

5. ENVIRONMENTAL SETTING

5.1 AESTHETICS

5.1.1 Introduction

This chapter describes the existing visual resources within the Miguel–Mission 230kV #2 Project area and provides a summary of public policies pertinent to preserving visual and aesthetic quality. A discussion of parks, recreation, and preservation areas appears in Appendix B.

5.1.2 Setting

Overall, the project area contains diverse visual resources, such as the Mission Trails Regional Park, seven highways/roads eligible for official scenic highway designation, communities primarily comprised of single-family residential housing, county and city parks, golf courses, and the San Diego National Wildlife Refuge Otay-Sweetwater Unit. No Bureau of Land Management (BLM) or U.S. Forest Service lands occur within or near the project area (see Figure 5-1).

Rivers, mountains, ephemeral drainages, vernal pools, riparian woodland, annual grasslands, and large expanses of native coastal sage scrub and chaparral influence the natural visual setting for the project area. Human-built features that influence the visual setting found in the project area include: unincorporated areas of southern San Diego County, the cities of Santee and San Diego, and the Marine Corps Air Station Miramar.

5.1.3 Inventory Methods

There are no formal guidelines for managing visual resources on private, state, or county-owned lands found within the project area. Therefore, the visual inventory was conducted using principles derived from the BLM Visual Resource Management (VRM) 8400 System manuals and modified to accommodate urban, non-BLM managed landscapes. This method provided a consistent inventory process across the project area for public and private lands.

A 3,000-foot-wide study corridor (corridor) (1,500 feet on each side of the existing project right-of-way centerline) was inventoried to document existing visual resources. The study process included analysis of recent topographic maps and aerial photography, contacts with agencies, field reconnaissance surveys, and review of existing literature sources. The result is a consistently inventoried database used to assess visual impacts for the project corridor; see aesthetics impacts in Section 6.1. The inventory consists of the following three major components.

- Regional Setting/Landscape Character Type Inventory
- Viewer Sensitivity Inventory
- Seen Areas

The following subsections define visual resource terminology and describe the specific methods used for conducting the visual resource inventory.

Regional Setting/Landscape Character Types

Analysis of the scenic values of the landscape began with an examination of the region's physiography contained within *Fenneman's Physiography of the Western United States*. Related literature, interviews with agency personnel, and interpretation of recent aerial photography were used to determine the landscape character types for areas crossed by the existing project right-of-way.

The corridor is located within the Lower Californian physiographic province. Physiographic provinces are further divided into sections. These classifications describe the visual character of the landscape at a regional scale. Landscape character types are landscape units of greater detail refined from the regional physiographic province and section classifications. Dominant landform features (e.g., mountains, canyons) typically define landscape character types.

Beyond basic land formations (i.e., vegetation cover, soil color, and any untypical features, such as an abundance of rock outcroppings or unique water features), other landscape features were also observed and noted during field visits to the project area.

Viewer Sensitivity Inventory

The viewer sensitivity inventory documents those areas where viewers could be concerned about changes to the landscape. Three components make up the viewer sensitivity inventory, viewpoints, visual sensitivity, and seen areas/visibility thresholds.

Views from Sensitive Viewpoints

Potentially sensitive viewpoints within the corridor were identified and inventoried. Identification of these viewpoints include recent aerial mapping, discussions with agency officials, review of land use data (existing and proposed), and field reconnaissance. The inventory includes the following types of viewpoints.

- Residences: single-family and multi-family dwellings
- Parks and recreation areas: recreation trails, parks, day-use areas, picnic areas, golf courses, and other public use areas
- Planned parks and recreation areas: parks and recreation areas identified from local planning authorities
- Travel routes: state, county, and local scenic highways and roadways, recreation destination roads
- Cultural sites: National Register-listed sites or districts, or culturally sensitive areas where changes to the landscape could impact the integrity of the site

Figure 5-1
Visual Study Area Map
(not available online)

Visual Sensitivity

Visual sensitivity is a measure of viewer concern for change to the landscape. Visual sensitivity is evaluated and documented based on public concerns, discussions with agency officials, and review of existing agency information. Methods outlined on the BLM VRM 8400 System were borrowed as a guideline to evaluate viewer sensitivity, but were modified to address urban-related viewpoints. The visual sensitivity criteria used for the project's aesthetics impact analysis are shown in Table 5-1.

Table 5-1: Visual Sensitivity Criteria

Criteria	High	Moderate	Low
Use volume ¹	High level of use	Moderate level of use	Low level of use
User attitude ²	High expectations for maintaining scenic quality/visual integrity (e.g., residences, recreation areas, scenic byways)	Users are concerned for scenic quality/visual integrity but are not the main focus of their experience (e.g., golf courses, urban trails)	Areas where the public has low expectations for maintaining scenic integrity. Generally commercial, industrial areas where human-caused modifications already exist in the landscape
Duration of view ³	Fixed or contiguous views (e.g., residences, developed recreation sites, etc.)	Intermediate views (e.g., waysides, overlooks, rest areas, open highway views)	Brief or intermittent views (e.g., highway/interstate views in rolling landscapes)

Table 5-2 illustrates the combinations of the visual sensitivity criteria described in Table 5-1 and the resulting total visual sensitivity level. Results of the total visual sensitivity were reviewed, refined, and carried forward into the visual impacts analysis; see aesthetics impacts in Section 6.1.

¹ Use volume is the number of visits to a particular site by the public.

² User attitude is the expectation or level of concern an individual has toward a particular visual setting.

³ Duration of view is the amount of time spent viewing the subject landscape.

Seen Areas

Mapping of “seen areas,” also known as view shed mapping, is a computer-derived analysis showing areas visible from inventoried viewpoints. A Geographic Information System (GIS)

Table 5-2: Visual Sensitivity Matrix

Use Volume	User Attitude	Duration of View	Total Visual Sensitivity Level
High	High	Long	High
Moderate	High	Moderate	High
Low	High	Moderate	High
High	Low	Short	Moderate
High	Moderate	Moderate	Moderate
Moderate	Moderate	Moderate	Moderate
Moderate	Low	Moderate	Moderate
Low	Moderate	Short	Low
Low	Low	Short	Low

uses point, line, or polygon information to analyze and perform this function. The results of the “seen area” view shed mapping analysis are verified through site visits and other overlay mapping to account for such features as vegetation and localized conditions. The result is a detailed map showing areas visible from inventoried viewpoints.

Viewpoints were inventoried from the Miguel Substation to Fanita Junction. Viewpoints located near Fanita Junction to the Mission Substation were not inventoried because the project would not change the overall appearance of the existing facilities in the right-of-way along this segment.

Visibility thresholds are established zones of visual perception. Essentially, form, line, color, and textures are perceived differently with increasing distance from a viewpoint. With increase in distance, changes in the landscape become less obvious and perception of detail is diminished. Elements of form and line become more dominate than color or texture. The visibility thresholds are defined as follows.

- High Visibility Threshold (0 to 500 feet): This is the distance at which fine details are obvious. Texture and color are vivid and clear. New features, such as transmission lines, would dominate the view.

- Moderate Visibility Threshold (500 to 1,000 feet): This is the threshold where changes in the landscape might be viewed in less detail. Texture, form, and other aesthetic qualities of vegetation are normally perceived in this zone. Fine details and the dominance of the new features, such as transmission lines, diminish.
- Low Visibility Threshold (1,000 to 1,500 feet): This zone is where details of foliage and fine textures cease to be perceptible, small features begin to appear as outlines or patterns, and the dominance of new features, such as transmission lines, further diminish.
- Seldom Seen Visibility Threshold (beyond 1,500 feet): Those areas of the landscape where elements are represented as outlines. Form and line are most obvious. Colors are diminished in most cases due to atmospheric haze, and appear washed out or muted. New features, such as transmission lines, would have no dominance.

These visibility threshold distance zones were selected based on the nature and appearance of the project where new steel or wood transmission poles for the relocation of the existing 69kV/138kV circuits would parallel existing 230kV steel lattice tower structures, modified 138kV steel lattice tower structures, or 230kV replacement steel pole support structures from the Miguel Substation to Fanita Junction.

5.1.4 Inventory Results

Regional Setting/Landscape Character Types

The existing project right-of-way extends 14.6 miles from the Miguel Substation, located near the Sweetwater Reservoir, to the northeastern corner of the project at Los Coches Substation, near Lake Jennings. The project then travels 8.3 miles west from Los Coches Substation to Fanita Junction. The project continues 10 miles southwest from Fanita Junction to the Mission Substation, located 1 mile northwest of the Qualcomm Stadium, which is approximately 5.5 miles northeast of downtown San Diego (refer to Figure 5-1).

The existing project right-of-way traverses narrow alluvial valleys, rolling hills, and foothills. The project would be constructed on existing and relocated transmission towers and poles. The landscape setting of the project area (see Section 5.8) allows for vast and expansive views in the valleys and narrow, limited, and focused within canyons, gorges, and the neighboring foothills near the San Diego River.

There are a comparatively small number of high-sensitivity viewers present along most visible portions of the project area. In addition, SDG&E's existing right-of-way contains existing, large transmission towers, poles, and conductors. As a result, most visual impacts associated with the project are expected to be less than significant (see Section 6.1).

Physiography

The project is located within the Lower Californian Physiographic province. The Lower Californian province is characterized by dissected, westward-sloping granite upland in the northern portion, where the project lies.

The physiographic section described here is limited in the northwest by the Santa Margarita River and to the southeast by the international border between Mexico and the United States. This physiographic section consists largely of rolling upland surmounted by residual hills and small mountain ranges. Deep valleys subdivide the large area or polygonal basins into smaller masses sometimes called ranges or mesas. Some of these are remarkably smooth—even cultivated—but they differ as much in this respect as they do in altitude. Some of the uplands are sloping, their several edges being eroded more or less according to the amount of rate of uplift or perhaps according to the time elapsed since the last uplift. The whole region appears to be composed of fault blocks displaced in different ways and at different times; some of these fault blocks are still moving.

The granite uplands are bordered on the west by a terraced lowland 12 to 18 miles wide and 60 miles long within the limits of the United States. Isolated granite hills rise above this plain, becoming more numerous in the eastern portion of the project, where the plain is gradually lost among spurs and outliers of the granite upland. The plain, with a full height of 800 feet at the inner edge, is preserved only in remnants with a large part of it dissected by transverse mountain streams.

Elevations along the existing project right-of-way range from approximately 1,280 feet, where the line will parallel an existing 230kV transmission line along San Miguel Mountain near the Miguel Substation, and 100 feet above mean sea level (msl) near the Mission Substation.

Starting at the Miguel Substation, the project traverses northward along the slopes of San Miguel Mountain, with a summit elevation of 2,565 feet above msl, and Mother Miguel Mountain with a summit elevation of 1,527 feet above msl. Farther north, the corridor crosses Jamacha Valley and the Cottonwood at Rancho San Diego Golf Club courses.

Continuing north across Interstate 8, the existing project right-of-way rises above some residential neighborhoods nestled against rolling hills and foothills to the northwest of Jamacha Valley. Here, the existing project right-of-way heads north to the Los Coches Substation. The right-of-way travels north from Los Coches Substation, crosses the San Diego River, and then heads west along the southerly boundary of Louis A. Stelzer County Park and crosses Wildcat Canyon. As it continues west, it crosses Moreno Valley, Eucalyptus Hills, the City of Santee, and Santee Lakes Regional Park and Campground. West of Santee Lakes, the existing project right-of-way joins another transmission circuit at Fanita Junction and heads southwest toward the Mission Substation.

Continuing southward along the corridor and north of State Route 52, several canyons are encountered, including Oak Canyon, Spring Canyon, Little Sycamore Canyon, and Sycamore Canyon. The right-of-way transitions southward into the Mission Gorge and the Mission Trails Regional Park and emerges in Mission Valley, both of which contain the San Diego River. Finally, the project commences to the south to the Mission Substation.

Landscape Character Types

To analyze the existing landscape, five general landform features were identified within the project area. These landforms are referred to as landscape character types, such as mountains, foothills, hills, alluvial valleys, and canyons, found within the project area.

General descriptions of vegetation cover and color and of soil color by region within the project area include:

Southeastern Region

This region occurs from Spring Valley to the east of Sunnyside, which is located near Bonita, and consists of a moderate cover of shrub-type vegetation composed of red and brown tones; developed areas include Spring Valley and El Cajon. Landscape character consists of few agricultural fields and prairie landscapes among rolling hills, foothills, and mountains protruding through the valley floor. Darker brown soils present minimal contrast with grasses. Natural areas that occur in the San Diego National Wildlife Refuge Otay-Sweetwater Unit include lush understory vegetation mixed with some taller overstory vegetation along drainages. Topographic relief is prominent, with sharp transitions from drainages to peaks. Occasional round granite boulders protrude from the soft-textured vegetation.

North Central Region

This region occurs from Santee through Eucalyptus Hills and Lakeside to Spring Valley and consists of dry, rocky, sparsely vegetated hill slopes, and valleys with somewhat lush native and ornamental vegetation. Portions of the valleys have agricultural fields and urban development; sparse medium-gray vegetation and light sand-colored hills. Large granite boulders are scattered throughout the undeveloped portions of the landscape. Large shrub types of greens and reds and scattered overstory vegetation are intermixed with tall shrub types. The region is mountainous, with deep valleys and soils that contrast heavily with vegetation. Developed area landscape character consists of introduced ornamental plantings, including a mix of overstory deciduous canopy trees, palms, and evergreen species, among developed and interspersed natural areas. Turf grass and dry rock garden areas are dominant in the developed urban areas. A rolling valley floor is present only in Santee; all other portions lie upon flat valley floors.

