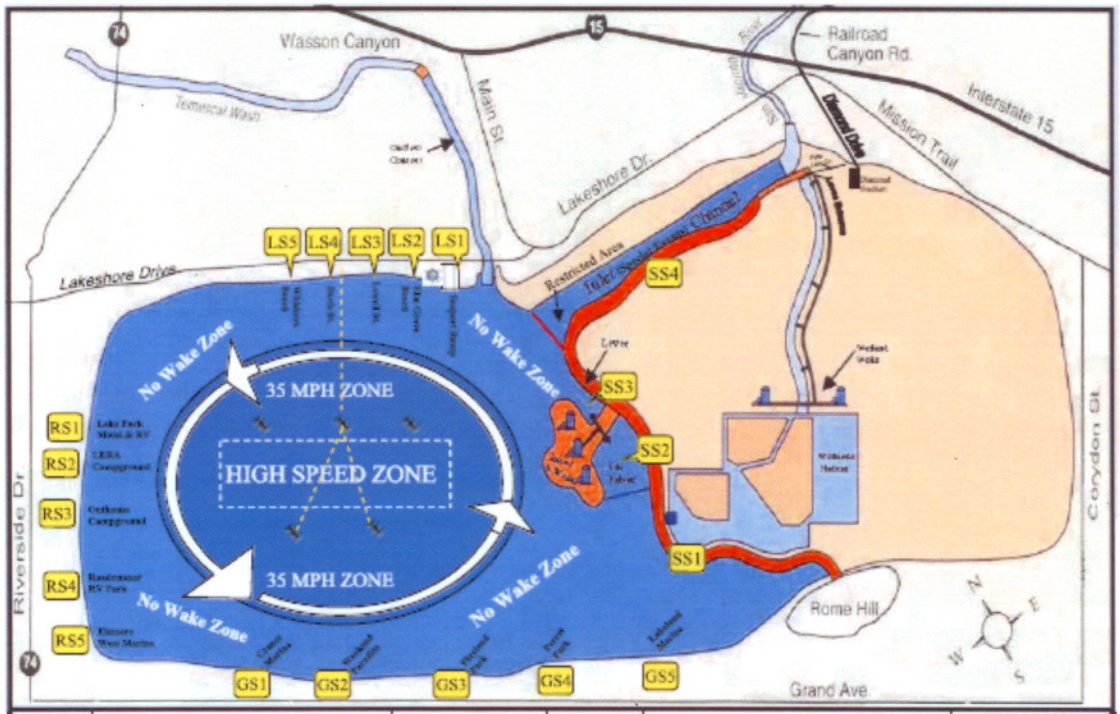


Figure 4.16.1-2. Trabuco Ranger District - Recreation Fee Sites
Source: USDA Forest Service



ZONE	LOCATION	ACTIVITY	ZONE	LOCATION	ACTIVITY
	Lake Department Headquarters 500 W. Lakeshore Drive (951) 674-7730		RS5	Elsinore West Marina 32700 Riverside Drive	
LS1	Seaport Boat Launch 500 W. Lakeshore Drive		GS1	Crane Lakeside Park & Resort 15980 Grand Ave.	
LS2	Elm Grove Beach Lindsay St. at Lakeshore Drive		GS2	Weekend Paradise 16006 Grand Ave.	
LS3	Lowell Street Fishing Beach At Lakeshore Drive		GS3	Playland RV Park 16730 Grand Ave.	
LS4	Davis Street Fishing Beach At Lakeshore Drive		GS4	Perret Park 32938 Perret Blvd.	
LS5	Whiskers Fishing Beach Townsend St. at Lakeshore Dr.		GS5	Lakeland Marine (Boat Repair) 18010 Grand Ave.	
RS1	Lake Park Motel & RV 32000 Riverside Drive		SS1	Levee System entrance at Pete Lehr Dr & Diamond Circle.	
RS2	LERA Campground 32040 Riverside Drive		SS2	Levee System entrance at Pete Lehr Dr. & Diamond Circle.	
RS3	The Outhouse 32310 Riverside Drive		SS3	Levee System entrance at Pete Lehr Dr. & Diamond Circle.	
RS4	Roadrunner RV Park 32500 Riverside Drive		SS4	Levee System entrance at Pete Lehr Dr.& Diamond Circle.	

Figure 4.16.1-3. Lake Elsinore Shoreline Zone Identification
Source: City of Lake Elsinore

Table 4.16.1-4. City of Lake Elsinore Revenues from Sale of Lake Day Use Passes (2004)

Location	Revenue
Bedrock RV Park	$ 70.00
Cranes Lakeside Park	11,900.00
Elsinore West Marina	83,300.00
Hardin Marine Arrowhead	350.00
Newport Boats	700.00
Playland RV Park	5,950.00
Pyramid Enterprises	104,979.00
The Outhouse	1,050.00
Weekend Paradise	5,600.00
Total	$ 213,899.00

Source: City of Lake Elsinore

As indicated in the "Lake Elsinore Master Plan/Economic Feasibility Study (1995-2015)" (Lake Master Plan): "During the previous decades, Lake Elsinore was used for recreational boating, fishing, swimming and camping by thousands of people from the Los Angeles, Orange County and San Diego areas. There were reported to be as many as 1,000 to 1,200 boats on the lake and along its shoreline at any one time. In more recent times, with the development of many first class recreational complexes in southern California, and with the ongoing problems of water quality and either a lake water level that was too high or too low, most of the earlier recreational crowd from nearby counties have chosen to go elsewhere. . .Presently, there is minimum boat access to the lake by use of launch ramps when water levels exceed 1240 feet; there are no marinas for the berthing of boats; and there are minimum recreational and commercial facilities along the lake's shoreline."[1] Roughly 95 percent of the use of Lake Elsinore has been from some form of power boating.[2]

The planned lake operating level is between 1240 and 1249-feet above msl. When the lake is at a level of 1245-feet above msl, there is approximately 3,000 water surface acres available for boating operations, plus approximately 80 acres of water surface area available for water ski school concessions and competition boating special events within the San Jacinto channel. Of the 3,000 acres of surface area available for boating activities in the main lake, 2,236 acres are with the "active zone" (5-40 mph and designated high speed zone), while the remainder is within the lake's perimeter five mph "no wake" zone." A maximum water use capacity of 1,200 boats at one time is recommended after the lake has been improved in accordance with the Lake Master Plan. The maximum peak day boat count would be 1,560 boats. A "water access improvement plan" and "development of lakefront facilities" is recommenced to support the maximum boating capacity and lake access improvement plan.[3]

As indicated in the Lake Master Plan, in order to initiate the active recreational use of the lake and encourage private-sector participation in the lake's development, the City of

[1]/ City of Lake Elsinore (Noble Consultants, Inc.), Lake Elsinore Master Plan/Economic Feasibility Study (1995-2015), September 16, 1994, p. I-1.
[2]/ Ibid., pp. III-4 and III-5.
[3]/ Ibid., pp. I-2 through I-4.

Lake Elsinore recommended that initial development of proposed lakefront facilities be prioritized in the following order: (1) public boat launch ramp that can accommodate the range in design lake water levels and that has sufficient adjacent boat trailer/car parking and other necessary improvements; (2) special events area that can successfully promote and stage professional-level competition boating events; (3) swimming beach area with sufficient support facilities for families to truly enjoy the recreational beachside activities provided by the lake; (4) marina boat berthing facility with supporting landside marine concessions and a restaurant for the general public's enjoyment of waterfront boating activities; (5) improvement of either the existing City park and campgrounds or the existing Elsinore West Marina RV park and campgrounds to allow for enhanced waterside camping sites for the general public and to provide additional boat launching, beach, and marina facilities; (6) development of recreation island as a world-class destination resort in combination with a marina, swimming beach, parkland, and a youth and group facility for the general public's use; and (7) development of public shoreline areas with pedestrian linear greenbelt walkways, boat beaches, benches, shade structures, and restroom facilities.[4]

Along the eastern perimeter of the lake, it is proposed that the existing 17,800 lineal foot of earthen levee be improved into a linear greenbelt pedestrian walkway for walking, jogging, bicycling, picnicking, and enjoying lake views.[5]

The Lake Master Plan includes a "specific lake management plan" which incorporates conceptual plans for proposed lakefront improvements. With regards to the "Grand Avenue Area," which would include that portion of Lake Elsinore located in proximity to the proposed Santa Rosa Substation, LEAPS Powerhouse, and intake/outlet structures, the Lake Master Plan states: "Grand Avenue, on the southwesterly side of the lake, consists primarily of private residential developments. A majority of this shoreline is within the County of Riverside boundaries, which includes three homeowners associations and four commercial developments. Three of the commercial properties are RV parks, while the fourth is a boat sales/repair facility. The old military academy is located between the lakefront and Grand Avenue just within the City limits near the Riverside Drive end of Grand Avenue. Due mainly to private residential properties and limited public lake access along Grand Avenue, the only proposed lakefront improvements is to the approximately 40-acre parcel of land consisting of the old Military Academy and adjacent vacant land parcel, referred to as the Nautical Center. . .In addition, a future personal watercraft restricted area and a lake fishing area are identified within the lake adjacent to the Grand Avenue shoreline."[6] The proposed "fishing zone" would be located within the lake at the southeasterly end of Grand Avenue, extending up to the levee and island.

As indicated by the LESJWA: "Lake Elsinore is a eutropic, warm polymictic lake. Its eutrophic condition is sustained by a high rate of nutrient recycling and release from sediments, especially phosphorus that is usually limiting. Several severe fish kills occurred at Lake Elsinore since 1990 due to oxygen depletion. Lake Elsinore's sport

[4]/ Ibid., p. I-6.
[5]/ Ibid., p. I-5.
[6]/ Ibid., p. V-6.

fishery is poor quality as a result of competition with non-game fishes and bird predation. Threadfin shad (non-game fish) are largely responsible for the poor sport fishery since shad compete with young game fishes for food, reduce game fish survival, and attract fish eating birds that prey on young game fish and further reduce their survival. Shad also reduce population densities of large zooplankters that more efficiently harvest phytoplankton algae. This reduced grazing pressure on algae contributes to greater algal densities, instabilities in algae, and oxygen depletions resulting in fish kills."[7]

- **County of Riverside**. Lee (Corona) Lake is located in unincorporated Riverside County and is a man-made reservoir owned by the EVMWD. Boating and fishing are permitted and unimproved launch facilities and boat rental opportunities are available.

  As indicated in the Riverside County General Plan, the "shortage of recreational facilities today is not so much in the quantity of land available, but in the completeness of the development of the recreational facilities within each park."[8]

  That planning document further states that "[t]he County recognizes the need for neighborhood and community parks. Development and operation of such facilities will not be the responsibility of the County" and "[w]hen planning future park sites, consideration will be made to locate new parks adjacent to or in combination with school sites."[9] As a result, the focus of the proposed "recreation plan," within unincorporated County areas, is toward the provision of neighborhood or community serving recreational facilities.[10]

Topography near the Project and local meteorological conditions (known as the Elsinore Convergence) provide suitable conditions for hang gliding. Lake Elsinore is known for providing high-quality hang gliding and paragliding opportunities. Hang gliding is defined by the United States Hang Gliding Association as low-speed, lightweight, unpowered, human flight in devices which are capable of being foot launched and are capable of gliding and soaring flight.

The Elsinore Convergence is the name given to the mixing of the cool, moist ocean air stream from the northwest meeting the warm, dry desert air stream from the southeast. These colliding air streams, or convergence zones, drive air masses up into the atmosphere generally along a defined shear line. Hang glider and parasailing pilots launch into this air space in search of the rising air masses (also known as thermals) that allow pilots to generate ascents of 10,000 or more within minutes of launching.[11]

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[7]/ Fast, Arlo W., Proposed Lake Aeration and Biomanipulation for Lake Elsinore, California, May 2002, p. 2.

[8]/ Op. Cit., County of Riverside Comprehensive General Plan, p. 235.

[9]/ Ibid., p. 241.

[10]/ For the purpose of this exhibit, the terms "neighborhood" and "community" park are assumed to be interchangeable. The two terms are not used herein to suggest any differentiation between those two park types with regards to how any local park district and/or municipality may define or categorize those facilities.

[11]/ As reported, the technique at Lake Elsinore is to launch toward the east off the ridge, travel about 1,000 feet towards Grand Avenue, working the ridge for uplift and if successful, cross back across the ridge line in search of "house" thermals (or predictable thermal locations where typically there is no water, where there are dark surfaces, and ridgelines or spines that cause the thermal to break away from the ground) for a continued flight. Pilots are then afforded the choice of flying in the local area and landing at the Ortega Oaks landing zone or flying "cross country" and landing elsewhere some distance from the launch point. If conditions are not suitable for making it back across the ridge line after launching, a pilot must make preparations for a landing at a suitable site at the bottom of the mountain, typically the Ortega Oaks site; however, depending on where the pilot launched and wind direction, conditions may force the pilot to an alternative landing area, such as Butterfield Elementary School or other open spaces.