Southwestern Region

This region consists of both open, natural landscape contained within the Mission Trails Regional Park and developed urban residential and commercial use areas along Friars Road and Mission Valley. Vegetation within the park consists of several shrub types interspersed with live oak overstory lined with overstory riparian vegetation in the drainages. Mountains within the park area are tightly distributed and fairly prominent in topographic relief. The San Diego River forms the Mission Gorge through the park. Granite rock outcrop occurs near the edge of the gorge, creating a distinct visual environment within the park.

Visual Sensitivity

High, moderate, or low viewer sensitivity levels were assigned to each inventoried viewpoint. Generally, all residences, one cultural site, recreation areas, scenic highways/roads or recreation destination roads were identified as a high; see Aesthetics Supplement at the end of this chapter. Moderate viewer sensitivity typically included general use roadways and planned recreation areas. Low visual sensitivity viewpoints were identified but not carried forward for analysis. Visibility/Distance Thresholds are illustrated in Figure 5-2 (maps 1 through 11) for high and moderate sensitive viewpoints. Following is a discussion for each of the inventoried viewpoint categories found within the visual corridor. These viewpoint categories include residences, planned land use, parks and recreation, scenic highways and recreation destination roads, and cultural sites.

Residences

All existing residences were placed in the “high sensitivity” category due to high viewer concern (user attitude) and long view duration. Residences assessed are located within the City of Santee, the Spring Valley Community, or the City of El Cajon. The residences along the corridor in these cities and communities have high visibility of SDG&E’s existing right-of-way along the north central and southeastern portions of the project.

Planned Land Use

At the time of preparation of this PEA, one approved planned residential land use, the Ferry Ranch subdivision, was identified. It was determined that this planned land use, to be completed after the in-service date for the project, would have only moderate sensitivity levels (based on the Visual Sensitivity Criteria in Table 5-1) because the project would not be noticeable as a new feature to future residences or visitors. Background to seldom seen views from planned residences located in the Ferry Ranch subdivision (located on Oak Creek and Palm Row Drive 1,000 feet south of the corridor) would occur.

Parks and Recreation

Most parks and recreation areas are located near or within the San Diego, Santee, or El Cajon city limits and portions of unincorporated areas of San Diego County. Individual use and large gatherings occur at these locations, resulting in “high viewer sensitivity” (high use volume, high user attitude, and moderate viewing durations). High visibility views of SDG&E’s existing right-of-way occurs from Mission Trails Regional Park, Santee Lakes Regional Park and Campground, Louis A. Stelzer County Park, Lake Jennings County Park, and Cottonwood at Rancho San Diego Golf Club.

Scenic Highways and Recreation Destination Roads

Eligible state scenic highways not yet officially designated include: state routes 52 and 94 and Interstate 8. Eligible County Scenic Roads not yet officially designated include: Willow Road, Willow Glen Drive, and El Monte Road. These highways and roads have high viewer sensitivity due to the moderate to high user attitude, short duration of view, and high user volume. Other high sensitivity travel routes include the recreation destination roads State Route 67, Wildcat

Canyon Road, Lake Jennings Park Road, and portions of Willow Glen Drive north of Singing Hills Country Club. Views of SDG&E's existing right-of-way occur from these travel routes in the high visibility distance zone. Additional moderate sensitivity travel routes include proposed future routes located within or near the City of Santee. These proposed future routes include: State Route 125 through Sycamore Canyon from the north City of Santee boundary to Mission Gorge Road; the State Route 52 corridor as identified in the *City of Santee General Plan, Circulation Element*. Figure 5-2 depicts the specific locations of these existing roads.

Cultural Sites

One cultural site identified as having "high visual sensitivity" is the Old Mission Dam and flume officially listed on the National Register of Historic Places and located within Mission Trails Regional Park. The American Water Works Association designated the Old Mission Dam and flume as a state and national water landmark in 1969. Built about 1807 on the San Diego River, the dam and its flume supplied water to the Mission San Diego de Alcalá, located 5 miles west of the dam. The mission was founded in 1769 by Father Junipero Serra and is the oldest of California's 21 missions. The interpretive pathway and a viewing terrace located at the site draw visitors to the dam with a high user attitude with an associated high use volume resulting in a high sensitivity viewpoint. The project is located approximately 2,000 feet west of the dam and flume in the low to seldom seen distance zone, which is outside of the visual study corridor. For more detail, see Section 5.4.

Seen Areas

Maps were prepared of all sensitive viewpoints (see Figure 5-2). The maps of sensitive viewpoints indicated the visibility from these viewpoints, and also delineated the distance zones from these sensitive viewpoints. Numerous individual residences and residential subdivisions have foreground and middle ground views of portions of the SDG&E's existing right-of-way from these mapped viewpoints.

Where the project crosses eligible but not officially designated scenic highways/roadways, such as Interstate 8, State Routes 52, 67, 94 and Willow Road, Willow Glen Drive, and El Monte Road, foreground and middle ground views of the SDG&E's existing right-of-way occur from sensitive viewpoints. SDG&E's existing project right-of-way is visible in both the foreground and middle ground distance zones from viewers at Santee Lakes Regional Park and Campground, Louis A. Stelzer County Park, Lake Jennings County Park, and Cottonwood at Rancho San Diego Golf Club.

Figure 5-2
Sensitive Views Map Book
(not available online)

5.2 AIR QUALITY

5.2.1 Introduction

This chapter describes current conditions of the air quality in the Miguel–Mission 230kV #2 Project area. Discussions include regulations relevant to the project, climate in the project area, and current criteria pollutant levels in San Diego County.

5.2.2 Regulatory Framework

Federal

The Federal Clean Air Act of 1970, amended in 1977 and 1990, establishes national standards for air quality and sets timelines for their attainment. The Environmental Protection Agency (EPA) is the primary regulator of ambient air quality standards set forth in the Clean Air Act and its associated amendments.

State

The California Air Resources Board (ARB) monitors air quality within the state. In addition to abiding by federal air quality legislation, the state also passed the California Clean Air Act of 1988, which sets more stringent standards than those of the federal Clean Air Act. The California ARB is therefore responsible for monitoring and regulating air quality standards set forth by both the state and federal legislation.

Regional Air Quality Plans

The project would occur within the SDAB, which has 10 active monitoring stations that provide information on ambient concentrations of criteria pollutants and toxic air pollutants. The San Diego Air Pollution Control District (SDAPCD) is the regional governmental agency that provides information through the use of monitoring stations and regulates sources of air pollutant emissions in San Diego County.

5.2.3 Setting

Recent air quality documentation shows that San Diego County is improving its air quality. In the past few years, there has been consistent improvement in the county's primary pollutant, ozone. In 2001, the county recorded two exceedances of the federal one-hour ozone standard. In 2000 and 1999, the county recorded its best air quality years with no exceedances of the federal one-hour ozone standard.

Comparatively, in 1980, San Diego County documented 87 exceedances of the one-hour ozone standard. Additionally, San Diego has not had a Stage I episode (also known as a "smog alert") since 1991 and no Stage II alerts since 1979. Smog (a common name for low-level ozone) alerts are a way of measuring air quality and providing health advisories to the public. A Stage I episode is recorded when smog levels reach 20 parts per hundred million (pphm) or reach 200 on

the Pollution Standards Index (PSI). A Stage II episode is recorded when smog levels reach 35 pphm or 275 PSI.

The EPA has established a new ozone standard, which averages levels during an eight-hour period rather than the highest single hour. San Diego County exceeded the eight-hour ozone standard of 8 pphm on 17 days in 2001. With the exception of ozone/smog, San Diego County met federal air quality standards for all other criteria pollutants (i.e., carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter).

In 2001, the SDAB reported nonattainment of the state standards (the condition where air quality standards for a pollutant are exceeded) for two pollutant criteria, ozone and particulate matter, or PM₁₀ (particulate matter equal to or less than 10 microns in diameter). See Table 5-3.

Air quality in the SDAB is affected by smog transported from the South Coast Air Basin, which consists of Los Angeles, Orange, Riverside, and San Bernardino Counties. In 1998, seven of the nine days that the federal one-hour standard were exceeded resulted from smog from the South Coast Air Basin, while the other two days were primarily a result of local air pollution.

Air Quality Standards

Of the 10 monitoring stations within San Diego County, five are located in the vicinity of the project area.

- Chula Vista Monitoring Station
- El Cajon Monitoring Station
- Kearny Mesa Monitoring Station
- Alpine Monitoring Station
- Downtown San Diego Monitoring Station

Ambient air quality standards have been developed at both the state and federal level. The federal Clean Air Act amendments have designated an air basin as being either consistently within the AAQS (attainment) or consistently outside the standards (nonattainment) within a given time period. The State of California followed the guidelines set by the federal Clean Air Act, set its own more stringent criteria, and also established attainment/nonattainment standards. Table 5-3 depicts the federal and state AAQS and the attainment status of the SDAPCD for the various criteria pollutants for 2001. Table 5-4 details the number of exceedance days of criteria pollutant levels of the state AAQS.

Table 5-3: San Diego Air Pollution Control District Attainment Status as of 2001

Criteria Pollutant	Averaging Time	State Standards		Federal Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	1 hour	.09 ppm	N/Serious	.12 ppm	N/Serious
Carbon monoxide	8 hour	9 ppm	A	9 ppm	A
	1 hour	20 ppm	A	35 ppm	A
Nitrogen dioxide	Annual	--		.053 ppm	A
	1 hour	.25 ppm	A	--	
Sulfur dioxide	24 hour	.04 ppm	A	.14 ppm	A
	1 hour	.25 ppm	A	--	
PM ₁₀	Annual Geometric Mean	30 µg/m ³	N	50 µg/m ³	A
	24 hour	50µg/m ³	N	150µg /m ³	A

CONCENTRATION:

ppm parts per million

µg g/m micrograms per cubic meter

ATTAINMENT STATUS:

N Nonattainment: applies when air quality standards are violated

A Attainment: applies when air quality standards have been achieved

PM₁₀ particulate matter equal to or less than 10 microns in diameter

Table 5-4: Exceedance Days for State Ambient Air Quality Standards in San Diego County from 1996–2000

	Ozone ⁴		Carbon Monoxide ⁵		PM ₁₀ ⁶	
	Number of Exceedance Days	Maximum Hourly Concentration (ppm)	Number of Exceedance Days	Maximum Hourly Concentration (ppm)	Number of Exceedance Days ⁷	Maximum 24-hour Concentration (µg/m ³)
1996	51	.14	0	12.4	Not applicable (N/A)	93
1997	43	.14	0	9.3	N/A	125
1998	54	.16	0	10.2	N/A	90
1999	27	.12	0	9.9	N/A	121
2000	24	.12	0	9.3	N/A	139

5.2.4 Inventory Methods

Information for this subsection was obtained from Internet searches of federal, state, and county websites, and from various public information records.

5.2.5 Inventory Results

Meteorology and Climate

Climate

Climate in the SDAB is generally warm, with light annual rainfall occurring mostly during the winter months. The City of San Diego typically sees mild winters with mean temperatures in the high-50s Fahrenheit (F). Summers bring clear skies and mean temperatures in the low 70s. Annual extreme temperatures range from lows in the upper 40s to highs in the upper 70s.

⁷ The sampling frequency of ozone is continuous (hourly). The state ambient air quality standard for ozone is 9 pphm.

⁵ The sampling frequency of carbon monoxide is continuous (hourly). The state ambient air quality standard for carbon monoxide is 20 ppm.

⁶ Sampling of PM₁₀ is scheduled throughout California for once every 6th day (a 24-hour sample). Therefore, each station has nominally 60 to 61 sampling days per year with additional samples taken for a number of reasons, including co-located quality control sampling. All stations have the same schedule, that is, they all attempt to sample for PM₁₀ on the same days. The number of station-sampling days per county would depend on the number of PM₁₀ stations there. The state ambient air quality standard for PM₁₀ is 50 µg/m within a 24-hour time based standard.

⁷ Not calculated in San Diego County; standards require reporting only whether or not it is in attainment.

Climate plays an important role in the air quality of the SDAB. When cool, moist air from the coast travels toward the higher elevations, a temperature inversion can occur. This inversion layer prevents polluted air from rising and dispersing. According to the SDAPCD, most air quality exceedances are recorded on the lower mountain slopes that experience an inversion layer.

The project generally lies within three distinct climate zones, each of which run roughly parallel to the coastline and move inland. The SDAPCD provided the following climate zone descriptions.

Maritime

The maritime zone extends from the coastline of the Pacific Ocean inland for 3 to 5 miles. Humidity is higher and temperatures are mild. Fog, low clouds, and dampness are common in the maritime zone, resulting in the highest concentrations of mold spores of the three climate zones. Areas within this climate zone experience warm winter days, averaging 65 degrees F, and summer afternoons in the mid-70s range.

Coastal

The coastal zone occurs 5 to 15 miles inland. Afternoons are a bit warmer and nights are a little cooler than in the maritime zone. The prevailing climate 10 miles inland is semi-arid to arid. Mold spore concentrations drop, but dust and particulate matter in the air increase. Much of the City of San Diego (and the proposed project) lies within this zone and experiences frequent summer morning fog and moderate humidity.