The Elsinore Convergence is fairly consistent, reportedly creating suitable conditions for hang gliding about 300 days a year. The area has an estimated total use of 500 users per year, 100 of which are regular and consistent users. Presently, hang gliders aloft at a number of ridgeline locations along South Main Divide Truck Trail within close proximity of the two possible upper reservoir sites. In the Lake Elsinore area, parachuting and gliding activities are conducted from Skylark Airport.

4.16.2 Recreation Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's regulatory setting.

- Federal Power Act. Section 4(e) of the FPA (16 U.S.C. 797[e]) provides, in part: "In deciding whether to issue any license under this subchapter for any project, the Commission, in addition to the power and development purposes for which licenses are issued, shall give equal consideration to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of, fish and wildlife (including related spawning grounds and habitat), the protection of recreational opportunities, the preservation of other aspects of environmental quality."

- Federal Water Project Recreation Act of 1965. The Federal Water Project Recreation Act of 1965 (PL 89-72) reestablished recreation as a full project purpose, directing that full consideration be given to the outdoor recreation opportunities, if any, of any Federal navigation, flood control, reclamation, hydroelectric, or multipurpose water resource project. The act also placed additional requirements on recreation as a project purpose, defining the basis for sharing financial responsibilities in joint development, enhancement, and management of recreation and fish and wildlife resources of Federal water projects. This act further requires beneficiaries to bear part of the costs of operating and maintaining recreation developments at Federal water resources projects.

- Electric Consumers Protection Act of 1986. Under the Electric Consumers Protection Act of 1986 (PL 99-495) (ECPA), which amended the FPA, both power and non-power aspects must receive equal consideration in determining the best use of the water resource. The ECPA required that FERC give equal consideration to environmental concerns, such as protecting fish and wildlife and enhancing recreation and conservation, as well as energy concerns, in making licensing and relicensing decisions.

- Code of Federal Regulations. FERC is required to evaluate the recreational resources of all hydropower projects under Federal license or applications and seek, within its authority, the ultimate development of these resources, consistent with the needs of the area to the extent that such development is not inconsistent with the primary purpose of the project. Reasonable expenditures by a licensee for public recreational development pursuant to an approved plan, including the purchase of land, will be included as part of the project cost (18 CFR 2.7).

- Executive Order 12962. Under Executive Order 12962, as signed by President Clinton on June 7, 1995, all Federal agencies are instructed to revise and increase their efforts

toward recreational fisheries in order to provide for increased recreational fishing opportunities nationwide. As specified therein: "Federal agencies shall, to the extent permitted by law and where practicable, and in cooperation with States and Tribes, improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities by: (a) developing and encouraging partnerships between governments and the private sector to advance aquatic resource conservation and enhance recreational fishing opportunities; (b) identifying recreational fishing opportunities that are limited by water quality and habitat degradation and promoting restoration to support viable, healthy, and, where feasible, self-sustaining recreational fisheries; (c) fostering sound aquatic conservation and restoration endeavors to benefit recreational fisheries; (d) providing access to and promoting awareness of opportunities for public participation and enjoyment of U.S. recreational fishery resources; (e) supporting outreach programs designed to stimulate angler participation in the conservation and restoration of aquatic systems; (f) implementing laws under their purview in a manner that will conserve, restore, and enhance aquatic systems that support recreational fisheries; (g) establishing cost-share programs, under existing authorities, that match or exceed Federal funds with non-Federal contributions; (h) evaluating the effects of federally funded, permitted, or authorized actions on aquatic systems and recreational fisheries and document those effects relative to the purpose of this order; and (i) assisting private landowners to conserve and enhance aquatic resources on their lands."

- Americans with Disabilities Act of 1990. The ADA was created to protect the civil rights of persons with disabilities and established requirements to ensure that buildings, facilities, rail passenger cars, and vehicles are accessible, in terms of architecture and design, transportation, and communication, to individuals with disabilities. Titles II and III of the ADA apply to licensee's recreation facilities and requires public and private entities which have "public accommodations" to be accessible to persons with disabilities. FERC requires new facilities and accessible areas to comply with ADA requirements.

  The term "place of public accommodation" as a facility, operated by a private entity, whose operations affect commerce and fall within at least one of twelve specified categories. The term "public accommodation" is reserved for the private entity that owns, leases (or leases to), or operates a place of public accommodation. It is the "public accommodation" and not the "place of public accommodation" that is subject to the regulation's nondiscrimination requirements. Both "places of recreation" and "places of exercise or recreation" are specifically listed among the twelve "public accommodations."

  On October 18, 2000 (65 FR 62498), the Architectural and Transportation Barriers Compliance Board issued final accessibility guidelines (36 CFR Part 1191) to serve as the basis for standards to be adopted by the Department of Justice for new construction and alterations of play areas covered by the ADA. The guidelines include scoping and technical provisions for ground-level and elevated play components, accessible routes, ramps and transfer systems, ground surfaces, and soft contained play structures. The guidelines are intended to ensure that newly constructed and altered play areas meet the

requirements of the ADA and are readily accessible to and usable by individuals with disabilities.

The design of public recreational facilities must conform to the Americans with Disabilities Act of 1990 (42 U.S.C. 12101-12213) (ADA) accessible requirements and, where applicable, with the Architectural Barriers Act of 1968 (42 U.S.C. 4151 et seq.) (ABA), "Americans with Disabilities Act Standards for Accessible Design" (28 CFR Part 36), "Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines,"[12] and the "Uniform Federal Accessibility Standards."[13] In 1993, the USDA Forest Service's policy on accessibility to comply with ADA requirements was provided in the "Universal Access to Outdoor Recreation: A Design Guide" (PLAE Inc., 1993).

On May 22, 2006, the USDA Forest Service issued a final directive (71 FR 29288-29301) amending FSM 2330 (Publicly Managed Recreation Opportunities) in order to ensure that new or reconstructed developed outdoor recreation areas on NFS lands are developed to maximize accessibility, while recognizing and protecting the unique characteristics of the natural setting. The amendment guides USDA Forest Service employees regarding compliance with the "Forest Service Outdoor Recreation Accessibility Guidelines" (FSORAG) and directs that new or reconstructed outdoor developed recreation areas in the NFS, including campgrounds, picnic areas, and outdoor recreation access routes, comply with agency guidelines and applicable Federal accessibility laws, regulations, and guidelines. The USDA Forest Service's guidelines are in two parts, the FSORAG and the "Forest Service Trail Accessibility Guidelines" (FSTAG).

- California Health and Safety Code. As stipulated in Section 115825(a)-(b) of the H&SC, it is the policy of the State that multiple use should be made of all public water within the State, to the extent that multiple use is consistent with public health and public safety. Except as provided, recreational uses shall not, with respect to a reservoir in which water is stored for domestic use, include recreation in which there is bodily contact with the water by any participant. As specified in AB1144 (Harman), as signed by the Governor on September 26, 2006 and codified as Section 115755 of the Health and Safety Code, effective January 1, 2008, all new playgrounds open to the public and all playgrounds open to the public which were installed between January 1, 1994 and December 31, 1999 shall conform with national playground-related standards set by the American Society for Testing and Materials (ASTM) and the national playground-related guidelines set by the United States Consumer Product Safety Commission (CPSC), as specified.[14] All public agencies and other entities operating playgrounds open to the public shall have a playground safety inspector, certified by the National Playground Safety Institute, conduct an initial inspection for the purpose of aiding compliance with those standards.

[12]/ United States Access Board, Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines, July 23, 2004.
[13]/ General Services Administration, Uniform Federal Accessibility Standards, 1984.
[14]/ AB1144 specifies that the standards shall be at least as protective as: (1) the guidelines in the "Handbook for Public Playground Safety, Publication No. 325, (United States Consumer Products Safety Commission, November 1997); (2) the "Standard Specification for Playground Equipment for Public Use" (ASTM F1487) (American Society for Testing and Materials, 2000); and (3) the "Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment" (ASTM F1951) (American Society for Testing and Materials, 1999).

- California Government Code. As specified in Section 14670.67(a) of the CGC: "Notwithstanding any other provision of law, the Director of General Services, with the approval of the Director of Parks and Recreation and the State Public Works Board, may convey at no financial consideration to the City of Lake Elsinore, subject to an easement for flood and water storage together with any water rights the State may have in the property, and an easement to the Elsinore Valley Municipal Water District for flood and water storage together with any water rights the State may have in the property, upon those terms, conditions, and with the reservations and exceptions that the Director of General Services determines are in the best interests of the State, all the right, title, and interest of the State in that property known as the Lake Elsinore State Recreation Area upon the condition that the property be used for public park and recreation purposes in perpetuity and that park and recreation improvements conform to the Lake Elsinore State Recreation Area General Plan adopted pursuant to Section 5002.2 of the Public Resources Code and current at the time it is conveyed, except that the plan may be amended in accordance with the procedures for amendment of specific plans set forth in Article 8 (commencing with Section 65450) of Chapter 3 of Division 1 of Title 7 if duly noticed public hearings are conducted by the local public agency or agencies prior to adoption. In reviewing any amendment of that plan, the local legislative body shall consider the development criteria of Section 5019.56 of the Public Resources Code. Upon any breach of the conditions of the conveyance, the State may reenter the property, and upon that reentry, the ownership of the property conveyed shall revert to the State."

4.17 Transportation and Traffic

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations, and existing Etiwanda Generating Station and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, transportation and traffic are not further addressed herein.

4.17.1 Transportation and Traffic Environmental Setting

Caltrans' jurisdiction includes right-of-ways of State and interstate routes within California. Any work within the right-of-way of a Federal or State transportation corridor is subject to Caltrans' regulations governing allowable actions and modifications to the right-of-way. Caltrans issues permits to encroach on lands within their jurisdiction to ensure encroachment is compatible with the primary uses of the State Highway System, to ensure safety, and to protect the State's investment in the highway facility. In the general Project area, Caltrans' jurisdiction includes, but may not be limited to, the I-15 (Corona and Escondido) Freeway and SR-74 (Ortega Highway).

In the general area, SR-74 (Ortega Highway)[15] is a two-lane, mountainous State highway with primarily non-standard shoulders and lane widths. SR-74 begins in the City of San Juan Capistrano in Orange County, at the I-5 (San Diego) Freeway, and continues eastward to the City

[15]/ SR-74 is part of the Federal Aid Primary (FAP) system and part of the State freeway and expressway system. Among other uses, Ortega Highway provides interregional access between the employment centers and recreational opportunities available in south Orange County and the residential centers of Riverside County.

of Palm Desert in Riverside County. The western portion of the corridor is dominated by San Juan Creek, which meanders along and crosses the highway at a number of locations. As it climbs through the San Juan Canyon area, the route has sharp curves and steep slopes. SR-74 carries a high traffic volume of trucks with two axles or more during the weekday and recreational travelers on the weekend. Peak-hour traffic volumes currently exceed Level of Service (LOS) "D" design criteria at the Orange/Riverside County line. In 2003, the average annual daily traffic (AADT) was both 8,900 vehicles per day. Trucks with two or more axles compose nearly 10 percent of the daily traffic. The AADT for trucks was 610 vehicles per day in 2002 and 654 vehicles per day in 2003 at the Orange/Riverside County line. For the year 2025, LOS is expected to be at LOS "E," with AADT predicted at 28,700 vehicles per day.[16]

In 2005, Caltrans reported an AADT of 9,500 vehicles/day (Leg A – south of Grand Avenue) and 18,000 vehicle day (Leg B – north of Grand Avenue) on Ortega Highway, at Grand Avenue. Of that traffic, the AADT for trucks was 465 and 1,422 vehicles per day, respectively. [17]

Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) tabulates accident rates for all highways in California. TASAS data from January 2001 through January 2004 indicated that 114 accidents (including 5 fatalities and 53 injuries) occurred within the approximately 3-mile segment of SR-74 proposed for improvement under the SR-74 safety improvement project. That three-year improvement project commenced construction in 2007. The accident rate for that segment of Ortega Highway was over 60 percent higher than the average accident rate occurred on highways of similar traffic volumes and similar road conditions.[18]

The Southern California Chapter of the American Public Works Association's (SCCAPWA) "Work Area Traffic Control Handbook"[19] (WATCH) provides guidance for the setup and operation of all work areas occupying public streets and sets forth basic principles and recommended standards to be observed by all those who perform work in a public street.

Caltrans' "Manual of Traffic Controls for Construction and Maintenance Work Zones" provides guidance on traffic controls in work areas. As indicated therein: "During any time the normal function of a roadway is suspended, temporary traffic control planning must provide for continuity of function (movement of traffic, pedestrians, bicyclists, transit operations, and access to property/utilities). The location where the normal function of the roadway is suspended is defined as the work space. The work space is that portion of the roadway closed to traffic and set aside for workers, equipment, and material. Sometimes there may be several work spaces within the project limits. This can be confusing to drivers because the work spaces may be separated by several miles. Each work space should be signed to inform drivers of what to expect. Effective temporary traffic control enhances traffic operations and efficiency, regardless of whether street construction, maintenance, utility work, or roadway incidents are taking place in the work space. Effective temporary traffic control must provide for the workers, road users,

[16]/ California Department of Transportation, Negative Declaration/Finding of No Significant Impact, State Route 74 Safety Improvement Project from San Juan Canyon Bridge to Orange/Riverside County Line, Orange County, California, October 13, 2005, pp. 28-29.
[17]/ California Department of Transportation, 2005 Annual Average Daily Truck Traffic on the California State Highway System, November 2006, p. 114.
[18]/ Op. Cit., Negative Declaration/Finding of No Significant Impact, State Route 74 Safety Improvement Project from San Juan Canyon Bridge to Orange/Riverside County Line, Orange County, California, p. 30.
[19]/ Southern California Chapter of the American Public Works Association, Work Area Traffic Control Handbook, Eighth Edition, Uniform Practices and Utility Coordination Committee, BNI Publication, 1996.

and pedestrians. At the same time, it must provide for the efficient completion of whatever activity suspended normal use of the roadway. . .Traffic control plans may be adopted by the authority of a public body or official having jurisdiction for guiding traffic. The plans and devices should follow the principles set forth in this Manual but may deviate from the typical drawings to allow for conditions and requirements of a particular site or jurisdiction as determined by the engineer."[20]

As described in the Federal Highway Administration's (FHWA) "Part VI Standards and Guides for Traffic Controls for Street and Highway Construction, Maintenance, Utility and Incident Management Operations," a component of the "Manual on Uniform Traffic Control Devices"[21] (MUTCD), traffic control plans (TCPs) can play an important role in providing continuity of safe and efficient traffic flow, to the extent interruptions in normal flow are necessary for temporary traffic control operations or other events that temporarily disrupt normal traffic flow. The TCP describes traffic controls to be used for facilitating vehicle and pedestrian traffic through a temporary traffic control zone.[22]

4.17.2 Transportation and Traffic Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's regulatory setting.

- Executive Order 11644. Executive Order 11644 (Use of Off-Road Vehicles on the Public Lands), as issued on February 8, 1972 and as amended by Executive Order 11989 (May 24, 1977) directs the USDA Forest Service to promulgate regulations that provide for designation of trails and areas for off-road motor vehicle use. USDA Forest Service rules (35 CFR Part 295) codify the requirements in those executive orders by providing for administrative designation of areas and trails on NFS lands where motor vehicle use is allowed, restricted, or prohibited. In recognition of multiple recreational demands, in September 2004, the USDA Forest Service proposed revisions to USDA Forest Service rules (36 CFR Parts 212, 251, 261, and 295) to provide for a system of NFS roads, NFS trails, and areas on NFS lands designated for motor vehicle use.

  On November 9, 2005 (70 FR 68264), the USDA Forest Service adopted a final rule (Designated Routes and Areas for Motor Vehicle Use) revising regulations (36 CFR 212, 251, 261, and 295) regarding travel management on NFS lands to clarify policy related to motor vehicle use, including the use of off-highway vehicles (OHV). The final rule requires designation of those roads, trails, and area that are open to motor vehicle use.

  Designations shall be made by class of vehicle and, if appropriate, time of year. The final rule prohibits the use of motor vehicles off the designated system, as well as use of motor vehicles on routes and in areas that are not consistent with the designation. As indicated

[20]/ California Department of Transportation, Manual of Traffic Controls for Construction and Maintenance Work Zones, Revision 2, December 1996, Section 5-01.1 (Introduction).
[21]/ United States Department of Transportation, Federal Highway Administration, Manual on Uniform Traffic Control Devices for Streets and Highways, 2003 Edition.
[22]/ United States Department of Transportation, Federal Highway Administration, Part VI Standards and Guides for Traffic Controls for Street and Highway Construction, Maintenance, Utility and Incident Management Operations, September 3, 1993, Section C (Temporary Traffic Control Element).

therein, a "temporary road or trail" is not NFS roads and may not be designated or included in the "forest transportation atlas." Temporary roads are used for emergency purposes or authorized by contract, permit, lease or other written authorization for a particular time frame and then decommissioned. Motor vehicle use of a temporary road is excepted from designation (36 CFR 215.51[a][5] and [a][8]).

- National Forest Management Act of 1976. The NFMA authorizes the Secretary of Agriculture to issue regulations implementing provisions and specifying guidelines for the development of resource management plans for lands in the NFS (16 U.S.C. 1604[a]). These guidelines are to take into account a variety of economic and environmental considerations, including ensuring that timber will be harvested only where watershed conditions will not be irreversibly damaged (16 U.S.C. 1604[g][3][E][i]). Roads are to be allowed in the forest to meet transportation needs on an economic and environmentally sound basis (16 U.S.C. 1608).

  In response to concerns about the cost of road maintenance and the impacts of development on watersheds, on February 12, 1999, the USDA Forest Service promulgated "Interim Roadless Rule" (64 FR 7290), preventing the construction of new roads in inventoried roadless areas. The USDA Forest Service initiated final rulemaking to make permanent the prohibition on road building in specified roadless areas. The "Roadless Conservation Rule" (2001 Roadless Rule) was promulgated by the USDA Forest Service on January 21, 2001 (66 FR 3244), prohibiting most new road construction and timber harvesting in inventoried roadless areas.[23] A road was defined as a "motor vehicle travelway over 50 inches wide, unless designated and managed as a trail" (36 CVFR 294.11). The rule also described inventoried roadless areas as generally characterized by several features, including: (1) high quality or undisturbed soil, water, and air; (s) sources of public drinking water; (3) diversity of plant and animal communities; (4) habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land; (5) primitive, semi-primitive non-motorized and semi-primitive motorized classes of dispersed recreation; (6) reference landscapes; (7) natural appearing landscapes with high scenic quality; (8) traditional cultural properties and sacred sites; (9) and other locally identified unique characteristics (66 FR 3272).

  On May 13, 2005, the 2001 Roadless Rule was repealed and the "State Petitions for Inventoried Roadless Area Management Rule" (2005 Rule) was adopted (70 FR 26661). The United States District Court for the Northern District of California, in District Court Decision in California v. USDA (C05-03508) and Wilderness Society v. USDA Forest Service (C05-04038) issued an order on September 20, 2006 stipulating that the USDA Forest Service had violated NEPA and the ESA in adopting the 2005 Rule. The courts subsequently set aside the 2005 Rule and reinstated the 2001 Roadless Rule. Under that ruling, "Federal defendants are enjoined from taking any further action contrary to the Roadless Rule without first remedying the legal violations identified in the Court's opinion of September 20, 2006." In response, the USDA Forest Service issued the

[23]/ Maps showing where inventoried roadless areas are located were presented in the Forest Service's "Forest Service Roadless Area Conservation, Final Environmental Impact Statement, Volume 2" (November 2000).

following action: "Do not approval any further management activities in inventoried roadless areas that would be prohibited by the 2001 Roadless Rule."[24]

Except for Ortega Highway, existing roads within the TRD are illustrated in Figure 4.17.2-1 (Trabuco Ranger District – Route Inventory Maps). Inventoried roadless areas within the TRD are shown in Figure 4.17.2-2 (Trabuco Ranger District – Inventoried Roadless Areas).

- Code of Federal Regulations. In 2001, the USDA Forest Service enacted the Roadless Rule (36 CFR Part 212), essentially prohibiting road construction, reconstruction, and timber harvesting, subject to certain limited exceptions, in inventoried roadless areas. The Roadless Rule replaced forest-by-forest decisionmaking with uniform national protections that the USDA Forest Service determined were necessary to protect the diminishing areas of relatively unspoiled national forest. The CFR contains provisions governing the transportation of hazardous materials, the type of materials defined as hazardous, the marking of the transportation vehicles (49 CFR 171-177), and safety considerations for the transport of goods, materials and substances over public highways (49 CFR 350-399, Appendices A-G).

- California Streets and Highways Code. The California Streets and Highways Code (S&HC) allows utility owners to locate within State highway rights-of-way any structures or fixtures necessary for telegraph, telephone, or electric power lines or of any ditches, pipes, drains, sewers, or underground structures (Section 117). In order to protect public investment in the State highway system and promote the safety of highway users, Caltrans has developed minimum standards for the occupancy and use of State highway ROW for utility facilities. All utility encroachments in State highway ROW shall be designed, installed, and maintained so that traffic disruption and other hazards to highway users are minimized. The design shall be in compliance with Section 309 f the "Highway Design Manual."[25] The S&HC requires permits for the transportation of oversized load on county roads (Sections 117 and 660-72; Section 35780 et seq., CVC) and regulates right-of-way encroachment and the granting of permits for encroachment on State and county roads (Sections 660, 670, 1450, 1460 et seq., and 1480 et seq.).

- California Vehicle Code. The California Vehicle Code defines hazardous materials (Section 353), regulates the highway transportation of hazardous materials, the routes used, and restrictions thereon (Sections 31303-31309), regulates the transport of explosive materials (Sections 31600-31620), regulates the licensing of carriers of hazardous materials and includes noticing requirements (Sections 32000-32053), establishes special requirements for the transportation of inhalation hazards and poisonous gases (Sections 32100-32109), establishes special requirements for the transportation of flammable and combustible liquids over public roads and highways (Sections 34000-34121), regulates the safe operation of vehicles, including those that are used for the transportation of hazardous materials (Sections 34500 et seq.), authorizes the issuance of licenses by the California Highway Patrol for the transportation of hazardous

[24]/ Memorandum from Dale N. Bosworth, Chief, USDA Forest Service to Regional Foresters, Station Directors, Area Directors, IITF Director and Deputy Chiefs, WO Staff Directors, File Code: 1570, September 22, 2006.
[25]/ California Department of Transportation, Highway Design Manual, updated January 4, 2007.

materials including explosives (Sections 2500-2505), and addresses the licensing of drivers and the classifications of licenses required for the operation of particular types of vehicles. The CVC requires the possession of certificates permitting the operation of vehicles transporting hazardous materials (Sections 13369, 15275, and 15278).

- California Health and Safety Code. Section 25160 et seq. of the H&SC addresses the safe transport of hazardous materials.

4.18 Utilities and Service Systems

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations, and existing Etiwanda Generating Station and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, utilities and service systems are not further addressed herein.

As indicated in the State CEQA Guidelines, utilities and service services include wastewater and water supply. Because the Project does not include septic tanks or uses that would generate a substantive impact upon public or private sewer system, wastewater facilities are not further addressed herein. The following discussion of utilities and service systems is limited to potable and non-potable water.

4.18.1 Utilities and Service Systems Environmental Setting

The EVMWD is a subagency and wholesale customer of the Western Municipal Water District (WMWD), a member agency of the Metropolitan Water District of Southern California (MWD). The MWD, WMWD, and EVMWD are separately discussed below.

- **Metropolitan Water District of Southern California**. The MWD is a public agency that provides supplemental imported water from northern California (State Water Project) and the Colorado River to 26 member agencies located in Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties. MWD provides between 45 and 60 percent of the municipal, industrial, and agricultural water used within its 5,200 square mile service area. The remaining water comes from local wells, local surface water, recycling, and from the City of Los Angeles' aqueduct (LAA).[26] As indicated in MWD's "Regional Urban Water Management Plan": "Through effective management of its water supply, Metropolitan fully expects to be 100 percent reliable in meeting all non-discounted non-interruptible demands throughout the next twenty-five years."[27]

- **Western Municipal Water District**. The WMWD provides both potable and non-potable water. Potable water sources available to the WMWD include MWD State Water Project (SWP) water and supplemental water from the City of Riverside. The WMWD has a purchase agreement with the MWD for an initial base demand of 65,298.5 AF, with an initial Tier 1 annual maximum of 58,768.7 AF.

[26]/ Metropolitan Water District of Southern California, Regional Urban Water Management Plan, November 2005, p. I-6.
[27]/ Ibid., p. II-15.