Transitional

The transitional zone occurs 15 to 25 miles inland. These areas normally experience a warm, dry climate, but may experience coastal conditions on occasion. The City of Santee and parts of unincorporated San Diego County fall within this zone. Daytime humidity is low, and summer temperatures can reach 100 degrees F. Winter days average 70 degrees, with occasional mornings with frost. The easternmost sections of the project lie within the transitional zone.

Temperatures

The general range of mean temperatures recorded in San Diego County is fairly narrow. The winter months record lows in the upper-40s range, and the spring months record mean temperatures in the low-60s range. Summer months have highs in the upper-70s F range, and fall months record mean temperatures in the mid-60s range. The record high temperature in San Diego County was 111 degrees, in September 1963. The record low was 29 degrees, in January 1949.

Precipitation

The majority of San Diego County's annual rainfall occurs in the winter months. Of the county's mean 10 inches of rain per year, approximately 50 percent falls during the three winter months

(December through February). Only 2 percent of the annual rainfall takes place during the summer months. January and March are the two wettest months, with an average of 1.8 inches of rainfall in each month.

Air Quality

Ozone

Ozone (O₃) is a colorless gas with a strong odor that causes health problems, such as eye irritation, impairment of respiratory function, and cardiac stress. It forms when reactive organic gases from fuel burning (unburned hydrocarbons), solvents, petroleum processing and storage, and pesticide sources react with nitrogen oxide in the presence of sunlight. The AAQS for the state is .09 ppm and the national standard is .12 ppm. The federal standard (over a one-hour averaging period) was exceeded on two days in the SDAB during 2001, and 0 days in both 2000 and 1999. The state standard was exceeded on 24 days during 2000, as compared with higher frequencies during the mid 1990s, such as 51 exceedance days during 1996. The strong presence of industrial emissions and urban vehicular emission in the area, along with high ambient temperatures, contribute to summertime ozone generation and subsequent air quality standard violations. However, frequencies of state and federal ozone violations have been decreasing steadily for the last two decades. (Refer to Table 5-4 for state annual exceedance day data.)

Fugitive Dust

Fugitive dust, also known as PM₁₀, consists of atmospheric particles measuring 10 microns or less in diameter that result from fume-producing industrial and agricultural processes, including smoke, dust, aerosols, sulfates, and nitrates. PM₁₀ occurs within the SDAB largely as a result of natural (wind) and anthropogenic emissions of dust during dry conditions. Exposure to PM₁₀ can increase the number and severity of asthma attacks, as well as cause or aggravate lung diseases.

In San Diego County, the federal Maximum 24-hour Sample of 150 µg/m³ has not been exceeded since 1994. As shown in Table 5-4, the SDAB exceeded the state standards of PM₁₀ emissions (50 µg/m³ for the state maximum 24-hour AAQS requirement) from 1996 through 2000.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, invisible gas that is usually formed from the incomplete combustion of organic substances. Approximately 60 percent of the carbon monoxide emitted in the SDAB comes from motor vehicles. Ambient concentrations are influenced by distribution of vehicular traffic, wind speed, and atmospheric mixing, such as the presence of inversion conditions. High concentrations of carbon monoxide can impair the ability of the human body to absorb oxygen into the bloodstream, thereby aggravating cardiovascular disease and causing fatigue, headaches, and dizziness.

Neither the state nor the national CO air quality standards (20 ppm and 35 ppm, respectively) has been exceeded in the basin in the last five years. Because of the successful record of low CO levels, the SDAB has retained attainment status with regard to this criteria pollutant.

5.3 BIOLOGICAL RESOURCES

5.3.1 Introduction

This chapter discusses biological resources and the existing biological environment found in the Miguel–Mission 230kV #2 Project area, including the existing project right-of-way from the Miguel Substation to Fanita Junction, the project right-of-way from Fanita Junction to the Mission Substation, and the Miguel Substation, the Los Coches Substation, the Mission Substation, and existing access and spur roads.

Reconnaissance and habitat assessment level surveys were conducted along the existing project right-of-way in February, March, and April 2002 to assess existing vegetation communities. Focused species surveys are scheduled for spring and summer 2002 to determine presence or absence of sensitive or listed species and covered species along the existing project right-of-way. Until additional focused surveys are completed, SDG&E would presume that sensitive or listed species and covered species associated with vegetation communities located along the existing project right-of-way are present.

5.3.2 Regulatory Framework

Various federal, state, and local environmental laws would apply to the project, including but not limited to the following:

Federal

National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347, 1982) as Amended

NEPA is a national declaration of environmental goals and a national guide for protecting the environment. Its main intent is for the federal government and its agencies to consider the environment before undertaking any major actions. These actions may include projects regulated or approved by federal agencies; any new or revised agency rules, regulations, plans, policies, or procedures; and any legislative proposals that will significantly affect the environment. This act requires all federal agencies to prepare impact assessments in which the public can be involved (Environmental Assessments and/of Environmental Impact Statements) for “every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment” (Section 102[2][42 U.S.C. 4332).

NEPA also established the Council of Environmental Quality, which prepares an annual environmental quality report, monitors federal agencies’ implementation of the act, reports on the state of the environment, and develops national programs to improve environmental quality. NEPA regulations appear in 10 CFR 1021/61 FR 64603. USFWS regulation by NEPA, including permits for “take” and actions on USFWS-administered lands can be found in 45 CFR 4791/47 FR 28841.

Clean Water Act of 1977 (33 U.S.C. 1251, 1994)

The CWA is intended to restore and maintain the quality and biological integrity of the nation's waters. It prohibits the discharge of pollutants into "waters of the United States" without a permit (i.e., a National Pollutant Discharge Elimination [NPDES] permit) administered by the EPA. By issuing NPDES permits, the EPA can regulate the discharge of pollutants to protect water quality. Section 404 of the CWA provides that whenever any person dredges or places any fill material (e.g., while undertaking road construction, bridge construction, or streambed alteration) from or into "waters of the U.S.," including without limitation wetlands, streams, and bays, a permit is required from the ACOE.

Endangered Species Act (16 U.S.C. 1531, 1994)

Under the federal Endangered Species Act, no person may "take" a species listed as threatened or endangered without a permit. The act is administered by, and permits are issued by, the USFWS and the National Marine Fisheries Service (NMFS) under the U.S. Department of Interior (USDI). Take is defined as to either hunt, pursue, catch, capture, harm, or kill a listed species; or to attempt to hunt, pursue, catch, capture, harm, or kill a listed species. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Destruction or disruption of habitat of a listed species can, under certain circumstances, result in the take of such species.

Incidental take permits are issued under Section 10(a) of the ESA. Among other things, an applicant for a permit must develop an HCP for approval by the USFWS, defining the potential for take of threatened and/or endangered species and proposing planned mitigation and conservation measures to reduce or eliminate take. The USFWS assesses the potential take that may result from the proposed activities and assesses the adequacy of the proposed HCP to ensure that the species would continue to be conserved in a Biological Opinion (BO) prior to issuance of a permit.

When a project involves action by any federal agency related to approving, funding, or otherwise supporting a private action or to carry out a federal project, and where the action may have an effect on a federally listed species or designated critical habitat, the federal agency is required under Section 7 of the ESA to consult with the USFWS. As a part of the consultation, the USFWS would prepare a BO evaluating the proposed federal action and its potential to jeopardize the survivability of the species or result in a take of listed species and whether the action would jeopardize the survivability of the species or result in the destruction or adverse modification of critical habitat. At the conclusion of the consultation, the USFWS would issue a written statement setting forth its opinion and a summary of the information on which its opinion is based detailing how the project affects species or its critical habitat. The project subject to the federal action may proceed if, in its statement, the USFWS determines if the project meets the requirement of the ESA and complies with any conditions imposed by the USFWS. The federal agency would be responsible for ensuring that all conditions imposed by USFWS are implemented.

Migratory Bird Treaty Act (16 U.S.C. 703, 1994) as amended

The Migratory Bird Treaty Act (MBTA) regulates the killing, taking, collecting, and selling or purchasing of native bird species or their parts, nests, or eggs. The treaty allows hunting of certain game bird species, for specific periods, as determined by federal and state governments. The intent of the MBTA is to eliminate any commercial market for migratory birds, feathers, or bird parts, especially for eagles and other birds of prey. The MBTA provides legal protection for almost all breeding bird species occurring in the United States.

*State*California Environmental Quality Act (Public Resources Code 21000 et seq.)

The CEQA requires state and local agencies to disclose and consider the environmental implication of their discretionary actions that may cause a physical change in the environment. Discretionary actions may include approval, funding, or otherwise supporting a private project or carrying out a public project. CEQA further requires public agencies, when feasible, to exercise their discretion in a manner that avoids or minimizes the potentially significant environmental impacts of their actions.

California Endangered Species Act (California Fish and Game Code 2050-2116)

The California Endangered Species Act (CESA) parallels the federal ESA. As the responsible administering department of the Resources Agency, the CDFG has regulatory authority over state-listed endangered and threatened species. Like the ESA, CESA prohibits the take of listed and candidate species without a permit. Many species are listed as threatened or endangered under both the state and federal ESA.

The state legislature encourages cooperative and simultaneous findings among state and federal agencies. Further, the General Counsel for the CDFG has issued a memorandum to CDFG regional managers and division chiefs clarifying the CESA consultation process. The memorandum clarifies that, if a federal BO has been prepared for a species, the CDFG must use this BO in lieu of its own findings unless it is inconsistent with CESA.

Participation in federal consultation and adoption of a federal BO is authorized by CDFG Code Section 2095. By adopting the federal BO, the CDFG need not issue a taking permit per Section 2081 of the state code. If the BO is consistent with CESA, the CDFG would complete a 2095 form in finalizing the adoption of the BO. If the federal BO is found to be inconsistent with CESA, CDFG may issue an Incidental Take Permit, with any appropriate conditions, under 2081.

Streambed Alteration Agreement (California Fish and Game Code, 1600)

Under Chapter 6 of the California Fish and Game Code, CDFG is responsible for protecting and conserving the state's fish and wildlife resources. Sections 1600 et seq. provide that prior to undertaking any activity that would "...divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake designated by CDFG in which there is at any time an existing fish or wildlife resource or from which those resources derive benefit, or would use

material from the streambeds designated by the department,” a public or private party must first file an application with CDFG for a streambed alteration agreement.

These agreements usually include specific requirements related to construction techniques and remedial and compensatory measures to mitigate adverse impacts. CDFG may also require long-term monitoring and maintenance as part of an agreement to assess the effectiveness of the proposed mitigation. The local CDFG warden or unit biologist typically has responsibility for issuing streambed alteration agreements. An arbitration process is provided for if an agreement cannot be reached between the party applicant and the CDFG.

Regional

Natural Community Conservation Planning Act

Regional conservation planning strategies under CESA providing protection, preservation, and conservation of listed and candidate species, their habitat, natural communities and natural resources while continuing to allow appropriate development and growth within the state are authorized and implemented under the Natural Community Conservation Planning Act of 1991, set forth in Fish and Game Code Sections 2800–2862. These strategies are designed to provide protection and conservation to threatened and endangered species through a multi-species, habitat-based, and long-term approach that both ensures the conservation of, and net benefits to, the affected species and the economic growth of the community in which they exist. Under this program, USFWS, CDFG, and other stakeholders have evaluated, or are evaluating, the distribution and extent of sensitive habitats and target sensitive plant and animal species in California. The ultimate goal of these studies is to develop interconnected ecosystem preserves. Development and implementation of regional multi-species preserve systems is intended to protect viable populations of key sensitive plant and animal species and their habitat while accommodating continued economic development and quality of life for residents of the region.

The project and its associated activities fall under SDG&E’s NCCP pursuant to an agreement among USFWS, CDFG, and SDG&E. SDG&E’s NCCP covers the installation, use, maintenance, and repair of its gas and electric systems and typical expansion to those systems throughout much of SDG&E’s existing service territory. SDG&E’s NCCP includes much of San Diego County, a portion of southern coastal Orange County, and the Moreno Gas Compressor Station in Riverside County. As a part of the NCCP, SDG&E has been issued incidental take permits by USFWS and CDFG for covered species (defined in the NCCP to include listed species, candidate species, and numerous other identified sensitive species).

The Miguel–Mission 230kV #2 Project falls within SDG&E’s NCCP covered area. The project area is also located within the City of San Diego’s Multiple Species Conservation Program (MSCP), which covers approximately 581,000 acres in central and southwestern San Diego County. SDG&E’s public utility activities, such as the project, are not subject to the regulatory jurisdiction of local governments, such as the City or County of San Diego, and therefore are not governed by the terms and conditions of the MSCP. However, in implementing its NCCP, SDG&E coordinates with the City of San Diego to achieve consistency with the MSCP to the extent feasible. Where consistency with the MSCP is not feasible, SDG&E’s NCCP provides for

appropriate protocols and mitigation measures to protect natural community and natural resource values.

5.3.3 Setting

San Diego County is a biologically diverse region that supports rare and declining native habitats, numerous federal and state-listed plant and animal species, and an increasing amount of federally designated critical habitat for listed species. The environmental setting of the project right-of-way comprises rivers, ephemeral drainages, vernal pools, riparian woodland, annual grasslands, and large expanses of native coastal sage scrub and chaparral. It also includes the boundary of a multi-jurisdictional regional habitat conservation plan located in San Diego County to conserve threatened and endangered species and their habitats in these regions.

5.3.4 Inventory Methods

Because focused biological surveys are ongoing for this project and will not be completed until later this year, this PEA employs a habitat-based assessment that assumes suitable habitat within the project area is occupied by sensitive and covered species associated with those habitats.

Records Search

Preliminary investigations included information obtained from the USFWS; literature searches including to within 5 miles of the project area; examination of aerial photographs (scale: approximately 1:3,500); and database searches, including the City of San Diego HCP/MSCP Subarea Plan and the San Diego County MSCP, California Native Plant Society (CNPS) and the California Natural Diversity Data Base (CNDDB) records for the La Jolla, La Mesa, El Cajon, Poway, San Vicente, and Mount Jamul U.S. Geological Survey (USGS) quadrangles. Environmental documents, including Environmental Impact Reports prepared for other public and private projects in the vicinity, were reviewed. A comprehensive list of special-status species was compiled, including all species in the project region that were:

- listed as endangered or threatened, proposed for listing, or candidates for listing under the federal ESA (USFWS, 2000; NMFS, 1999);
- listed as endangered or threatened or candidates for listing under the CESA (CDFG, 2000);
- included in one of the CDFG publications on species of special concern (Jennings and Hayes, 1994; Moyle et al., 1989; Remsen, 1978; Williams, 1986);
- “fully protected” by the State of California (Fish and Game Code Section 355, 3503, 3511, 4700, 5050);
- protected under the MBTA;
- included as covered species in the SDG&E NCCP;
- included in the CNPS compilation (1999); and
- plants that meet the definition of rare or endangered under CEQA.

Reconnaissance and habitat assessment level surveys were completed in February, March, and April 2002 to determine habitat suitability for covered species, and special-status plant, wildlife, and aquatic species. Suitable habitat for covered species and special-status species was

determined by the presence of diagnostic habitat elements. In inconclusive cases, habitat was assumed to be at least marginally suitable.

Vegetation Community Mapping and Covered and Sensitive-species Surveys

A complete floristic survey of the project area, as required by USFWS or CDFG, will be completed in spring and summer 2002 to determine whether covered or special-status plant species or sensitive plant communities occur along the existing project right-of-way. The covered and special-status plant surveys will follow the protocol recommended in the CDFG, USFWS, and CNPS guidelines, for rare plant surveys, and also follow the standards set forth in the SDG&E's NCCP. All plants encountered will be identified to a level necessary to ensure that covered or special-status species are detected, if present.

Covered and Special-status Wildlife Species Surveys

Site-specific surveys for covered or sensitive plant species are ongoing in the project area as yet for the analysis in the PEA. Protocol-level surveys for the Quino checkerspot butterfly (*Euphydryas editha quino*) in appropriate habitat have been completed according to the USFWS' Quino Checkerspot Butterfly Survey Protocol for 2002. Site-specific focused surveys for listed wildlife, covered, and sensitive species, as required by USFWS or CDFG, will be conducted along the study corridor and associated access roads during the appropriate survey periods. Focused surveys for coastal California gnatcatcher are being conducted in appropriate habitat along and adjacent to the project right-of-way and associated access roads. The results of these surveys will be presented in a Biological Technical Report to be completed in summer 2002.

Aerial photography, field reconnaissance, and habitat assessment surveys aided in identifying potential habitats, such as riparian woodland, coastal sage scrub, chaparral, and annual grassland, within and adjacent to the existing project right-of-way. Reconnaissance and habitat assessment surveys were conducted along the right-of-way in February through April 2002 by biologists using a habitat assessment approach. Where possible, an area approximately 500 feet wide (approximately 250 feet on either side of the existing right-of-way centerline) was surveyed for wildlife and assessed for vegetation type.

5.3.5 Inventory Results

Vegetation Communities and Associated Wildlife

The proposed project area is located in San Diego County within the south coast geographic floristic subdivision, which is dominated by coastal sage scrub and chaparral vegetation communities. The existing project right-of-way crosses coastal sage scrub and chaparral communities, scattered residential and commercial developments, ruderal and disturbed habitat, annual grasslands, vernal pools, mixed riparian habitats, two river crossings (San Diego River and Sweetwater River), and numerous ephemeral tributaries or drainages (San Vicente Creek, Los Coches Creek, and Forrester Creek). The existing project right-of-way crosses over the San Diego River north of the Los Coches Substation, and the Sweetwater River where it runs through the Cottonwood at Ranch San Diego Golf Club. At this location, manicured lawns and landscaped trees and vegetation surround the Sweetwater River.

San Vicente Creek is located along the northern section of the right-of-way; Los Coches Creek and Forrester Creek are located on the eastern portion of the right-of-way south of Interstate 8; a perennial unnamed tributary to the Sweetwater River is located south of State Route 94 (Campo Road); and numerous unnamed ephemeral tributaries or drainages are located along the entire route. Vernal pools are found in the western portion of the project on a narrow mesa top northeast of Interstate 15, southwest of Admiral Baker Golf Course and south of Santo Road. The terrain along the existing project right-of-way ranges from level to gently rolling, to rough foothills with steep valleys and ravines. Elevations range from approximately 100 feet to 1,300 feet in the survey area.

Within the existing project right-of-way, nine major vegetation communities or cover types were found (see Table 5-5). Coastal sage scrub (including disturbed coastal sage scrub) and disturbed and residential and commercial development constitute the majority of the land cover within the project right-of-way (76.2 percent and 16 percent, respectively). Chaparral communities compose approximately 3.1 percent; mixed riparian woodlands compose approximately 2 percent; agricultural approximately 2 percent; and annual grasslands compose approximately 0.4 percent of the land covered within the right-of-way. A vernal pool complex occupies approximately 0.3 percent of the right-of-way.

The following sections fully describe the existing vegetation communities found within the existing project right-of-way and along the project's access roads that potentially support listed, sensitive, or covered species. Appendix C contains a list of common and scientific names of plant species observed during the reconnaissance and habitat assessment surveys. Vegetation community types discussed in this report are generally based on SDG&E's NCCP, MSCP, and on Holland's 1986 report on terrestrial natural communities of California.

Coastal Sage Scrub and Chaparral

Diegan coastal sage scrub is the predominant sage scrub vegetation community within the existing project right-of-way and in the immediate project vicinity. The coastal sage scrub is characterized by California sagebrush (*Artemisia californica*), flat-topped buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), and laurel sumac (*Malosma laurina*). The coastal sage scrub community is found on most of the lower slopes and mid-elevation portions of hillsides in the immediate project vicinity.

The chaparral within the existing project right-of-way and in the immediate project vicinity is generally confined to higher elevations and steeper slopes. Within the right-of-way, this community is dominated by chamise (*Adenostoma fasciculatum*), ceanothus (*Ceanothus* sp.), and manzanita (*Arctostaphylos* sp.).

Wildlife species most often associated with Diegan coastal sage scrub and chaparral habitats include several upland bird species, such as California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), California thrasher (*Toxostoma redivivum*), Bewick's wren (*Thryomanes bewickii*), and western scrub-jay (*Aphelocoma californica*). Scrub habitats also provide cover

Table 5-5: Vegetation Communities/Cover Within Project Right-of-way

Vegetation Communities	Acres
<i>Coastal Sage Scrub and Chaparral</i>	
Coastal sage scrub	590.51
Chaparral	27.60
Disturbed coastal sage scrub	81.33
Total coastal sage scrub and chaparral	699.44
<i>Riparian and Vernal Pool</i>	
Mixed riparian woodland	17.82
Vernal pool	2.22
Total riparian and vernal pool	20.04
<i>Annual Grassland</i>	
Annual grassland	3.08
Total annual grassland	3.08
<i>Disturbed</i>	
Groves and orchards	17.47
Residential/urban/developed/graded	119.26
Ruderal	22.40
Total disturbed	159.13

and forage for mammal species, including California ground squirrel (*Spermophilus beecheyi*) and Audubon cottontail (*Sylvilagus audubonii*). Side-blotched lizard (*Uta stansburiana*) and western fence lizard (*Sceloporus occidentalis*) are also commonly found in these habitats. The federally listed threatened coastal California gnatcatcher (*Polioptila californica californica*) is strongly associated with sage scrub habitats.

Coastal sage scrub and chaparral make up the majority of the vegetation communities in the existing project right-of-way and in the immediate project vicinity. Diegan coastal sage scrub is the most dominant native vegetation found along the existing project right-of-way and is scattered throughout the immediate project vicinity. Chaparral is typically located in areas of higher elevations along hilltops and steep slopes in Mission Trails Regional Park, north of Los Coches Substation, and north of Miguel Substation.

Annual Grassland

Most of the annual grassland in the existing project right-of-way and in the immediate project vicinity area appears to be abandoned agricultural and pasture land that is now dominated by the non-native ripgut grass (*Bromus diandrus*), slender oat (*Avena barbata*), wild oat (*Avena fatua*), and black mustard (*Brassica nigra*).

Most of the annual grassland in the existing project right-of-way and in the immediate project vicinity is bordered by chaparral or coastal sage scrub vegetation. Historically, the annual grassland areas may have been composed of chaparral and coastal sage scrub plant species. It is presumed these areas had been cleared for agricultural use and subsequently abandoned. Annual grasslands are common and widespread throughout California, and the characteristic wildlife species that occupy them are of equally wide distribution. Typical wildlife species include the California vole (*Microtus californicus*), western meadowlark (*Sturnella neglecta*), mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), and house finch (*Carpodacus mexicanus*).

Open Water

Open waterbodies are located adjacent to the existing project right-of-way between 500 feet to 0.5 mile from the right-of-way. These open waterbodies include Lake Jennings, Sweetwater Reservoir, Santee Recreation Lakes, and retaining ponds for the Padre Dam Water District. Open waterbodies near the existing project right-of-way and in the immediate project vicinity provide important habitat for a variety of aquatic organisms and waterfowl. No open water bodies occur within the existing project right-of-way.

Vernal Pools

One vernal pool complex is known to occur in the existing project right-of-way. It is located on a mesa top east of Interstate 15 and south of Santo Road. Vernal pools are present only during certain times of the year (if conditions warrant). The important soil requirement for vernal pools is either a subsoil hardpan or claypan, which prevents water draining from these pools through downward percolation. Some of the typical indicator species of vernal pools include: San Diego button-celery (*Eryngium aristulatum* var. *parishii*), little mouselink (*Myosurus minimus*), Orcutt's

brodiaea (*Brodiaea orcuttii*), San Diego mesa mint (*Pogogyne abramsii*), and wooly marbles (*Psilocarphus brevissimus*). Due to the atypical dry conditions this year, none of these indicator species were observed in these vernal pools. This area is part of the San Diego fairy shrimp's San Diego: Central Coast Critical Habitat Unit. Existing fences along both sides of the access roads prevent inadvertent intrusion into the vernal pools within the existing right-of-way.

Mixed Riparian Woodland

Mixed riparian woodlands border the perennial rivers and some ephemeral tributaries or drainages crossed by the existing project right-of-way. This habitat typically occurs as a narrow band dominated by sycamores, willows, and in some locations, coast live oak (*Quercus agrifolia*). In the existing project right-of-way, mixed riparian woodland is found along the San Diego River, an unnamed tributary to the San Diego River, Los Coches Creek, and Forrester Creek, and an unnamed tributary to the Sweetwater River. Mixed riparian woodland crossed by the existing right-of-way typically includes willows (*Salix* sp.), sycamores, cottonwoods, and mulefat. Introduced, invasive plant species, such as tamarisk (*Tamarix* sp.) and giant reed (*Arundo donax*), are found in many of the larger riparian corridors crossed by the right-of-way.

Riparian habitats provide food, water, dispersal corridors, and escape, as well as nesting and thermal cover, for a diverse number of terrestrial and aquatic species. Birds typically associated with riparian habitats include black phoebe (*Sayornis nigricans*), yellow warbler (*Denroica petechia morcomi*), Nuttall's woodpecker (*Picoides nuttallii*), Cooper's hawk (*Accipiter cooperii*), and red-shoulder hawk (*Buteo lineatus*). Deer mouse (*Peromyscus maniculatus*), dusky-footed woodrat (*Neotoma fuscipes*), Alligator lizards (*Gerrhonotus multicarinatus*), and slender salamanders (*Batrachoseps pacifus*) can also be found in this habitat.

Disturbed

This vegetation category encompasses all areas in the existing project right-of-way or in the immediate project vicinity that have been previously disturbed and have not returned to native habitat. This category includes orchards (both active and abandoned), agriculture, eucalyptus woodlands, and ruderal areas. The orchards in the existing project right-of-way or in the immediate project vicinity occur mostly on flat or slightly sloped areas and consist primarily of citrus and avocados. Old or abandoned orchards are located on or near the project's existing right-of-way south of the San Diego River. The orchards are located in an old floodplain. An old or abandoned citrus orchard is located south of State Route 94 (Campo Road) on a hillside adjacent to residences and coastal sage scrub vegetation. A large commercial avocado orchard is located on the east side of the existing right-of-way south of Interstate 8.

Eucalyptus woodlands are dominated by several species of eucalyptus (*Eucalyptus* spp.). Generally these trees were planted as a windbreak, and for aesthetic and horticultural purposes around houses and other developed areas, but many species of eucalyptus have become naturalized and have invaded the natural riparian areas.

Ruderal vegetation areas are dominated by invasive non-native forbs (herbaceous, non-grass species) and have adapted to a regime of frequent disturbances. Ruderal vegetation in the

existing right-of-way is typically located in abandoned agricultural fields, graded lots, and road shoulders, and is dominated by broadleaf exotic annuals, such as mustard (*Brassica nigra*), Russian thistle (*Salsola tragus*), fennel (*Foeniculum vulgare*), and to a lesser degree, by exotic annual grasses. Small patches of ruderal vegetation are abundant throughout the project area.