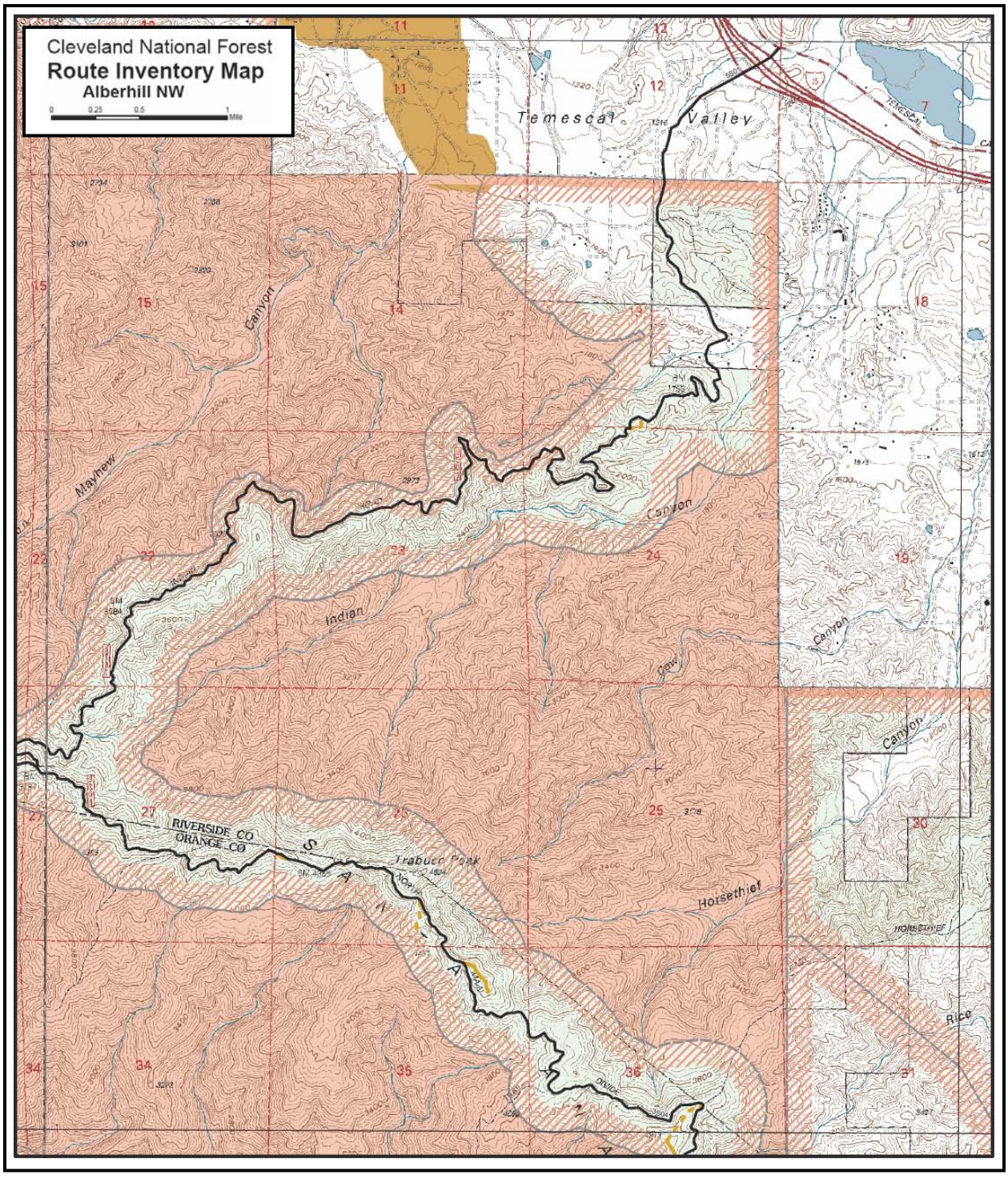

Figure 4.17.2-1. Trabuco Ranger District Route Inventory Maps (1 of 5)
Source: USDA Forest Service

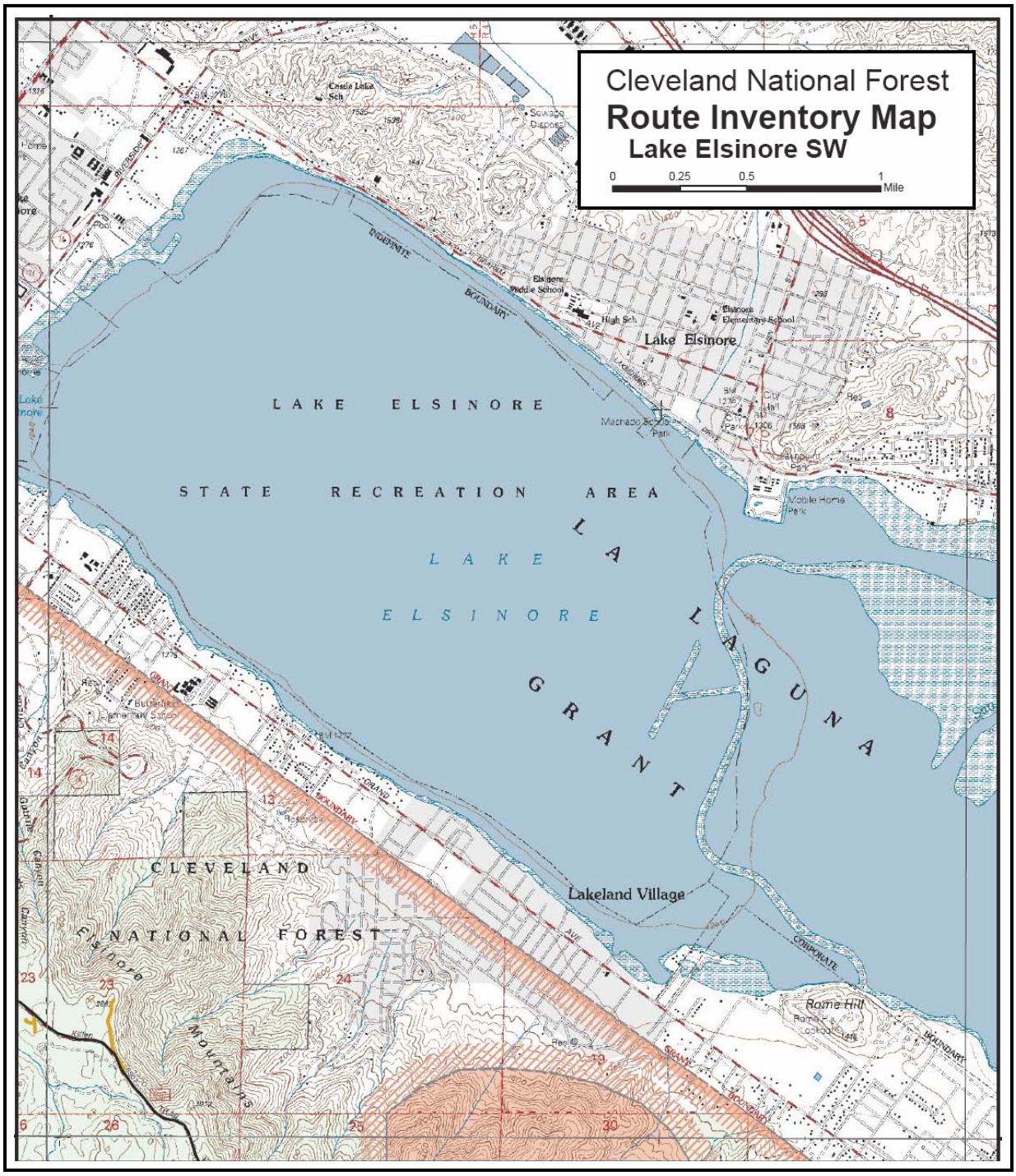

Figure 4.17.2-1. Trabuco Ranger District Route Inventory Maps (2 of 5)
Source: USDA Forest Service

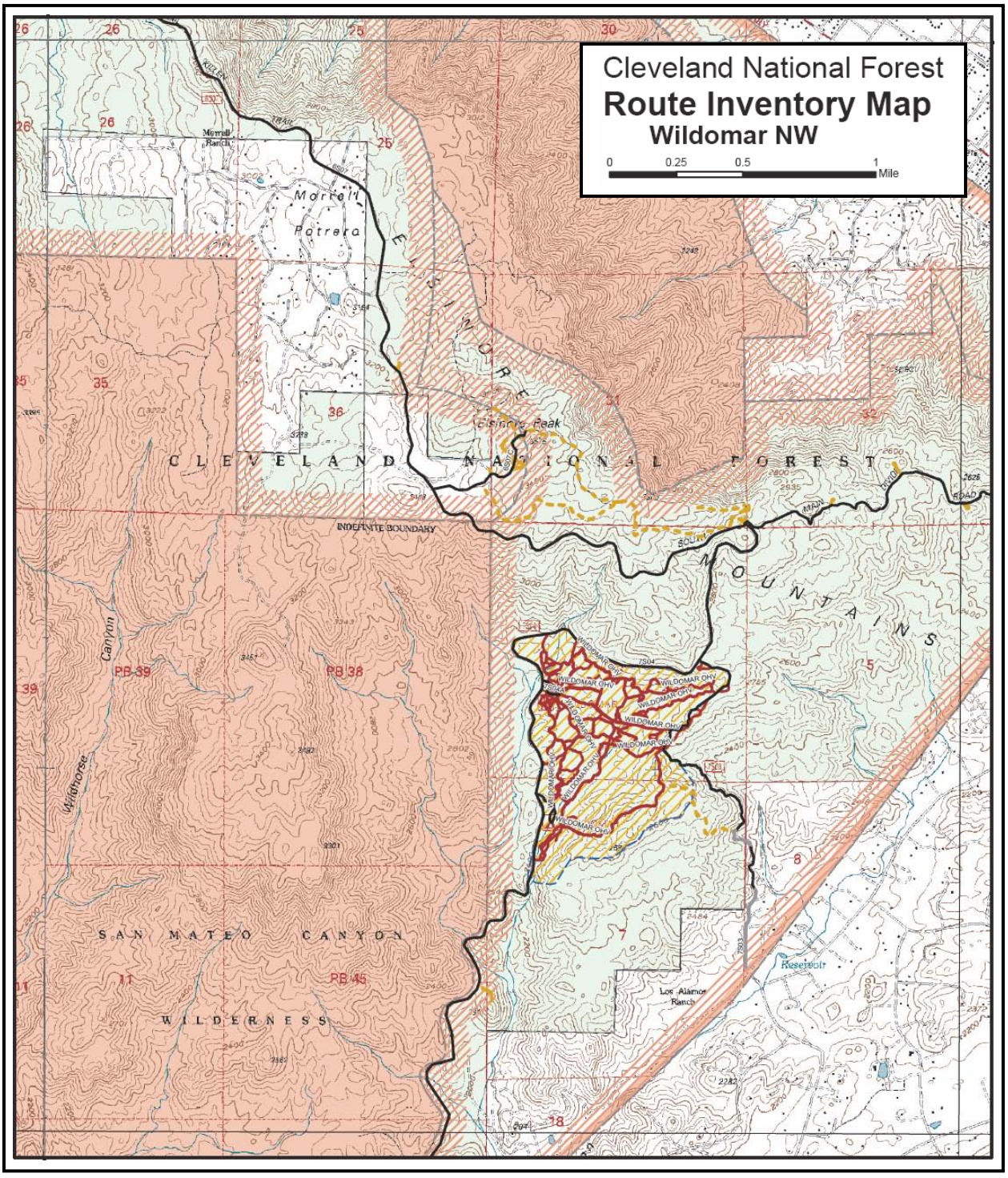

Figure 4.17.2-1. Trabuco Ranger District Route Inventory Maps (3 of 5)
Source: USDA Forest Service

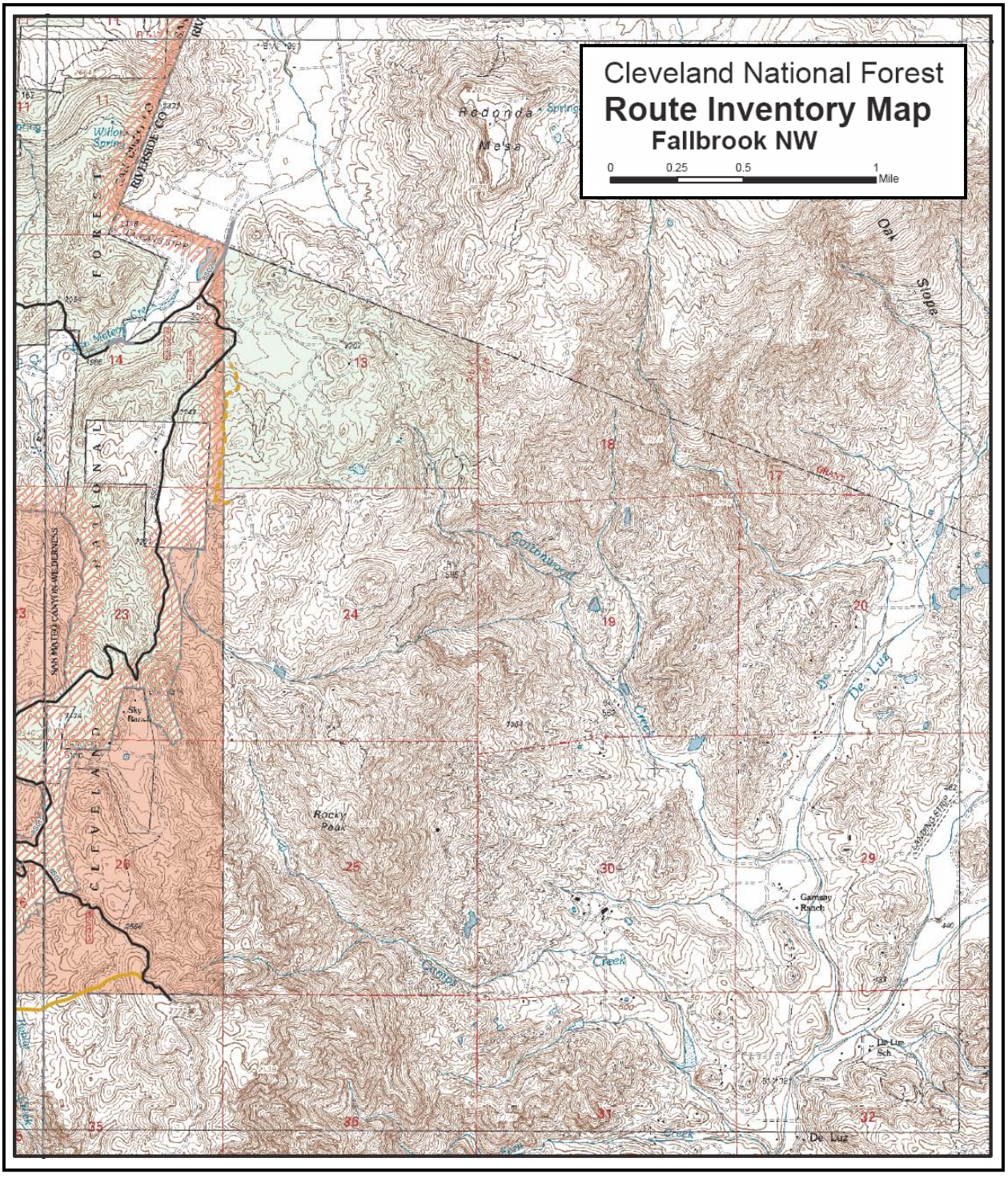

Figure 4.17.2-1. Trabuco Ranger District Route Inventory Maps (4 of 5)
Source: USDA Forest Service

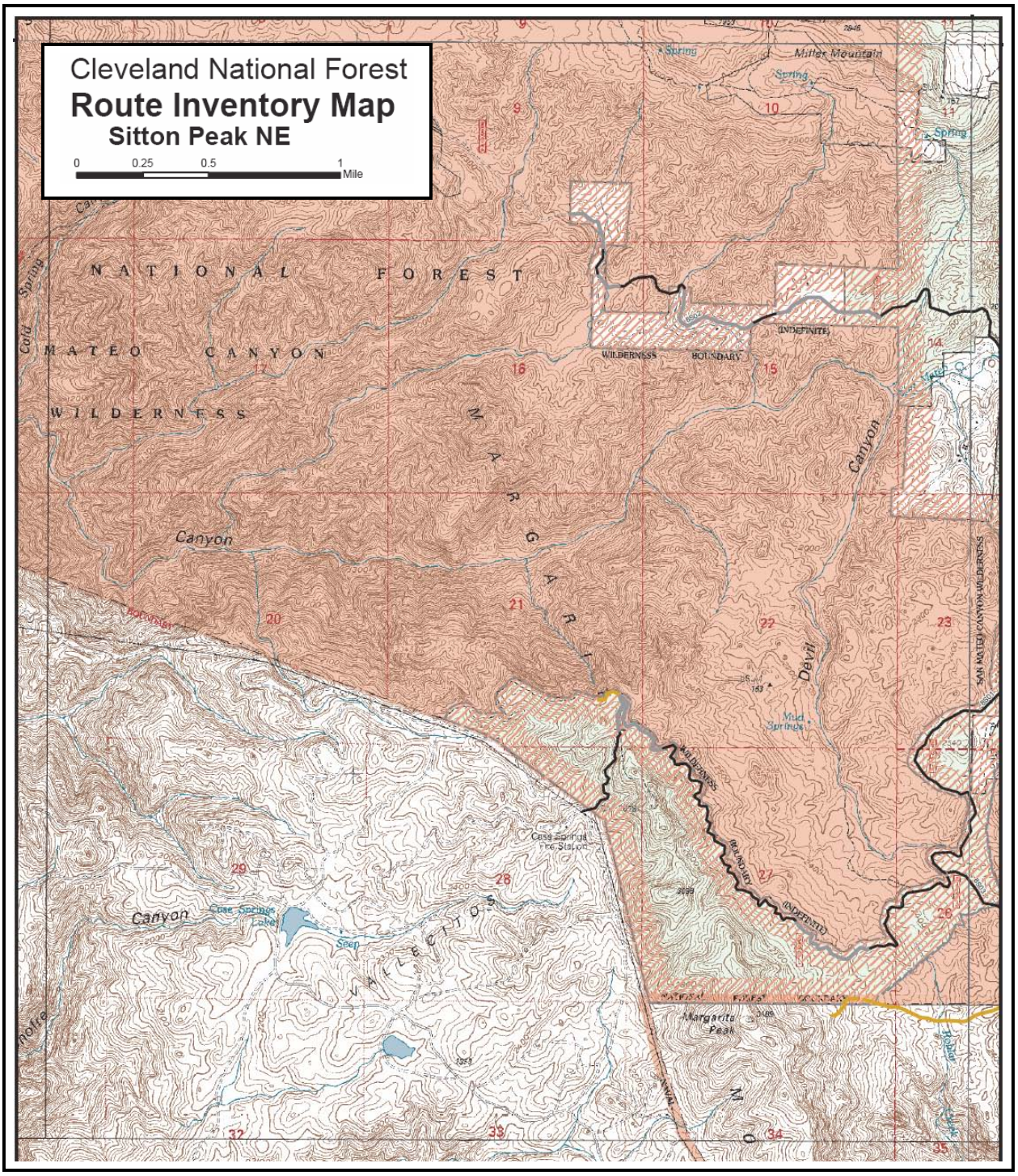

Figure 4.17.2-1. Trabuco Ranger District Route Inventory Maps (5 of 5)
Source: USDA Forest Service

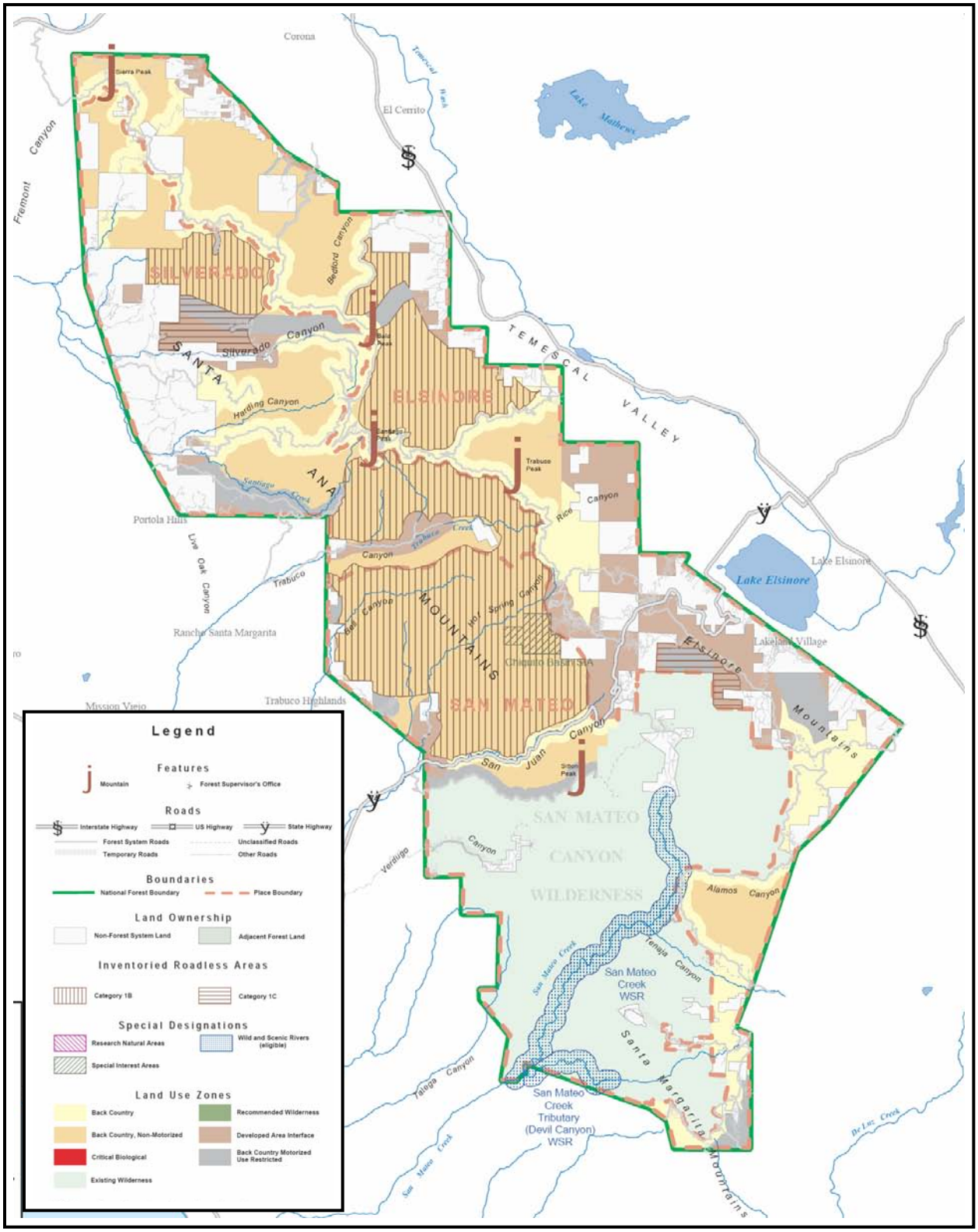

Figure 4.17.2-2. Trabuco Ranger District Inventoried Roadless Areas
Source: USDA Forest Service

The main source of non-potable water are the Colorado River Aqueduct (CRA) and groundwater from the San Bernardino and Riverside area. An intertie with a local irrigation system provides access to an additional 6,000 AFY. The water is pumped from wells and wheeled through canals and pipelines under an agreement with the EVMWD. Non-potable water from the March Wastewater Reclamation Facility is also used for irrigation purposes. Currently, all treated wastewater is used to irrigate the Riverside National Cemetery and the Archie J. Old Golf Course.[28] As indicated in the WMWP's UWMP: "Western has several projects and programs planned to meet the demand."[29]

- **Elsinore Valley Municipal Water District**. As illustrated in Figure 4.18.1-1 (Elsinore Valley Municipal Water District – Service Area),[30] a number of the Project facilities are located within the service area of the EVMWD. As indicated in the Riverside County LAFCO's "Water & Wastewater Municipal Service Review,"[31] as illustrated in Figure 4.18.1-2 (Elsinore Valley Municipal Water District – Water/Supply Demand Forecast), projected water demands within the EVMWD's service area will not exceed projected water supplies through 2025.

  EVMWD's UWMP provides additional information concerning the Project's existing environmental setting and an overview of the EVMWD's current and projected (2030) water supply, demand, conservation methods, and urban water shortage contingency plan. As noted, the Lake Elsinore area is semi-arid, with warm, dry summers and mild winters. Summer temperatures can exceed 100°F but nights are generally cool. Annual precipitation averages 8-12 inches and annual evapotranspiration (ET) averages about 55 inches. Table 4.18.1-1 (City of Lake Elsinore Climate Summary – Temperatures and Precipitation)[32] presents a summary of monthly temperature and precipitation for the Lake Elsinore area based on data spanning 57 years (1948-2005).

  As indicated by the EVMWD: "Except during droughts, the water supply has been adequate to accommodate the rapid growth in EVMWD's service area, even during times of drought when customers curtailed their own water use. EVMWD relies on a combination of local groundwater, surface water, imported water, and recycled water supplies to meet potable and non-potable demands." [33] Between 1992 and 2004, total production from all sources averaged 28,500 AFY. Groundwater production has been relatively stable and averaged about 14,000 AFY. Surface water supplies have been highly variable and dependent on local runoff conditions. Surface water production has ranged from a low of 1,600 AFY (when Canyon Lake was out-of-service) to 7,500 AFY. Imported water purchases averaged 9,600 AFY over that period.[34]

[28]/ Western Municipal Water District, Urban Water Management Plan, 2005, pp. 14-15.
[29]/ Ibid., p. 23.
[30]/ Elsinore Valley Municipal Water District (Kennedy/Jenks Consultants), Alberhill Recycled Water Master Plan – Mitigated Negative Declaration, October 2006.
[31]/ Riverside Local Agency Formation Commission Dudek & Associates), Water and Wastewater Municipal Service Review Report: Western Riverside County and Coachella Vallley – Final Report, February 2005.
[32]/ Ibid., Table 3-2, p. 3-5.
[33]/ Op. Cit., Urban Water Management Plan, Final Report, p. 3-5.
[34]/ Ibid., p. 3-6.