Regional Wildlife Movement

Many existing features within the existing project right-of-way and in the immediate project vicinity facilitate wildlife movement throughout the region. Animals tend to travel along natural paths and away from developed or disturbed areas. The presence of several bodies of water in the vicinity of the existing right-of-way, including Santee Recreation Lakes, retaining ponds for the Padre Dam Water District, Lake Jennings, and the Sweetwater Reservoir attract migratory bird species as part of the Pacific Flyway. These lakes provide rest and forage areas for numerous birds during the migratory seasons.

Terrestrial wildlife species tend to travel along natural drainages that provide protective cover from predators, as well as a source of forage. There are several natural drainage features within the existing right-of-way that may facilitate wildlife movement through the region, including the San Diego River, an unnamed tributary to the San Diego River in Sycamore Canyon, Sweetwater River, an unnamed tributary to the Sweetwater River in Steele Canyon, Los Coches Creek, and Forrester Creek.

Sensitive Vegetation Communities

Several of the vegetation communities occurring within the existing right-of-way are considered sensitive, or to have special status, due to their natural rarity and their decline in area due to development and/or the number of sensitive plant or animal species dependent upon them. Sensitive habitats also include those regulated by the federal government under the CWA (i.e., jurisdictional wetlands and “waters of the U.S.”) or the ESA (i.e., site-specific designated critical habitat areas for federally listed wildlife species).

Wetland habitat is under the jurisdiction of the ACOE pursuant to Section 404 of the CWA of 1972, as amended in 1977 and 1984. Wetlands under the jurisdiction of the ACOE must meet specific vegetation, hydrological, and soil criteria. Wetlands serve many functions, including flood and sediment control, habitat for rare and common species, corridors for wildlife movement, and control of water quality and erosion.

Special-status Plant Species

Special-status species include plant and animal species listed by the USFWS or CDFG as endangered, threatened, proposed, or candidate species; and plant and animal species listed by federal land management agencies as sensitive or rare. Sensitive plant species include those occurring on the CNPS Inventory of Rare and Endangered Vascular Plants of California (1998), and sensitive animal and plant species (covered species) include those species considered sensitive in SDG&E’s NCCP Permit (1995).

All special-status plant species and covered species known to occur or with the potential to occur in the existing right-of-way appear in Table 5-6 and are covered by SDG&E's NCCP. Of the identified plants, three are listed as endangered by the USFWS; a petition is pending before USFWS to list one more as endangered; and two are listed as threatened by USFWS. Further, CDFG has listed six of the plant species as endangered and one as rare.

Focused surveys for sensitive and covered plants would be conducted during each plant's appropriate flowering season; therefore, sensitive plant surveys in and along the existing right-of-way are ongoing and will continue during the spring and summer 2002 survey season.

Table 5-6: Special-status and Covered Plant Species and Sensitive Natural Communities

Species	Listing Status Federal/State	California Native Plant Society List Code	Flowering/ Phenology	Habitat Type and Potential for Occurrence¹
San Diego thorn-mint <i>Acanthomintha ilicifolia</i>	FT SE RSS	1B R-E-D 2-3-2	April–June	Chaparral, coastal sage scrub, valley and foothill grassland, and vernal pools. Endemic to clay soils of mesas and valleys, usually on clay lenses within grassland or chaparral communities. Occurs between 10 to 935 meters in elevation. Low to moderate potential for occurrence in grassland and chaparral areas. California Natural Diversity Data Base (CNDDDB) records indicate occurrences within 5 miles of the project area.
San Diego ambrosia <i>Ambrosia pumila</i>	FPE RSS	1B R-E-D 3-3-2	June– September	Chaparral, coastal sage scrub, valley and foothill grassland, and vernal pools. Often found in slightly disturbed areas. Prefers sandy loam or clay soil. Historical occurrence north of Jamul Drive and east of Steele Canyon Road near the project area.
Otay manzanita <i>Arctostaphylos otayensis</i>	RSS	1B R-E-D 3-2-3	January– March	Chaparral and cismontane woodland, on metavolcanic soils. Endemic to San Diego County. Occurs between 275 to 1,700 meters. Moderate to high potential for occurrence. CNDDDB records indicate occurrences within 5 miles of the project area.
Orcutt's brodiaea <i>Brodiaea orcuttii</i>	RSS	1B R-E-D 1-3-2	March – September	Vernal pools, valley and foothill grassland, closed-cone coniferous forest, cismontane woodland, chaparral, and meadow. Usually observed in vernal pools and small drainages. Prefers mesic, clay habitats; sometimes serpentine substrate. Occurs between 30 to 1,615 meters. Historical occurrence in vernal pools south end of Santo Road near the project area.

Species	Listing Status Federal/State	California Native Plant Society List Code	Flowering/ Phenology	Habitat Type and Potential for Occurrence ¹
Dunn’s mariposa lily <i>Calochortus dunnii</i>	SR RSS	1B R-E-D 2-2-2	May–June	Closed-cone coniferous forest and chaparral. Found on gabbro or metavolcanic soils and also known from sandstone. Often associated with chaparral. Moderate potential for occurrence. CNDDDB records indicate occurrences within 5 miles of the project area.
Slender-pod jewel flower <i>Caulanthus stenocarpus</i>	RSS	Not applicable (N/A)	March –May	Chaparral and coastal sage scrub. Often observed after fire or disturbance. Occurs between 0 to 1,300 meters. Moderate to high potential for occurrence.
Lakeside ceanothus <i>Ceanothus cyaneus</i>	RSS	1B R-E-D 2-3-2	April–June	Closed-cone coniferous forest and chaparral. Occurs between 100 to 1,515 meters. Historic occurrence on top of a bluff between San Vicente Creek and San Diego River at their junction in Lakeside near the project area.
Variegated dudleya <i>Dudleya variegata</i>	RSS	1B R-E-D 2-2-2	May–June	Chaparral, coastal sage scrub, cismontane woodland, valley and foothill grassland, and vernal pools. Found in rocky or clay soil, sometimes associated with vernal pool margins. Occurs between 3 to 550 meters. Moderate potential for occurrence. CNDDDB records indicate occurrences within 5 miles of the project area.
Palmer’s ericameria <i>Ericameria palmeri</i> ssp. <i>palmeri</i>	RSS	2 R-E-D 3-2-1	September– November	Coastal sage scrub and chaparral. Occurs in granitic soils on steep hillsides and mesic sites. Occurs between 100 to 600 meters. Moderate to high potential for occurrence. CNDDDB records indicate occurrences within 5 miles of the project area.

Species	Listing Status Federal/State	California Native Plant Society List Code	Flowering/ Phenology	Habitat Type and Potential for Occurrence ¹
San Diego button-celery <i>Eryngium aristulatum</i> var. <i>parishii</i>	FE SE RSS	1B R-E-D 232	April–June	Vernal pools, coastal sage scrub, and valley and foothill grassland. Occurs in San Diego mesa hardpan and claypan vernal pools and southern interior basalt flow vernal pools, and is usually surrounded by coastal sage scrub. Occurs between 15 to 620 meters. CNDDDB records indicate occurrences within 5 miles of the project area.
San Diego barrel cactus <i>Ferocactus viridescens</i>	RSS	2 R-E-D 1-3-1	May–June	Chaparral, coastal sage scrub, and valley and foothill grassland. Often observed on exposed, level or south-sloping areas, often in coastal sage scrub near the crest of slopes. Occurs between 3 to 485 meters. Species observed during surveys near Miguel Substation and within San Diego National Wildlife Refuge Otay-Sweetwater Unit. Historic occurrence northeast of junction of Interstate 15 and Friars Road at the southwest end of Admiral Baker Golf Course, near the project area. High potential for occurrence.
Otay tar plant <i>Deinandra (Hemizonia)</i> <i>conjugens</i>	FT SE RSS	1B R-E-D 3-3-2	May–June	Coastal sage scrub, valley and foothill grassland. Occurs in coastal plains, mesas, and river bottoms, often in open, disturbed areas. Clay soils. Occurs between 25 to 300 meters. Species observed during previous surveys near Miguel Substation near the project area.
Gander's pitcher sage <i>Lepechinia ganderi</i>	RSS	1B R-E-D 3-1-2	June–July	Closed-cone coniferous forest, chaparral, coastal sage scrub, valley and foothill grassland. Usually found in chaparral or coastal sage scrub; sometimes in Tecate cypress woodland. Gabbro or metavolcanic substrate. Occurs between 300 to 1,000 meters. Low to moderate potential for occurrence. CNDDDB records indicate occurrences within 5 miles of the project area.

Species	Listing Status Federal/State	California Native Plant Society List Code	Flowering/ Phenology	Habitat Type and Potential for Occurrence ¹
Willow monardella <i>Monardella linoidesa</i> ssp. <i>viminea</i>	FE SE RSS	1B R-E-D 2-3-2	June–August	Riparian scrub, riparian woodland, riparian forest, closed cone coniferous forest, and chaparral. Found in canyons, in rocky and sandy places, and sometimes in washes or floodplains. Occurs between 50 to 400 meters. Moderate potential for occurrence. CNDDDB records indicate occurrences within 5 miles of the project area.
San Diego golden star <i>Muilla clevelandii</i>	RSS	1B R-E-D 2-3-2	May	Chaparral, coastal sage scrub, valley and foothill grassland, and vernal pools. Occurs on mesa grasslands at the edge of scrub vegetation. Prefers clay soils. Often found on mima mounds between vernal pools. Occurs between 50 to 1,090 meters. Historic occurrence in vernal pools south end of Santo Road near the project area
Little mousetial <i>Myosurus minimus</i> ssp. <i>apus</i>	RSS	3 R-E-D 2-3-2	March–June	Vernal pools. Prefers alkaline soils. Occurs between 20 to 640 meters. Historic occurrence in vernal pools south end of Santo Road near project area.
Dehesa beargrass <i>Nolina interrata</i>	SE RSS	1B R-E-D 3-3-2	June–July	Chaparral. Typically found on rocky hillsides or ravines on gabbro or meta-volcanic soils. Occurs between 180 to 855 meters. Low potential for occurrence. CNDDDB records indicate occurrences within 5 miles of the project area.

Species	Listing Status Federal/State	California Native Plant Society List Code	Flowering/ Phenology	Habitat Type and Potential for Occurrence ¹
Snake cholla <i>Opuntia parryi</i> var. <i>serpentina</i>	RSS	1B R-E-D 3-3-2	April–May	Chaparral and coastal sage scrub, usually in more open vegetation on xeric hillsides. Moderate potential for occurrence. CNDDDB records indicate occurrences within 5 miles of the project area.
San Diego mesa mint <i>Pogogyne abramsii</i>	FE SE RSS	1B R-E-D 2-3-3	April–June	Vernal pools within grassland, chamise chaparral or coastal sage scrub communities. Endemic to San Diego County. Occurs between 90 to 200 meters. Known to occur at south end of Santo Road near the project area.
San Diego Mesa Hardpan Vernal pool	N/A	N/A	N/A	Recognized as a sensitive natural community, may contain jurisdictional wetlands. Found at south end of Santo Road near the project area.
San Diego Mesa Claypan Vernal pool	N/A	N/A	N/A	Recognized as a sensitive natural community, may contain jurisdictional wetlands. Found along south edge of Sweetwater Reservoir north of the project area.

¹ Scientific names, common names, and habitat notes from Hickman (1993) and Skinner and Pavlik (1994).

U.S. FISH AND WILDLIFE SERVICE

- FE Federally listed, endangered: species in danger of extinction throughout a significant portion of its range
- FT Federally listed, threatened: species likely to become endangered within the foreseeable future
- FPE Federally proposed endangered

STATE OF CALIFORNIA

- SE State listed, endangered
- ST State listed, threatened
- SR State listed, rare
- CNDDDB California Natural Diversity Data Base

Biological Resources Setting

CALIFORNIA DEPARTMENT OF FISH AND GAME

- SC Special concern: administrative designation for vertebrate species that appear vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats
- RSS Regionally sensitive species covered under SDG&E's Natural Community Conservation Plan permit

CALIFORNIA NATIVE PLANT SOCIETY

- List 1B Plants rare, threatened, or endangered in California and elsewhere
- List 2 Plants rare, threatened, or endangered in California but more common elsewhere
- List 3 Plants about which more information is needed
- List 4 Plants of limited distribution: a watch list
- R Rarity: 1=rare but in sufficient number that extinction potential is low; 2=distribution in a limited number of occurrences; 3=distribution in highly restricted occurrences or present in small numbers
- E Endangerment: 1=not endangered; 2=endangered in a portion of range; 3=endangered throughout range
- D Distribution: 1=more or less widespread outside California; 2=rare outside California; 3=endemic to California

Nearly all of the sensitive plant species in the immediate project vicinity are considered rare and endangered by the CNPS. Of the state- or federally listed or covered plant species known to occur in the immediate vicinity of the project, or have the potential to occur within the existing project right-of-way, seven plant species merit full descriptions in the following sections because of their importance in regional planning, their resident status in the project area, their presence in critical habitat or preserve/management areas, and/or their rarity in the region.

San Diego Thorn-mint (FT/SE)

This federally threatened and state-endangered species occurs in grassy openings in chaparral and coastal sage scrub with clay soils. The microhabitat favored by San Diego thorn-mint is quite distinctive because the sites have crumbly and/or deeply fissured soils. Historical occurrences have been documented in the community of Tierrasanta, which is within 5 miles of the project area.