Table 4.18.1-1. City of Lake Elsinore Climate Summary - Temperatures and Precipitation

Month	Temperature (°F)			Precipitation (inches)		
	Mean	Avg Max	Avg Min	Avg	Max	Min
January	51.0	65.3	36.8	2.68	13.94	0.00
February	53.4	67.7	39.0	2.46	11.94	0.00
March	56.3	71/1	41.5	1.79	0.83	0.00
April	60.7	76.4	44.8	0.67	4.27	0.00
May	66.2	82.0	50.3	0.18	2.02	0.00
June	72.7	90.5	54.7	0.02	0.32	0.00
July	78.9	98.0	59.7	0.07	1.67	0.00
August	79.5	98.4	60.7	0.10	3.13	0.00
September	75.2	93.6	56.9	0.24	4.26	0.00
October	66.8	83.9	49.7	0.42	7.66	0.00
November	57.3	73.1	41.6	1.07	7.33	0.00
December	51.4	66.3	36.4	1.65	8.67	0.00
Annual	64.1	80.5	47.7	11.35	23.02	2.71

Source: National Weather Service Cooperative Station 42805 – Elsinore, 1948-2005

EVMWD's existing water supplies are from Canyon Lake, groundwater pumping, and imported water from MWD, via the Temescal Valley Pipeline (TVP) and Auld Valley Pipeline (AVP). A summary of supply capabilities of the existing water sources is presented in Table 4.18.1-2 (Elsinore Valley Municipal Water District – Existing Potable Water Sources).[35]

Table 4.18.1-2. Elsinore Valley Municipal Water District - Existing Potable Water Sources

Water Supply Source	Capacity (mgd)	Average Year (AFY)	Single Dry Year (AFY)	Multiple Dry Years (AFY)	Single Wet Year (AFY)
Canyon Lake (Natural Runoff)	9.0	2,700	700	1,900	6,600
Canyon Lake (Purchased from MWD)	9.0	5,400	7,400	6,200	1,500
Groundwater	13.7	5,500	5,500	5,500	5,500
TVP	12.7	14,190	14,190	14,190	14,190
AVP	24.2	27,100	27,100	27,100	27,100
Coldwater Basin[1]	1.3	700	700	700	700
Total	60.9	55,590	55,590	55,590	55,590

Notes:
1. Limited by the existing demand in the Temescal Domestic Service Area (TDSA). While additional supply and capacity exist, the flow is not available to the Elsinore Division without modifications to existing facilities.

Source: Elsinore Valley Municipal Water District

The location of the EMVWD's potable water sources is presented in Figure 4.18.1-3 (Elsinore Valley Municipal Water District - Location of Existing Potable Water Sources). As illustrated, the EVMWD has nine operating potable groundwater wells, with a total capacity of 13.7 million gallons per day (mgd). Between 2000 and 2005, groundwater supplied 34-45 percent of the EVMWD's potable water demand.

[35]/ Ibid., Table 3-4, p. 3-11.

The EVMWD has access to groundwater from the Elsinore Basin, Temescal Valley basins, San Bernardino Bunker Hill Basin, Rialto-Colton and Riverside-North Basin, and Coldwater Basin. The Elsinore Groundwater Basin is the major source of potable groundwater for the EVMWD, Elsinore Water District (EWD), and other private ground water producers. The groundwater basin covers approximately 25 square miles of valley fill, including Lake Elsinore. The surface water drainage area tributary to the basin consists of approximately 42 square miles of mountain and valley area. Major streams include McVicker Canyon, Leach Canyon, Dickey Canyon, and the San Jacinto River. Figure 4.18.1-4 (Elsinore Groundwater Basin) illustrates the location of this basin, the tributary watersheds that drain into the basin, surrounding streams, and other bodies of water. Water rights for the Elsinore Groundwater Basin are not adjudicated. Approximately 94 percent of groundwater produced by the basin is pumped by the EVMWD. Other groundwater producers include EWD and private well owners.[36]

As indicated in the EVMWD's "Elsinore Basin Groundwater Management Plan" (GWMP) the current sustainable yield of the Elsinore Basin is 5,500 AFY. Due to increased demands, in the absence of groundwater management, current overdraft of the Elsinore Basin is projected to increase from about 4,400 AFY to about 6,500 AFY in 2020. In addition to overdraft, water levels are expected to decline, which could impact water quality and land subsidence in the EVMWD service area. The main objective of the GWMP is to provide a guideline that resolves the overdraft conditions in the basin.[37]

In addition to potable water, the EVMWD serves non-potable water demands for irrigation and to maintain water levels in Lake Elsinore during dry years. Non-potable water demands are met through a combination of ground water, surface water, and tertiary-treated recycled water. EVMWD's recycled water comes from the Regional Water Reclamation Facility (WRF), Railroad Canyon WRF, and Horsethief WRF. The Regional WRF currently has a rated capacity of 8 mgd. As demands increase, the EVMWD anticipates future expansions to an ultimate capacity of 30 mgd.[38] Recycled water supplies do not vary significantly during dry years.[39]

The current NPDES permit for the Regional WRF requires that a minimum of 0.5 mgd of flow be discharged to Temescal Wash for habitat needs. The total recycled water availability from the Regional WRF is projected to be approximately 14.2 mgd in 2030. When necessary, the treated effluent will be used to replenish Lake Elsinore to maintain a minimum lake level of 1240-feet above msl.[40] Under the provisions of a stipulated judgment (City of Lake Elsinore v. Elsinore Valley Municipal Water District),[41] as indicated in the EVMWD's UWMP: "EVMWD must release water into Lake Elsinore when the water surface elevation is less than 1,240 feet. Lake replenishment is only necessary in normal and dry years, as there is sufficient surface runoff in wet years to maintain adequate lake levels. Based on hydrologic analysis prepared for EVMWD and

[36]/ Ibid., pp. 3-12 and 3-13.
[37]/ Ibid., pp. 3-12, 3-22, and 3-24.
[38]/ Ibid., p. 3-20.
[39]/ Ibid., p. 3-6-5.
[40]/ Ibid., p. 3-27.
[41]/ Riverside County Superior Court, Stipulated Judgment – City of Lake Elsinore v. Elsinore Valley Municipal Water District, Case No. 359671, March 1, 2003.

the Lake Elsinore-San Jacinto Watershed Authority, maintaining a level of Lake Elsinore requires an average of about 5,900 acre-feet/year of replenishment water and up to 10,300 acre-feet/year during dry years. . .In March 2005, EVMWD was issued a revised NPDES permit fro the Regional WRF that allow it to treat up to 8 mgd and discharge up to 7.5 mgd into Lake Elsinore for lake stabilization, 0.5 mgd to Temescal Wash for wetland enhancement and any remaining effluent for non-potable use. . .Initially, EVMWD will discharge all available Regional WRF effluent (less 0.5 mgd for wetlands maintenance in Temescal Wash) along with Island Well water to Lake Elsinore. As the available recycled water increases, the amount of Island Well water can gradually be decreased."[42]

By 2030, the recycled water demand in the EVMWD service area is expected to increase to about 14,830 AFY in a normal demand year. During dry years, when the maximum amount of water is required for Lake Elsinore and irrigation demand is high, recycled water usage could increase to nearly 20,050 AFY. If EVMWD's available recycled water supply is insufficient to meet local demand, the District can purchase water from the EMWD or supply potable water to meet these demands.[43]

The EVMWD is currently construction a pipeline (Elsinore Line Replacement Project) that will carry about 4.5 million gallons of recycled water per day from the EVMWD's Regional Wastewater Treatment Plant (Chaney Street, Lake Elsinore) to Wasson Sill, on the north shore of Lake Elsinore. This project involves the installation of approximately 4,000 linear feet of 36-inch diameter ductile iron pipe to replace the existing 30-inch diameter reinforced concrete pipe (RCP) lake discharge line along Temescal Wash.

- **Eastern Municipal Water District**. EMWD generates approximately 38 mgd of effluent at four active regional water reclamation facilities. The amount of effluent is expected to grow to 48 mgd by 2013. Approximately 60-70 percent of the effluent currently generated is sold to agricultural and irrigation users. About 10-15 mgd (11,200 to 16,800 AFY) of effluent is available from EVMWD on an annual basis.

  The EMWD's Temecula Valley Regional WRF has a related capacity of 12 mgd. The EMWD's Temecula Valley Effluent Disposal Pipeline conveys effluent from the Temecula Valley Regional WRF and Rancho California Water District's (RCWD) Santa Rosa WRF to Temescal Wash for disposal. This facility allows EMWD and RCWD to avoid costly nutrient removal facilities required for discharge to the Santa Margarita River. The pipeline passes through the EVMWD's service area.

  Since the EVMWD currently contributes about 1.5 mgd of flow to RCWD, the EVMWD is entitled to this amount of recycled water from that facility. Additional effluent from the Temecula Valley Effluent Disposal Pipeline may be purchased by the EVMWD to meet future recycled demands under existing agreements with EMWD.[44]

[42]/ Ibid., pp. 3-33, 3-34, and 6-9.
[43]/ Ibid., p. 6-9.
[44]/ Ibid., pp. 3-20 and 3-21.

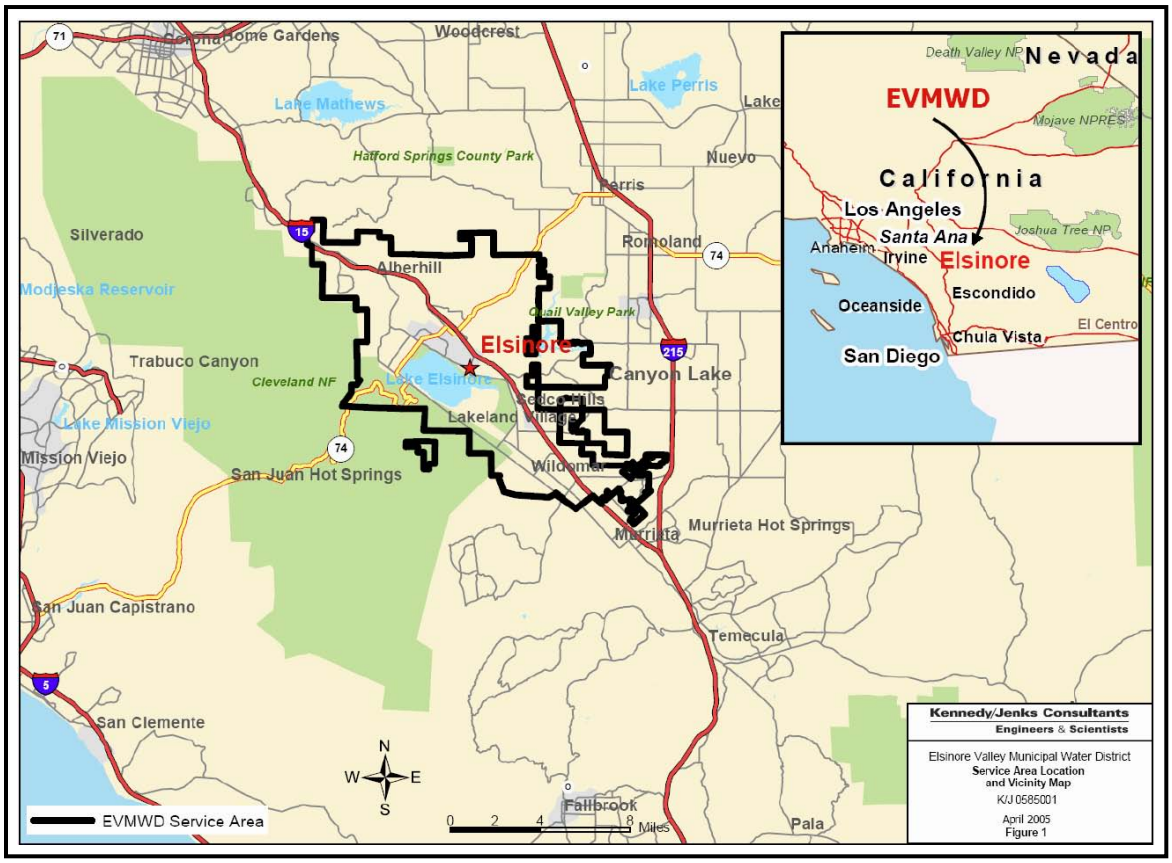

Figure 4.18.1-1. Elsinore Valley Municipal Water District Service Area
Source: Elsinore Valley Municipal Water District

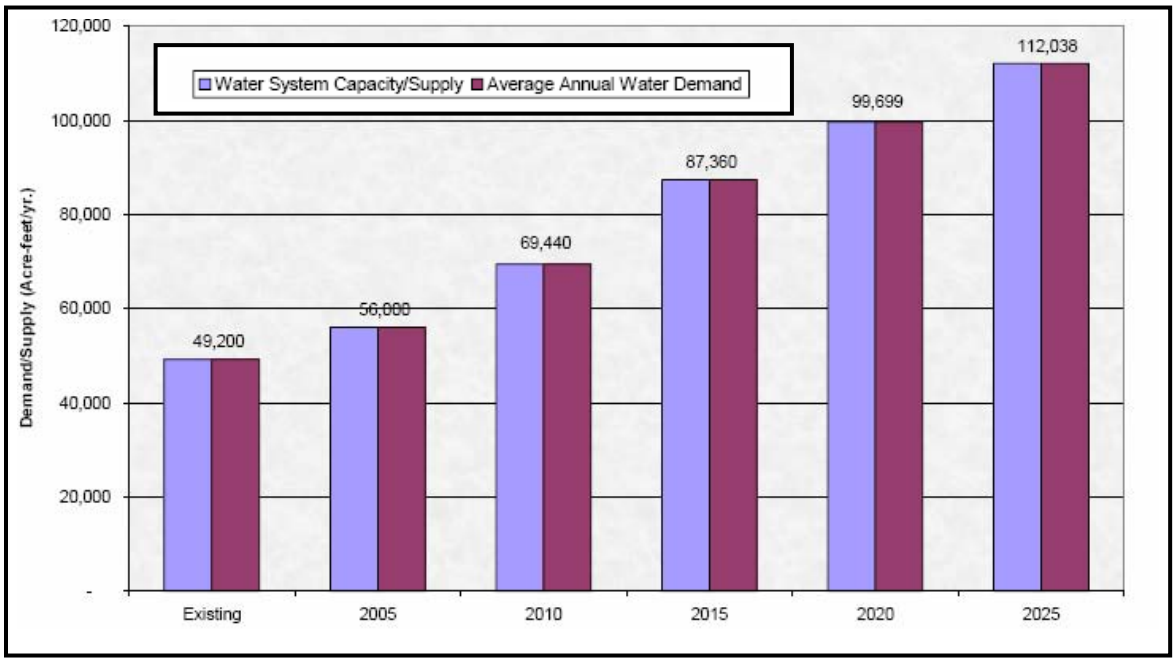

Figure 4.18.1-2. Elsinore Valley Municipal Water District Water Supply/Demand Forecast
Source: County of Riverside Local Agency Formation Commission

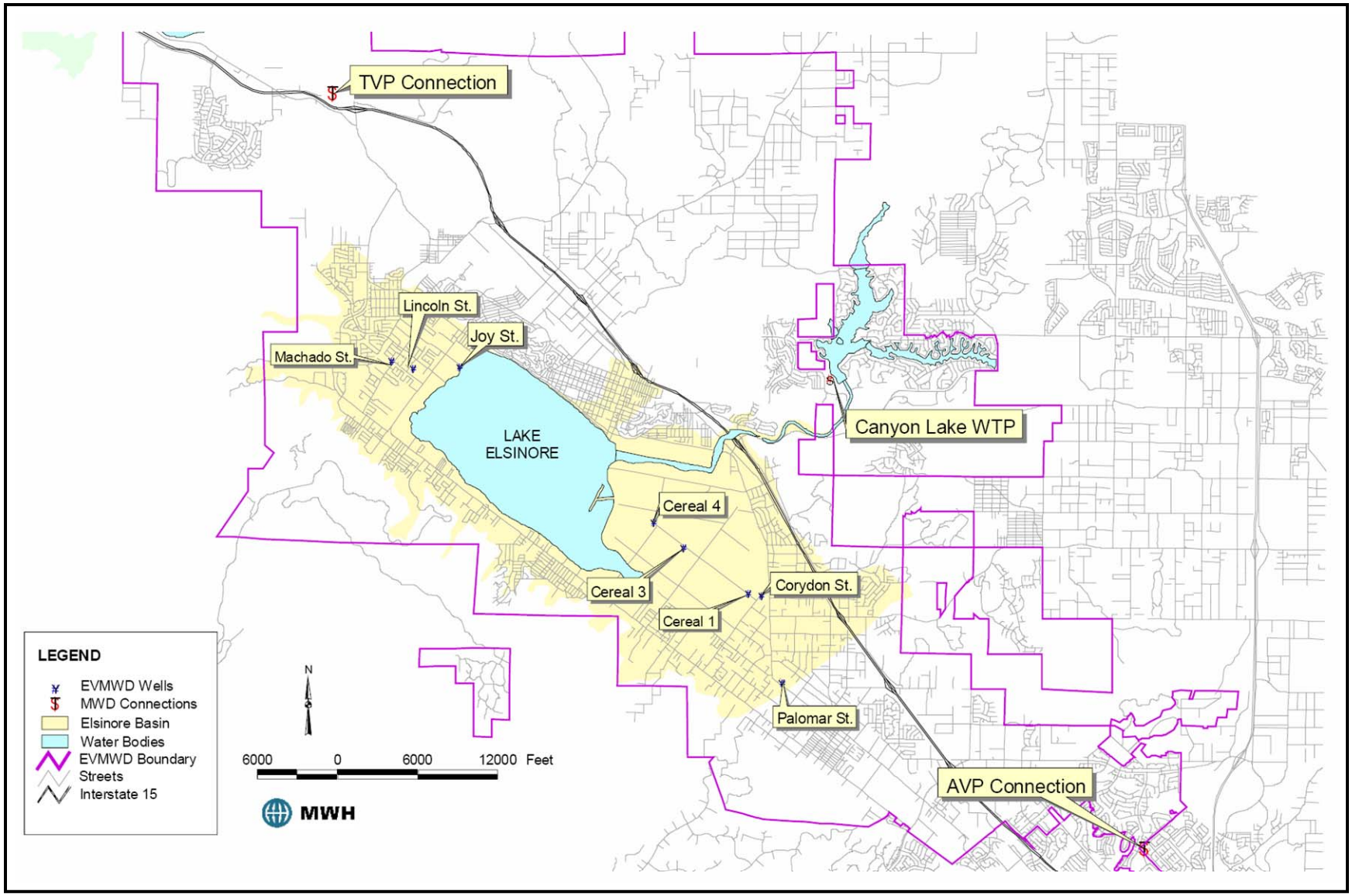

Figure 4.18.1-3. Elsinore Valley Municipal Water District - Location of Existing Potable Water Sources
Source: Elsinore Valley Municipal Water District

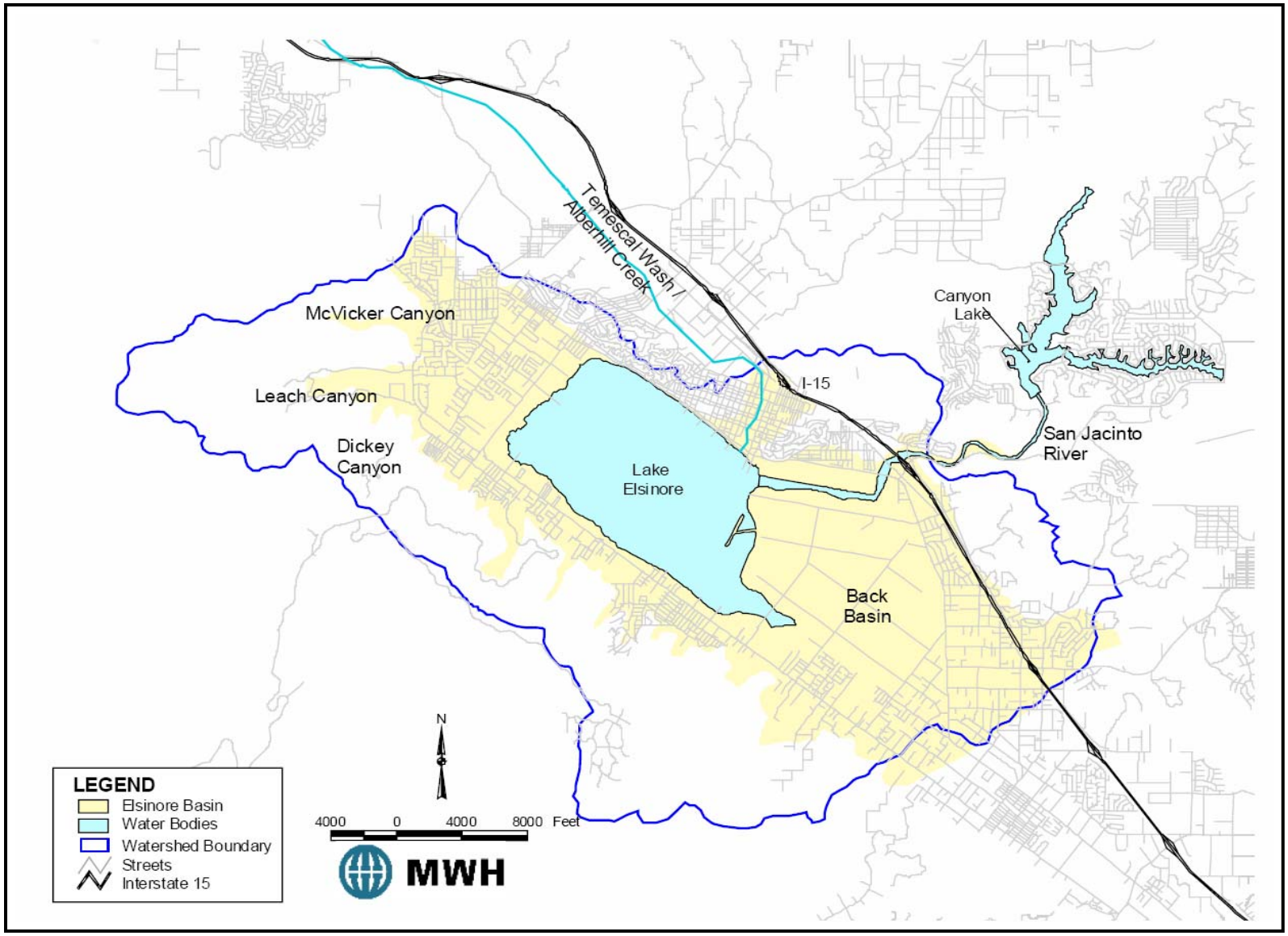

Figure 4.18.1-4. Elsinore Groundwater Basin
Source: Elsinore Valley Municipal Water District

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4.18.2 Utilities and Service Systems Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's regulatory setting.

- Code of Federal Regulations. The provision of potable water and toilet facilities is required under OSHA (29 CFR 1926.51) and Cal/OSHA (Section 1524-1526, CCR) standards. As required by OSHA, during construction, toilets shall be provided for employees according to the following ratio: (1) twenty or fewer employees – one toilet; (2) 20 to 200 employees – one toilet seat and one urinal for each 40 employees; and (3) more than 200 employees – one toilet seat and one urinal for each 50 employees. Typically, "port-a-potties" are brought onto construction sites and are maintained by the firm providing those temporary facilities. Using a vacuum truck, waste materials are then disposed of off those sites in accordance with the permits held by those vendors.

- California Government Code. In recognition of the potential hazards to underground pipelines associated with grading and associated earthmoving activities, the State has imposed certain requirements regarding excavation activities in proximity to existing underground infrastructure.[1]

  As required under Section 4216.2(a) of the CGC: "Except in an emergency, every person planning to conduct any excavation shall contact the appropriate regional notification center, at least two working days, but not more than 14 calendar days, prior to commencing that excavation, if the excavation will be conducted in an area which is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the excavator and, if practical, the excavator shall delineate with white paint or other suitable markings the area to be excavated." As further indicated in Section 4216.9(a) of the CGC: "No permit to excavate issued by any local agency, as defined in Section 4216, or any state agency, shall be valid unless the applicant has been provided an initial inquiry identification number by a regional notification center pursuant to Section 4216.2."[2]

  Compliance with those requirements, which is mandatory for all contractors, ensures that grading activities fully consider and avoid potential impacts upon any "subsurface installation" (i.e., any underground pipeline, conduit, duct, wire, or other structure, except non-pressurized sewer lines, non-pressurized storm drains, or other non-pressurized drain lines) that may exist within the area of proposed ground disturbance.

  Pursuant to Sections 54999-54999.6 of the CGC, subject to specified provisions, a public agency providing public utility service may charge another agency a capital facilities fee or capacity charge in order to pay the capital cost of a public utility facility. "Public utility facility" means a facility for the provision of water, light, heat, communications,

[1]/ Chapter 3.1 (Protection of Underground Infrastructure), Article 3, Sections 4215-4216.9, CGC.

[2]/ As defined in Section 4216(h) of the CGC, a "regional notification center" is defined to mean "a nonprofit association or other organization of operators of subsurface installations which provides advance warning of excavations or other work close to existing subsurface installations, for the purpose of protecting those installations from damage, removal, relocation, or repair."

power, or garbage service, for flood control, drainage or sanitary purposes, or for sewage collection, treatment, or disposal.

- California Water Code. As required under the Urban Water Management Planning Act (UWMPA), codified in Sections 10610-10656 in Division 5 of the California Water Code (CWC), "[e]very urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640)" (Section 10620[a], CWC). As defined therein, an "urban water supplier" is defined as a publicly or privately owned supplier providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 AF of water annually (Section 10617, CWC). Each urban water supplier shall update its plan at least once every five years (Section 10621, CWC).

  Senate Bill 610 (SB610) 610 and Senate Bill 221 (SB221), which became effective on January 1, 2002, amended State law to improve the link between information on water supply availability and certain land use decisions made by cities and counties in California. SB610 and SB221 are companion measures that seek to promote more collaborative planning between local water supplies and cities and counties. The two statutes require that detailed information regarding water availability be provided to decisionmakers prior to approval of specific large development projects and that information be included in the administrative record that serves as the evidentiary basis for an approval action on such projects.[3] Since the Project does not constitute a residential subdivision, do not involve the consumption of potable water, and do not directly involve the use of groundwater, the CEQA Lead Agency is neither required to prepare or request a water supply assessment (WSA) or demonstrate the sufficiency of existing potable water supplies pursuant to the provisions of those bills.