Under SDG&E's NCCP, this species is considered a narrow endemic and, as such, take authorization is limited to emergencies and unavoidable impacts from repairs to existing facilities. Take of the species for non-emergency work many not occur without first conferring with the USFWS and CDFG. Furthermore, for new projects, destruction of narrow endemic plant species or their supporting habitat would not be covered by the NCCP.

San Diego Ambrosia (FPE)

This federally proposed endangered species occurs in chaparral, coastal sage scrub, valley and foothill grassland, and vernal pools. The microhabitat favored by San Diego ambrosia is sandy loam or clay soils and is often found in slightly disturbed areas. Historical occurrences have been documented between Spring Canyon and Little Sycamore Canyon just north of Mission Trails Regional Park, which is within 1 mile of the project area. Populations are known to occur on or near the existing right-of-way south of the Sweetwater River, north of Jamul Drive, and east of Steele Canyon Road. This plant is considered a narrow endemic species under SDG&E's NCCP.

San Diego Button-celery (FE/SE)

This federally and state-endangered species is known from vernal pools or mima mound areas with vernal moist conditions. This species is somewhat more tolerant of peripheral vernal pool habitat than most obligate vernal pool species with which it sometimes grows. Suitable habitat for San Diego thorn-mint is found in the vernal pool complex at the south end of Santo Road in Tierrasanta.

Otay Tar Plant (FT/SE)

This federally threatened and state-endangered species occurs in coastal sage scrub, valley and foothill grassland. The microhabitat favored by Otay tar plant is coastal plains, mesas, and river bottoms, often in open, disturbed areas and fractured clay soils. Critical habitat has been proposed for Otay tar plant within 0.5 mile of the Miguel Substation and on the northwest side of Sweetwater River. The existing project right-of-way crosses the proposed critical habitat just

northeast of the Miguel Substation. This species was observed during previous surveys near Miguel Substation near the project area.

Willowy Monardella (FE/SE)

This federally and state-endangered species is found in riparian scrub, riparian woodland, riparian forest, closed-cone coniferous forest, and chaparral. Willowy monardella can be found in canyons, in rocky and sandy places, and sometimes in washes or floodplains. Historical occurrences have been documented near Sycamore Canyon, West Sycamore Canyon, and Clark Canyon north of Mission Trails Regional Park, which is within 1 mile of the project area. This plant is considered a narrow endemic species under SDG&E's NCCP.

San Diego Mesa Mint (FE/SE)

This federally and state-endangered species is endemic to San Diego County. San Diego mesa mint can be found in vernal pools within grassland, chamise chaparral, or coastal sage scrub communities. Suitable habitat is found in the vernal pool complex at the south end of Santo Road in Tierrasanta.

Dehesa Beargrass (SE)

This state-endangered species is found in chaparral communities and typically on rocky hillsides or ravines. Dehesa beargrass favors gabbro or meta-volcanic soils. Historical occurrences have been documented on the slopes of McGinty Mountain, which is within 5 miles of the project area.

Special-status and Covered Wildlife Species

The majority of the vegetation communities within the existing project right-of-way provide habitat for one or more of the sensitive or covered species known to or with the potential to occur within the vicinity of the right-of-way. Based on the literature search and the site visits, special-status wildlife, aquatic, and insect species were identified that could potentially occur within the project area. The sensitive species, their status, documented occurrence, and the potential for their presence along the existing right-of-way are summarized in Table 5-7. A list of common and scientific names of wildlife species observed during the reconnaissance and habitat assessment surveys make up Appendix C. Focused surveys for sensitive animal species, as required by USFWS and CDFG, within and adjacent to the existing right-of-way are ongoing and will be completed in summer 2002.

Table 5-7: Special-status and Covered Species Potentially Occurring in the Project Area

Scientific Name/ Common Name	Status	Potential for Species Occurrence Within the Project Area	Survey Period
<i>Mammals</i>			
<i>Lepus californicus bennettii</i> San Diego black-tailed jackrabbit	CSSC	High potential. Suitable habitat exists from Miguel Substation north to State Route 94 (Campo Road) and in the vicinity of Los Coches Substation east through Mission Trails Regional Park. San Diego black-tailed jackrabbit was observed and documented on the San Diego National Wildlife Refuge Otay-Sweetwater Unit near the Miguel Substation during surveys. California Natural Diversity Data Base (CNDDDB) records indicate occurrence within 1 mile of the project area.	Year-round
<i>Odocoileus hemionus fuliginata</i> Southern mule deer	Game Species	High potential. Suitable habitat exists through the existing project right-of-way in native vegetation. Sign was observed throughout the existing project right-of-way in native vegetation during surveys. Southern mule deer was observed near the Los Coches Substation. This species is not documented in the CNDDDB near the project area.	Year-round
<i>Birds</i>			
<i>Accipiter cooperi</i> Cooper’s hawk	CSSC	Moderate potential. The riparian vegetation north and south of the Admiral Baker Golf Course and along the San Diego River crossing may provide suitable nesting habitat. Area along an unnamed tributary to the Sweetwater River located on the south side of State Route 94 (Campo Road), Los Coches Creek, and Forrester Creek may contain suitable habitat. CNDDDB records indicate occurrence within 1 mile of the project area.	Year-round

Scientific Name/ Common Name	Status	Potential for Species Occurrence Within the Project Area	Survey Period
<i>Birds (continued)</i>			
<i>Agelaius tricolor</i> Tricolored blackbird	CSSC	Low potential. No suitable habitat was observed along the existing project right-of-way. Open water surrounded by some fresh water marsh is located in the Santee Recreation Lakes area south of the existing project right-of-way. SDG&E Geographic Information System (GIS) maps document an occurrence within 0.1 mile of the project area in the Santee Recreation Lakes area. CNDDDB records indicate occurrence within 5 miles of the project area.	April–July
<i>Aimophila ruficeps canescens</i> Southern California rufous-crowned sparrow	CSSC	Moderate/high potential. Suitable habitat exists on the steep rocky slopes located between Fanita Junction and the Los Coches Substation and south of State Route 94 (Campo Road) to the Miguel Substation. SDG&E’s GIS maps document occurrences within 0.5 mile of the existing project right-of-way in the Santee and Lake Jennings area and north of the Miguel Substation. CNDDDB records indicate occurrence within 1 mile of the project area.	March– September
<i>Ammodramus savannarum</i> Grasshopper sparrow	RSS	High potential. Suitable grassland habitat may exist in the vicinity of the Miguel Substation, on the San Diego National Wildlife Refuge Otay-Sweetwater Unit, and in Mission Trails Regional Park. Grasshopper sparrow was observed during surveys northeast of the San Miguel Substation. SDG&E’s GIS maps document an occurrence near the existing project right-of-way in Mission Trails Regional Park. No occurrences were recorded in the CNDDDB within the project area.	April–July
<i>Aquila chrysaetos</i> Golden eagle	BEPA SFP	Moderate potential. No suitable nesting habitat occurs within the study area. Suitable foraging habitat may be available in the vicinity of the Miguel Substation and within the San Diego National Wildlife Refuge Otay-Sweetwater Unit. None observed during surveys. SDG&E’s GIS maps document a sighting between the Miguel Substation and State Route 94 (Campo Road). No occurrences were recorded in the CNDDDB within the project area.	Year-round

Scientific Name/ Common Name	Status	Potential for Species Occurrence Within the Project Area	Survey Period
<i>Birds (continued)</i>			
<i>Campylorhynchus brunneicapillus</i> Coastal cactus wren	CSSC	High potential. Suitable habitat exists in the cactus-covered slopes around the Los Coches Substation. Coastal cactus wren was observed and documented near the Los Coches Substation during surveys. SDG&E GIS maps document occurrences around the Los Coches Substation. CNDDDB records indicate occurrence of coastal cactus wren within 0.5 mile of the Los Coches Substation.	March– September
<i>Polioptila californica californica</i> Coastal California gnatcatcher	FT CSSC	High potential. Suitable coastal sage scrub vegetation exists throughout the existing project right-of-way. Coastal California gnatcatchers have been observed and documented during surveys. SDG&E GIS maps document sightings within 0.5 mile of the existing project right-of-way from the Mission Substation to the Miguel Substation. CNDDDB records numerous occurrences of coastal California gnatcatcher throughout the project area within 0.5 mile of the existing project right-of-way.	March– September
<i>Athene cunicularia hypugea</i> Western burrowing owl	CSSC	Low potential. Suitable habitat may exist in the northern portion of Mission Trails Regional Park and in the vicinity of the Miguel Substation. None observed during surveys. CNDDDB records indicate one occurrence at Montgomery Airport, which is within 3 miles of project area.	March– September
<i>Vireo bellii pusillus</i> Least Bell's vireo	FE SE	Low potential. Marginal habitat may exist where the existing project right-of-way crosses the San Diego River and near the Sweetwater River. SDG&E GIS maps document sightings in these areas. CNDDDB records indicate occurrence within 1 mile of project area.	April–July

Scientific Name/ Common Name	Status	Potential for Species Occurrence Within the Project Area	Survey Period
Reptiles			
<i>Cnemidophorus hyperythrus beldingi</i> Orange-throated whiptail	CSSC	High potential. Suitable habitat is found throughout the existing project right-of-way. This species was observed and documented during project surveys. SDG&E GIS maps document sightings within 0.5 mile of the existing project right-of-way from the Elliot to Miguel Substations. CNDDDB records indicate occurrence within 1 mile of project area.	Year-round
<i>Crotalus ruber ruber</i> Northern red-diamond rattlesnake	CSSC	Moderate potential. Dense chaparral and large rocky outcrops between Fanita Junction and the Miguel Substation may provide suitable habitat. None observed during surveys. CNDDDB records indicate occurrence within 1 mile of project area.	Year-round
<i>Lichanura trivirgata roseofusca</i> Coastal rosy boa	RSS	High potential. Suitable habitat is found between the Elliot and Los Coches Substations and between the Granite and Miguel Substations. Coastal rosy boa was observed and documented along a project access road in the Mission Trails Regional Park during surveys. No occurrences were recorded in the CNDDDB within the project area.	February–October
<i>Phrynosoma coronatum blainvillei</i> San Diego horned lizard	CSSC	Moderate potential. Suitable habitat is found between the Los Coches and Miguel Substations. None observed during surveys. SDG&E GIS maps document a sighting within 1 mile of the existing project right-of-way between the Interstate 8 and Dehesa Road. CNDDDB records indicate occurrence within 1 mile of project area.	March–September
<i>Salvadora hexalepis virgulata</i> Coast patch-nosed snake	CSSC	Moderate potential. Suitable habitat is found throughout the existing project right-of-way. None were observed during surveys. CNDDDB records indicate occurrence within 1 mile of project area.	February–October

Scientific Name/ Common Name	Status	Potential for Species Occurrence Within the Project Area	Survey Period
<i>Amphibians</i>			
<i>Bufo microscaphus californicus</i> Arroyo southwestern toad	FE CSSC	Low potential. Marginal habitat may exist where the existing project right-of-way crosses the San Diego River. CNDDDB records reports no occurrences within 5 miles of the project area.	March–July
<i>Crustaceans</i>			
<i>Branchinecta sandiegoensis</i> San Diego fairy shrimp	FE	Moderate potential. Low to moderate quality habitat occurs in several seasonal and vernal pools adjacent to the existing project right-of-way on mesa tops between the Mission and Elliot Substations. These vernal pools are located in a designated Critical Habitat unit that, according to the USFWS, supports San Diego fairy shrimp. CNDDDB records indicate occurrence within 3 miles of project area.	January–April
<i>Terrestrial Insects</i>			
<i>Euphydryas editha quino</i> Quino checkerspot butterfly	FE	Moderate to low potential. Historically Quino checkerspot butterfly were found throughout the existing project right-of-way, but recent sightings (since 1990) have been recorded only along the southern portion of the right-of-way. Presently, suitable habitat may still be found along the existing project right-of-way in the Mission Trails Regional Park/Santee area and near Miguel Substation and the San Diego National Wildlife Refuge Otay-Sweetwater Unit east and north of the Sweetwater Reservoir. SDG&E GIS maps and CNDDDB records indicate occurrence within 1.5 miles of project area.	February–April (dependent on adult flight season)

Biological Resources Setting

CALIFORNIA DEPARTMENT OF FISH AND GAME

SE State listed, endangered
ST State listed, threatened
CSSC California Species of Special Concern
SP State protected species
SFP Fully protected
RSS Regionally sensitive species covered in SDG&E's Natural
Community Conservation Plan
Game Covered in SDG&E's Natural Community Conservation Plan permit
species

U.S. FISH AND WILDLIFE SERVICE

FE Federally listed, endangered
FT Federally listed, threatened
BEPA Bald Eagle Protection Act

Nineteen animal species considered sensitive by the USFWS or CDFG, or on other watch lists, are known to occur or have the potential to occur in the existing project right-of-way. All of these, except for Quino checkerspot butterfly, are covered under SDG&E's NCCP. Four, including the Quino checkerspot butterfly, are listed as endangered and one is listed as threatened by the USFWS. CDFG has listed two of the species as endangered and considers 12 as species of special concern. One species, the golden eagle, has the status of "fully protected" under the CDFG Code, Title 14.

In addition to the species identified in Table 5-7, the more common red-tailed hawk, red-shouldered hawk, and American kestrel may nest within the study corridor. During reconnaissance and habitat assessment surveys, several active red-tailed hawk nests were identified on various tower structures within the existing right-of-way.