  A foundational document for compliance with both SB 610 and SB 221 is the urban water management plan (UWMP). Both statutes identify the UWMP as a planning document that, if properly prepared, can be used by a water supplier to meet the standards set forth therein. Information concerning the applicable UWMP is, however, presented herein for informational purposes only. The MWD, WMWD, and EVMWD have all prepared and adopted urban water management plans for their respective jurisdictions.

4.19 Energy Resources

Improvements and associated upgrades to SCE's existing Valley, Serrano, San Bernardino, Vista, and Mira Loma Substations and existing Etiwanda Generating Station and SDG&E's existing Talega, Escondido, Peñasquitos, Pala, and Lilac Substations will all occur within the

[3]/ Under SB 221, city or county approval of certain residential subdivisions require an affirmative written verification of sufficient water supply. Under SB 610, water supply assessments (WSAs) must be furnished to local governments for inclusion in any CEQA documentation for certain large projects. Qualifying projects include those that would consume an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project. For those projects, the WSA must be requested from the local water provider by the city or county considering the project at the time the city or county determines whether an EIR, a negative declaration, or a mitigated negative declaration is required under CEQA. The water agency must then provide the WSA within 90 days but, under certain circumstances, may request a time extension. The WSA must include specific information, as detailed in the legislation, including an identification of existing water supply entitlements and contracts. If groundwater is anticipated as a source of water, the assessment must contain additional information. The governing board of the water agency must approve the WSA at a public meeting.

existing "fence line" of those facilities on previously disturbed sites. As such, with regards to those facility sites, energy resources are not further addressed herein.

Because the Project is comprised of both electrical transmission and generation (pumped storage) facilities, the following discussion is limited to electricity.

4.19.1 Energy Resources Environmental Setting

Electricity is not a natural resource, rather it is generated from oil, coal, natural gas, nuclear power, and falling water (hydropower) for the most part, with a small portion generated by alternative resources, such as wind, biomass, geothermal energy, and solar.[4]

With regards to the State's ability to achieve the renewable energy requirements of California RPS, the CEC reports that "the 2010 target of 20 percent of energy deliveries will be extremely difficult to achieve. To make aggressive progress towards that goal will require, most urgently, expedited transmission expansion and establishing a compliance framework for the State's ESPs/CCA [energy service providers/community choice aggregators]."[5]

As further indicated by the CEC: "Nearly four years after the RPS program went into effect, California has made very little progress in bringing new renewable projects on line. Statewide, renewable energy as a percentage of retail sales increased less than 0.6 percent from 2002 to 2005. . .San Diego Gas and Electric has made the most progress in increasing its renewable purchases – moving from 1 percent n 2002 to 5.2 percent in 2005 – but still has far to go to meet the 20 percent goal by 2010. . .Southern California Edison, although furthest along in meeting the 2010 goal, has only increased its renewable generation 0.2 percent between 2002 and 2005, making little progress in the last three years despite the proximity of the Tehachapi Wind Resource Area. . .SDG&E considers the main impediments to meeting RPS goals as: 'the current lack of adequate transmission infrastructure [which] significantly diminishes the utilities' ability to access renewable generation.'"[6]

The Integrated Energy Policy Report Committee states that one of the "main barriers to achieving the State's 2010 RPS goals" is that "transmission access for renewables is not sufficient."[7] The lack of transmission infrastructure to access remote renewable resources is the most critical barrier to meeting California's 20 percent [RPS] target by 2010. Unless California can improve its current transmission planning and permitting process, longer-term transmission projects will suffer from the delays and problems impeding near-term projects.[8]

Transmission has emerged as the primary barrier to achieving the State's renewable energy goals. The CEC reports: "SDG&E has flatly stated it is unlikely to meet its 2010 RPS target without new transmission and SCE has indicated that nearly all of the winning bidders under its

[4]/ Kelly, Suedeen G., et al., Energy Law and Policy for the 21st Century, The Energy Group, 2000, p. 12-1.
[5]/ California Energy Commission [KEMA, Inc.], Summary of the California Energy Commission's Renewables Portfolio Standard Contractor Reports, and the Status of Renewables Portfolio Standard Contracting and Regulations, Consultants Report, CEC-300-2006-012, June 2006, p. 22.
[6]/ California Energy Commission, 2006 Integrated Energy Policy Report Update, CEC-100-2006-001-CMF, January 2007, pp. 7-8 and 11.
[7]/ Ibid., p. 15.
[8]/ Ibid., pp. 17 and 22.

2002 RPS solicitation have been significantly delayed because of lack of transmission."[9] The CAISO has further acknowledged that "renewable power plants are typically located far from populated areas, so they may require new transmission lines to deliver their output to consumers."[10] As further indicated by the CEC: "The acceleration of the State's RPS has highlighted the importance of transmission in developing renewable resources. The development of remote renewable resources requires substantial investments in new or upgraded transmission facilities. Transmission interconnection issues for renewable resources located in concentrated areas such as the Tehachapi wind resource areas and Imperial County's geothermal resource areas are complicated by the number of developers of renewable resources competing for limited transmission capacity and their limited ability to finance large transmission investments. [P]roviding for timely and adequate transmission projects will prove critical to meeting the State's ambitious renewable energy goals."[11]

In 2006, the CEC "initiated a midcourse review of the Renewable Portfolio Standard program because the State did not appear to be on a trajectory to achieve the near-term goal of supplying 20 percent of the State's electricity needs with renewable energy by 2010 and the longer-term goal of 33 percent by 2020. California has achieved only minimal increases in renewable generation. Between 2002, the year in which the Renewable Portfolio Standard took effect, and 2005, the percentage of renewable energy in California's generation mix has remained nearly constant rather than increasing by at least 1 percent per year as required under the statute."[12] One of the "primary barriers" impeding the attainment of the State's RPS goals is "[i]nadequate transmission infrastructure to connect remotely-located renewable resources."[13]

As reported by the United Nations, although modest quantities of emissions may be produced during powerline construction, "the main influence of grid interconnections on air pollutant emissions will be through the impact of transmission interconnections on which power plants are run." Major air pollutant emission benefits will "accrue overall if the emissions from the generation that is used with the interconnection in place is less than the emissions that would have been produced in the absence of the interconnect. Where hydroelectric generation, for example, provides export power through an interconnection and displaces existing or planned fossil-fueled power plants" net emissions benefits will occur.[14]

As indicated in the San Diego Association of Governments' (SANDAG) "Regional Comprehensive Plan: Establishing a Baseline for Monitoring Performance," with regards to the San Diego region: "In-region assets currently provide approximately 60 percent of total capacity needs, through their operation is at less than capacity due to the potential environmental impacts and other factors. The share of energy produced within the region has decreased to roughly 25 percent in 2005. In 1990 and 1995, energy produced in the region remained steady at roughly 34

[9]/ Op. Cit, Summary of the California Energy Commission's Renewables Portfolio Standard Contractor Reports, and the Status of Renewables Portfolio Standard Contracting and Regulations, Consultants Report, p. 14.
[10]/ California Independent System Operator, News Release – California ISO Planning for Boom in Renewable Power, Four-Part Effort Supporting California's Renewable Portfolio Standard, June 14, 2006.
[11]/ California Energy Commission, Upgrading California's Electric Transmission System: Issues and Actions for 2005 and Beyond, 700-2005-018, July 2005, p. 65.
[12]/ California Energy Commission, 2006 Integrated Energy Policy Report Update, Committee Final Report, CEC-100-2006-001-CTF, December 2006, p. E-2.
[13]/ Ibid., p. E-3.
[14]/ United Nations, Multi Dimensional Issues in International Electric Power Grid Interconnections, Department of Economic and Social Affairs, Division of Sustainable Development, 2006, Section 7.2.

percent. In 2000, the share peaked at approximately 40 percent as a result of the energy crisis because local large-scale power plants and smaller generators ran at their maximum capacity. Generally, San Diego's older in-region resources run at partial capacity for air quality, high fuel cost, and other reasons. Since the crisis subsided, smaller, more distributed generators dependent on natural gas have shut down as fuel prices steeply increased in the 2000's. One measure to increase the share of energy produced in the region would be to replace older, less efficient resources."[15]

4.19.2 Energy Resources Regulatory Setting

The following general discussion is presented of certain Federal, State, and local statutes and regulations that may be most applicable to an understanding of the Project's energy resources regulatory setting.

- Executive Order 13212. As indicated in Executive Order 13212, it is the policy of the United States that "[t]he increased production and transmission of energy in a safe and environmentally sound manner is essential to the well-being of the American people. In general, it is the policy of this Administration that executive departments and agencies shall take appropriate actions, to the extent consistent with applicable law, to expedite projects that will increase production, transmission, or conservation of energy." The executive order established an interagency task force to monitor and assist Federal agencies in their efforts to expedite the review or permits or similar actions to accelerate the completion of energy-related projects, increase energy production and conservation, and improve the transmission of energy.

- California Public Utilities Code. Senate Bill 1078, approved by the Governor on September 12, 2002, amended provisions of the PUC (adding Sections 387, 390.1, and 399.25 and Article 16 [commencing with Section 399.11]) and established the California Renewable Portfolio Standards Program. As required therein, each electrical corporation is required to increase its total procurement of eligible renewable energy resources by at least one percent annually so that 20 percent of its retail sales are procured from eligible renewable energy resources. As specified: "Each governing body of a local publicly owned electric utility, as defined in Section 9604, shall be responsible for implementing and enforcing a renewables portfolio standard that recognizes the intent of the Legislature to encourage renewable resources, while taking into consideration the effect of the standard on rates, reliability, and financial resources and the goal of environmental improvement." To qualify as eligible for California's RPS, a generation facility must use one or more of the following renewable fuels: biomass; biodiesel; fuel cells using renewable fuels; digester gas; geothermal; landfill gas; municipal solid waste; ocean wave, ocean thermal, and tidal current; photovoltaic, small hydroelectric (30 megawatts or less); solar thermal; and/or wind.[16]

[15]/ San Diego Association of Governments, The Regional Comprehensive Plan: Establishing a Baseline for Monitoring Performance, revised November 2006., pp. 87-88.
[16]/ Ibid., p. 6.

As specified in the CEC's "Renewable Portfolio Standard Eligibility Guidebook, Second Edition" (RPS Guidebook): "Pumped storage hydro may qualify for the RPS to the extent that: (1) the facility meets the eligibility requirements for small hydro, and (2) the electricity used to pump the water qualifies as RPS eligible. The amount of energy that may qualify for the RPS is the amount of electricity dispatched from the system. The Energy Commission clarifies that pumped storage qualifies for the RPS on the basis of the renewable electricity used for pumping, and that electricity storage facilities will not be certified for the RPS as distinct or separate renewable facilities. A facility certified as RPS-eligible may include an electricity storage device if it does not conflict with other RPS-eligibility criteria, but the storage unit itself will not be separately certified."[17]

As further indicated in the RPS Guidebook: "A new or repowered small hydroelectric facility or conduit hydroelectric facility located within California is not eligible for the RPS or SEPs [supplemental energy payments] if it requires any of the following: (a) A new permit from the State Water Resources Control Board for a new appropriation of water. (2) A new permit or license from the SWRCB for a new diversion of water. (3) An increase in the volume or rate of water diverted if the increase would require a new permit or approval of a time extension petition from the SWRCB. (4) An increase in the volume or rate of water diverted under an existing right, even if such an increase would not require a water right permit or license from the SWRCB."[18,19] LEAPS RPS eligibility may remain subject to CEC determination.

- California Code of Regulations. As stipulated in Appendix F (Energy Conservation) of the State CEQA Guidelines: "The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include: (1) decreasing overall per capita energy consumption, (2) decreasing reliance on natural gas and oil, and (3) increasing reliance on renewable energy resources. In order to assure that energy implications are considered in project decisions, the California Environmental Quality Act requires that EIRs include a discussion of the potential energy impacts of Project, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy."

Energy facilities qualify as one of the potential uses of NFS lands (FSM 2802). The USDA Forest Service is "firmly committed to the development of renewable energy sources" on NFS lands. These lands are already one of the nation's larger sources of hydropower and geothermal energy."[20]

[17]/ California Energy Commission, Draft Renewable Portfolio Standard Eligibility Guidebook, Second Edition, CEC-300-2007-006-CMF, March 2007, pp. 21-22.
[18]/ Ibid., p. 18.
[19]/ "'Appropriation' shall be defined in manner consistent with Water Code Section 1201 to mean the right to use a specified quantity of water from any surface streams or other surface bodies of water or from any subterranean streams flowing through known and definite channels"; and (2) "'Diversion' shall be defined in a manner consistent with Water Code Section 5100(b) to mean the taking of water by gravity or pumping from a surface stream or subterranean stream flowing through a known and definite channel, or other body of surface water, into a canal, pipeline, or other conduit, and includes impoundment of water in a reservoir" (Source: CEC, Draft Renewable Portfolio Standard Eligibility Guidebook, Second Edition, CEC-300-2007-006-CMF, March 2007, p. 22).
[20]/ Testimony of Sally Collins, Associate Chief, United States Department of Agriculture, Forest Service before the United States Senate Committee on Energy and Natural Resources, Renewable Energy on Federal Lands, July 11, 2006.