Of the covered, sensitive, state or federally listed animal species known to occur in the vicinity of the existing right-of-way, seven wildlife species merit full descriptions in the following sections because of their importance in regional planning, their resident status in the project area, their presence in critical habitat or preserve/management areas, and/or their rarity in the region. Generally, suitable habitat is present, or the project is within their known range.

Cooper's Hawk (CSSC)

The Cooper's hawk (*Accipiter cooperi*), a California species of special concern, is a breeding resident throughout most of the wooded portions of California. Preferred nesting habitat is dense stands of live oak, riparian, or other forest habitat near water. This species forages on small birds and mammals in open woodlands and edge habitats. Cooper's hawk was not observed during surveys, but appropriate nesting habitat exists in eucalyptus woodlands in residential areas, and in riparian woodlands near or within the project area.

Coastal Cactus Wren (CSSC)

The coastal cactus wren (*Campylorhynchus brunneicapillus sandiegense*), a California species of special concern, is a large wren with a streaked back, densely spotted breast, and a distinctive white eyebrow stripe. This San Diego County resident bird is typically found on arid slopes with stands of cactus. Cactus wrens build their nests in cholla or other large branching cactus, yucca, or thorny shrubs and trees. Coastal cactus wrens were observed during surveys on the cactus-covered slopes surrounding the Los Coches Substation.

Under SDG&E's NCCP, this species is considered a narrow endemic and, as such, take authorization is limited to emergencies and unavoidable impacts from repairs to existing facilities. Take of the species for non-emergency work may not occur without first conferring with the USFWS and CDFG. Furthermore, for new projects, destruction of narrow endemic wildlife species or their supporting habitat would not be covered by the NCCP.

Coastal California Gnatcatcher (FT/SE)

The coastal California gnatcatcher (*Poliophtila californica californica*) is a federally listed threatened species and a state listed endangered species. Coastal California gnatcatchers are

obligate, permanent residents of coastal sage scrub vegetation, but they will make limited use of adjacent habitats outside of the breeding season. The designation of critical habitat for the coastal California gnatcatcher specifically excluded areas within functioning HCPs, such as SDG&E's NCCP. Although not designated as critical habitat, habitat for the coastal California gnatcatcher is located within the existing right-of-way. Potential habitat for the coastal California gnatcatcher is located throughout much of the project area. Coastal California gnatcatcher has been observed within or near the project near the Miguel Substation, north of the Sweetwater River, north of the Los Coches Substation, and within Mission Trails Regional Park. Focused surveys for coastal California gnatcatcher are ongoing and will be completed by summer 2002 to document their location along and within the existing right-of-way.

Least Bell's Vireo (FE/SE)

The least Bell's vireo (*Vireo bellii pusillus*) is both federally and state-listed as endangered. This species is migratory, spending its winters in Mexico and returning to southern California as a summer resident. The least Bell's vireo can be found in the region during breeding season, from March through August. They breed locally in willow riparian thickets with good over- and understory vegetation. Critical habitat for the least Bell's vireo has been designated along portions of the San Diego River and the Sweetwater River, but the existing project right-of-way itself does not cross critical habitat for least Bell's vireo. Riparian habitat crossed by the existing right-of-way was assessed for its potential to support least Bell's vireo, and no appropriate habitat was found. The existing right-of-way crosses riparian habitat, but these areas are small and narrow, and isolated from large areas of contiguous riparian habitat.

San Diego Fairy Shrimp (FE)

The San Diego fairy shrimp (*Branchinecta sandiegonensis*) is a federally listed endangered species. It is one of several small fresh water fairy shrimp species found in the southern California region. This shrimp is found in small, shallow vernal pools and ephemeral basins located in coastal southern California and northern Baja California, Mexico. Adult San Diego fairy shrimp are typically found in January to March when the vernal pools fill with water from winter rains. Because of the ephemeral nature of the pools the San Diego fairy shrimp hatches and matures from within seven days to two weeks and typically disappear from the pools after about a month. During this time eggs are laid and drop to the mud bottoms of the pool, where they will remain after the pool dries. When the pools fill with water (either during the same or later rainy seasons) the eggs may hatch.

The San Diego Mesa Hardpan vernal pools that San Diego fairy shrimp inhabit are endemic to the region and typically found on coastal mesas in western San Diego County. Vernal pools must have a subsurface of clay-soils with an iron-silica cemented hardpan that prevents water from percolating into the ground. San Diego Mesa Hardpan vernal pools are typically found clustered in complexes surrounded by chamise chaparral, annual grasslands, or coastal sage scrub vegetation. One such complex of vernal pools is known along the existing project right-of-way. This complex of vernal pools, located east of Interstate 15 and south of Santo Road, was designated by the USFWS as critical habitat for the San Diego fairy shrimp. Protocol surveys

were not conducted for San Diego fairy shrimp because these vernal pools are not expected to be impacted by the project.

Arroyo Southwestern Toad (FE/CSSC)

The federally listed endangered arroyo southwestern toad (*Bufo microscaphus californicus*) is a small, light-greenish-gray or tan toad restricted to rivers with shallow, gravelly pools with adjacent sand bars or terraces. The breeding season for these toads is from late March to mid-June, when they can be found in large streams or rivers, with shallow pools with minimal current, and with sand or pea gravel bottoms. The arroyo toad is of particular concern because it is difficult to detect during certain times in its life cycle. The arroyo toad breeds in stream habitats, but hibernates in and migrates through upland habitats up to 1 kilometer from known breeding sites, where it remains underground for much of the winter. This feature of this resident species' life cycle can complicate the assessment of impacts and determination of appropriate mitigation measures.

Although designated critical habitat for the arroyo southwestern toad encompasses portions of the existing right-of-way along the San Diego River and Sweetwater River and the adjoining upland habitat, the sections of the San Diego River and the Sweetwater River crossed by the right-of-way do not provide suitable habitat for arroyo toad. No standing or flowing water was observed during spring 2002 along the sections of these two rivers crossed by the project. Therefore, arroyo southwestern toads are not expected to occur in these areas or be affected by the project.

Quino Checkerspot Butterfly (FE)

The Quino checkerspot butterfly (*Euphydryas editha quino*) is listed as endangered by the USFWS. The USFWS has designated critical habitat for Quino checkerspot butterfly, encompassing a portion of the existing project right-of-way northeast of the Miguel Substation to State Route 94 (Campo Road), along the lower southwest slopes of Mother Miguel and San Miguel Mountains. This species is of particular concern due to its potential to occur within the existing right-of-way.

Once widely distributed in the inland valleys and coastal plains of Southern California, Quino checkerspot butterflies are known to exist currently in a few isolated areas of southern San Diego and southwestern Riverside Counties. This butterfly is found from sea level to 3,000 feet in elevation and requires open canopy scrub habitat with low-growing herbaceous annuals that include populations of the larval host plants, preferably dwarf plantain (*Plantago erecta*). Timing and abundance of rainfall affects host plant germination, growth and senescence, which in turn affect survivorship of butterfly larvae. The species typically requires a year to complete a full life cycle, but the larvae can undergo long periods, possibly lasting years, in a dormant stage during especially dry winters or drought years. Cool wet weather and winter rainfall stimulate host plant germination and feeding activities. Therefore, the larval stage of the Quino checkerspot butterfly may be present in areas where the host plants are not in bloom. Protocol surveys for the Quino checkerspot butterfly have been completed in appropriate habitat crossed by the existing project

right-of-way. No Quino checkerspot butterflies were observed within the right-of-way or in the immediate project vicinity.

Critical Habitat

Under the federal ESA, the USFWS, to the extent prudent and determinable, is required to designate critical habitat for endangered and threatened species (16 USC§1533 (a)(3)). “Critical habitat” describes the areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter.

Designated critical habitats require special management and protection of existing resources, such as water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types. Critical habitat designation delineates all suitable habitat, occupied or not, essential to the survival and recovery of the species.

Critical habitat for the arroyo southwestern toad, Quino checkerspot butterfly, and San Diego fairy shrimp occurs within portions of the existing project right-of-way. The designation of critical habitat for the coastal California gnatcatcher specifically excluded areas within functioning HCPs, such as SDG&E’s NCCP. Although not designated as critical habitat, habitat for the coastal California gnatcatcher is located within the existing right-of-way. A portion of the San Diego River and the Sweetwater River crossed by the existing project right-of-way is considered critical habitat for the arroyo southwestern toad. The right-of-way overlaps designated critical habitat for Quino checkerspot butterfly from the Miguel Substation to State Route 94 (Campo Road). The existing right-of-way also crosses a unit of critical habitat designated for the San Diego fairy shrimp on a mesa top east of Interstate 15 and south of Santo Road. In addition, proposed critical habitat for the Otay tar plant is within 0.5 mile of the Miguel Substation, on the northwest side of the Sweetwater River, and is crossed by the existing right-of-way.

Designated critical habitat for the least Bell’s vireo in the vicinity of the existing right-of-way is restricted to the San Diego River (in Mission Trails Regional Park) and the Sweetwater River (from the Sweetwater Reservoir to Steele Canyon Road). These portions of the least Bell’s vireo’s critical habitat come within 0.5 mile of the existing right-of-way, but are *not* crossed by the existing right-of-way.

A critical habitat designation affects only projects subject to federal action. Under projects subject to federal action, potential impacts to designated or proposed critical habitat would be evaluated by the USFWS under Section 7 of the ESA.

5.4 CULTURAL RESOURCES

5.4.1 Introduction

This chapter describes existing cultural resources in the Miguel–Mission 230kV #2 Project area. Cultural resources are generally defined as physical features associated with human activity. This could include districts, sites, buildings, structures, objects, and landscapes significant in American history, prehistory, architecture, archaeology, engineering, and culture.

The existing project right-of-way passes through the cities of San Diego and Santee, Marine Corps Air Station Miramar, and unincorporated areas in San Diego County. The terrain generally consists of rough foothills with steep valleys and ravines, with a few scattered commercial and residential areas. Vegetation in undeveloped areas consists of chaparral, coastal sage scrub, and grassland, or willow and oak woodlands in riparian areas. The existing project right-of-way crosses several significant drainages, such as the San Diego River, Sycamore Creek, Los Coches Creek, and Forrester Creek. Cultural resources tend to be located near drainages and relatively flat areas, such as mesa tops and valley bottoms.

5.4.2 Regulatory Framework

Various federal, state, and local guidelines are available for preserving cultural resources. The primary method employed by development projects in this state is the CEQA-mandated evaluation process. CEQA requires a review to determine if a project will have a significant effect on historical resources, archaeological resources, or human remains. The California Code of Regulations provides guidelines for implementation of CEQA.

The term "historical resources" as defined by CEQA Guidelines Section 15064.5 includes:

- A resource cited in, or determined to be eligible by the State Historical Resources Commission for listing in, the California Register of Historical Resources (Register).
- A resource included in a local register of historical resources identified as significant in an historical resource survey, unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- 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, using the following criteria:
 - is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
 - is associated with the lives of persons important in our past;

- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

The term “archaeological resource” is intended to describe a cultural resource that is not eligible for or listed on the Register but may have some importance. For an archaeological resource to be significantly affected by a project it must be deemed “unique,” as defined by CEQA Guidelines Section 15064.5. This is an archaeological artifact, object, or site, about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

- contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- has a special and particular quality such as being the oldest of its type or the best available example of its type;
- is directly associated with a scientifically recognized important prehistoric or historic event or person;
- is at least 100 years old and possesses substantial stratigraphic integrity; or
- involves important research questions that historical research has shown can be answered only with archaeological methods.

The determination of whether an archaeological site is unique is the responsibility of the lead agency, but it usually involves consultation with a qualified professional archaeologist to assess the significance of the resource. This requirement is intended to protect cultural resources that are not listed or eligible for the Register, but may be important nonetheless.

The term “human remains” tends to refer to Native American burials, but it can also include any items associated with a burial. In general, any human remains within a project area are considered a resource under the CEQA Guidelines and require an impact assessment. The Native American Graves Protection Act and its implementing regulations, as well as California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98, also address the discovery of Native American human remains.

The State Historic Resources Commission and the State Historic Preservation Office (SHPO) administer historic preservation programs. These agencies play an important role in the CEQA process. The commission's duties include overseeing administration of the Register of Historic Places. The SHPO's duties include overseeing state agency compliance with preservation statutes and programs and reviewing and commenting on the impact on historic resources of publicly funded projects and programs.

5.4.3 Cultural Overview

Native Americans

The project area is located in the southern portion of San Diego County. This area is the western territory of the Kumeyaay, the Yuman-speaking Indians who intruded and assimilated the local La Jollan culture between 1000 BC and 1000 AD. The Kumeyaay are further divided into the Ipai and the Tipai; the Ipai lived in territory extending from the San Diego River (approximately Interstate 8) north to Agua Hedionda Lagoon (approximately State Route 78) and then eastward through Escondido to Lake Henshaw; the Tipai lived south of the San Diego River into Baja south of Ensenada, and eastward to the Laguna Mountains and beyond Mount Tecate. The Tipai and Ipai were further divided into bands that spoke individual dialects and lived a loosely connected lifestyle, intermarrying among the bands.

Currently there are about 20,000 Kumeyaay descendants in San Diego County, about 10 percent of whom live on its 18 reservations.

Archaeology

Anthropologists believe that humans first settled in the San Diego area as early as 20,000 years ago along the coast and 12,000 years ago in the desert. The first recognized cultural group is the San Dieguito, dating to approximately 10,000 years ago. Big game hunting and exploitation of coastal resources characterize the San Dieguito complex. The artifacts associated with this period tend to be finely made scraping and chopping tools and large-stemmed projectile points. Seed grinding technology was absent or limited, suggesting dependence on big game.

Between 7000 BC and 1000 BC the San Dieguito complex evolved into or was assimilated by the La Jollan culture group. This period brought a shift toward a more generalized subsistence strategy and an increased emphasis on seed resources, small game, and shellfish. With the focus on gathering plant resources, a more permanent settlement pattern evolved. In addition, settlements moved away from the coast, perhaps due to depletion of coastal resources and siltation of lagoons. Artifacts from the La Jollan period are predominately rough, cobble-based choppers and scrapers and slab and basin metates.

After 1000 AD, Yuman and Shoshonean speaking groups migrated to the San Diego area, assimilating the La Jollan culture. Higher population densities and elaborations in the social, political, and technological system characterize this period. Acorns and grass seeds played an increased role in subsistence, with small game serving as the primary protein source and big game a secondary resource. Fish and shellfish became secondary food resources (except in the immediate vicinity of the coast where they assumed primary importance) as fishing and collection techniques improved. Seasonal villages characterize the settlement system where people utilized a central-based collecting subsistence strategy.

Historical Period

In the year 1542 Juan Rodriguez Cabrillo sailed into San Diego Bay and came ashore under the flag of Spain, probably near Ballast Point on Point Loma. He named his discovery San Miguel

and declared it a possession of the King of Spain. At this time the native population of the San Diego area included Luiseno, Cahuilla, Cupeno, Kumeyaay, and Northern Diegueno Indian groups. Sebastian Vizcaino mapped the coastline from Mexico to Oregon in 1602 and renamed the San Diego area for the Spanish Catholic saint San Diego de Alcalá.

Mexico began a campaign to protect its claim to California in 1769. The plan was to establish a mission at San Diego then head north toward Monterey. Christianization of the native peoples was secondary to the territorial goal. Land and sea parties composed of soldiers and Franciscan brothers, including Father Junipero Serra, traveled to the San Diego area from Mexico, establishing a camp near the present site of Old Town. The Mission San Diego de Alcalá and associated presidio were officially founded later the same year, the first of 21 missions along the California coast. The mission was relocated to its current location in 1774.

Mexico won independence from Spain in 1821, placing San Diego under Mexican rule. Old Town came into existence during the 1820s. Christianization of the natives and lessening of fear of attacks by foreign enemies, together with the disappearance of royal control over the presidio, encouraged people with orchards and gardens outside the walls to build houses convenient to their plots of land. In addition, 29 rancho grants comprising more than half a million acres were given by the Mexican government to persons living in San Diego County. The Spanish population was more than 600 residents by 1830.

The Mexican era brought about some radical changes: the destruction of the mission system and decommissioning of the presidio garrison, the creation of a ranchero class, development of local democracy and regional politics, and a steady economy based on the export of cattle hides. Despite these changes, the San Diego settlement and outlying ranchos were slow to develop during the Mexican period due to interference by the Mexican provincial government in Monterey and continued Indian incursions. With the fall of the missions, many Indians were left with no land or means of livelihood. Most of the project area was probably used for livestock grazing during this period.

In 1846, the United States declared war on Mexico. Within two years California was under American control. American merchants saw California's ports as key in their commercial expansion. With this take-over there were rapid changes in the region socially and culturally, but the ceding of San Diego to the United States brought no immediate boom. Americans moved into Old Town in the 1850s and 1860s, building new wooden structures in the New England style and remodeling some of the older adobes. In the 1870s, many Americans began moving south into the New Town area, closer to the bay, leaving behind abandoned homes.

The land boom in San Diego began with the development of the railroads. Several railroads were constructed in the San Diego area in the 1880s. One, the San Diego, Cuyamaca & Eastern, followed Warner's Pass to a connection with other roads from the east. Started in 1886, the line passed through El Cajon, Santee, and Lakeside. With the first transcontinental railroad from San Diego, The California Southern, was completed in 1885, it allowed for broader accessibility to the San Diego area. San Diego County grew rapidly, and by 1900 the population was 35,090.

5.4.4 Inventory Methods

A search of site record and archival information from the South Coastal Information Center was referenced to determine preliminary information on the recorded presence of listed or eligible cultural resources within or adjacent to the project area. As part of an unrelated communications project, RECON conducted a records search in 2000 for the existing right-of-way and immediate project area. In addition, SDG&E is planning to perform cultural resources field surveys for the Miguel–Mission 230kV #2 Project. Other information regarding potential cultural resources was obtained from city plans, Internet searches, state and national historic registers, aerial photographs, and maps of the existing project right-of-way.

5.4.5 Inventory Results

According to the 2000 records search, seven cultural resources sites were identified along the existing project right-of-way. The records search for that unrelated project listed pole sites and line pull locations where previous cultural resources investigations were conducted along the existing project right-of-way. Table 5-8 lists the approximate location of previous studies and recorded sites in the vicinity of the project.

Miguel Substation to Los Coches Substation

Approximately one-third of the existing pole sites were surveyed for cultural resources in a previous study conducted in 2000. Three archaeological sites have been identified along this segment. The first site is bedrock milling slick and associated artifact, located south of Dehesa Road. An ethnohistoric camp was recorded north of Jamul Drive. The third site consists of a projectile point fragment found southwest of Millar Ranch Road. One registered historical site is near this segment, La Canada De Los Coches Rancho, located west of the project area on Olde Highway 80. Cultural resources surveys have been performed in only a few areas. Previously unrecorded sites may exist along the existing project right-of-way.

Los Coches Substation to Fanita Junction

Cultural resources surveys were conducted in 2000 for approximately 45 percent of the pole sites in this segment. Two sites were identified, including a milling stone site near State Route 67, and a rock shelter/artifact scatter east of Louis A. Stelzer County Park. The *City of Santee General Plan* indicates an area of moderate potential for sites north of Princess Joann Road.

Approximately 1 mile of the existing project right-of-way passes through this area. Other areas with moderate potential for previously undiscovered sites are the right-of-way crossings at the San Diego River and Sycamore Creek. Thirty-five prehistoric sites are known to occur within the Santee city limits, ranging from isolated artifact occurrences to village sites with substantial midden deposits. Only a few historic sites have been recorded in Santee. One registered historic resource was identified in the vicinity of this segment, the Edgemoor Farm, located south of the existing project right-of-way on Edgemoor Drive. Based on information from the *City of Santee General Plan*, there is potential for previously unrecorded archaeological sites along this segment of the existing project right-of-way.

Table 5-8: Previous Cultural Resources Surveys

SEQ. Number	SDG&E Pole Number	Author and Year of Study	Recorded Cultural Resources Site
<i>Miguel Substation to Los Coches Substation</i>			
2/64	675934/971900	Townsend 1984	
5/62	675936/971898	Townsend 1984	
9/58	675940/971894	Townsend 1984	
11/56	675942/971892	Townsend 1984	
14/53	675945/971889	Townsend 1984, Kyle and Gallegos 1996	
17/51	675948/971887	Townsend 1984, Cheever 2000	
19/49	675950/971885	Townsend 1984, Cheever 2000	
22	675953/971882	Townsend 1984	
27	675958/971877	Townsend 1984	
28	675959/971876	Townsend 1984, Gallegos 1989	CA-SDI-10648
30	675961/971874	Cheever 2000	
32	675963/971872	Townsend 1984	
36	675967/971868	Townsend 1984	
37	675968	Gross and Ezell 1972	
40	675971/971865	Townsend 1984	
43	675974/971862	Gross and Ezell 1972 Cheever 2000, PRC Toups	SDM-W-1145
48	675979/971857	Gross and Ezell 1972, Cheever 2000	
52	675983/971853	Carrico 1973, Townsend 1984	CA-SDI-4892
55	675986/971850	Townsend 1984	
56	675987/971849	Townsend 1984	
59	675990/971846	Cheever 2000	
61	675992/971844	Townsend 1984	
<i>Los Coches Substation to Fanita Junction</i>			
12/131	576643/971929	Townsend 1984, Cheever 2000	
127	971925	Townsend 1984	

SEQ. Number	SDG&E Pole Number	Author and Year of Study	Recorded Cultural Resources Site
<i>Los Coches Substation to Fanita Junction (continued)</i>			
19/122	576650/971920	Townsend 1984, Cheever 2000	
21/120	576652/971918	Townsend 1984	
24/117	576655/971915	Townsend 1984	
28/113	576659/971911	Townsend 1984	
29/112	576660/971910	Townsend 1984, Cheever 2000	
30/111	576661/971909	Townsend 1984, Pignolo 1988	CA-SDI-9900
33/109	576663/971907	Townsend 1984	
34/108	576664/971906	Townsend 1984	
36/106	576666/971904	Townsend 1984	
37/105	576667/971903	Townsend 1984	CA-SDI-13652
39/103	576669/971901	McDonald and Palette 1998, Cheever, 2000, Townsend 1984	
<i>Fanita Junction to Mission Substation</i>			
6	873068	Cheever 2000	
8	873070	Cheever 1984	
20	873082	Cheever 2000	
28	873090	Hanna 1978	
35	873097	Hanna 1978, Cheever 2000	
36	873098	Hanna 1978	CA-SDI-13576, SDM-W-5732
39	873101	Fink 1973	
42	873104	Hector 1988	

Fanita Junction to Mission Substation

The western segment, Fanita Junction to Mission Substation, is within the City of San Diego. Cultural resources surveys were completed for approximately 20 percent of the existing structure sites along this segment. Two archaeological sites were identified, including a lithic scatter and a rock wall. Both are located north of State Route 52. Numerous historical landmarks are in the vicinity of the west end of the project, including the Old Town district and The Presidio site approximately 3.5 miles to the west of the Mission Substation. The Mission San Diego de Alcalma and associated Old Mission Dam are within 0.5 mile of the existing right-of-way, where it passes through Mission Trails Regional Park.

The San Dieguito River Valley is known to contain over 350 recorded archaeological sites, representing 9,000 years of Native American occupation. The existing right-of-way crosses a few other canyon drainages south of Fanita Junction. Much of the project area is undeveloped. Based on these observations, an incomplete inventory of cultural resources surveys along the existing project right-of-way (and in the region), and the significant historical sites in the vicinity, there is potential to encounter previously unrecorded archaeological sites along this segment of the existing project right-of-way.

5.5 GEOLOGY, SOILS, MINERAL RESOURCES, AND PALEONTOLOGY

5.5.1 Introduction

This chapter describes the existing geology, geologic hazards, and paleontology associated with the Miguel–Mission 230kV #2 Project.

5.5.2 Setting

The project area has two distinctive geomorphological areas, the coastal plain of the Coastal Province and the foothills of the Peninsular Range Province. The project segment between Fanita Junction and the Mission Substation primarily falls within the coastal plain. Relatively flat plains rising up to dissected, mesa-like terraces that graduate into rolling hills generally characterize it. This area is underlain by formations composed of sandstone, shale, and conglomerate beds. The eastern portion of the project, between the Miguel and Los Coches Substations, is primarily situated in the foothills between the coastal plains and the mountains at elevations from 600 to 2,000 feet. Underlying this region are plutonic parent materials formed from cooling magmas. Granitic rocks, coupled with the natural processes of weathering, yield topography of rounded hilltops and moderate to very steep slopes. The project area between Los Coches Substation to Fanita Junction transitions between the two geomorphic provinces from east to west.

5.5.3 Inventory Methods

Methods for evaluating geology, geologic hazards, and paleontology included reviews of existing project and resource-specific studies, maps, and Internet sites, and communications with regional agencies, such as the California Division of Mines and Geology and the San Diego County Resource Planning Division, relevant published and unpublished geologic reports, unpublished paleontological, and museum paleontological site records from the Department of Paleontology, San Diego Natural History Museum.

The paleontological records search was conducted to determine preliminary information on the recorded presence of paleontological resources within or adjacent to the existing project right-of-way, and was originally conducted for an unrelated project proposed along the same general route as the Miguel–Mission 230kV #2 Project. Field inspection of the project area and the existing right-of-way was not conducted for this PEA.

5.5.4 Inventory Results

Geology

The Miguel Substation is located at the base of Mother Miguel Mountain in the San Miguel Mountain complex. This complex is underlain by the Santiago Peak Volcanics including metavolcanic metasedimentary rocks that transition in the northeast to Granitic Rocks as the range forms the southern walls of Steele Canyon. Granitic mountains with steep slopes and riverbeds of Colluvial and Alluvial deposits persist from Steele Canyon past the Los Coches Substation, then east to Sycamore Canyon. Here, steep slopes of Stadium Conglomerate underlie Pomerado Conglomerate and lesser slopes consist of Friar and Stream Terrace Deposits.

Eight geologic formations are mapped within the project area from Fanita Junction (west side of Sycamore Canyon) to the Mission Substation. Approximately the first 4 miles of the existing right-of-way southwest of Fanita Junction traverses mountains underlain by Stadium Conglomerate. The Friars Formation lines the lower slopes of canyon walls, while Alluvium and Slopewash bed their floors. The next 1.4 miles adjacent to Fortuna Mountain cross undifferentiated granite rocks of the southern California batholith. The next mile takes the project up steep slopes of Mission Valley Formation to high plateaus of Pomerado Conglomerate nearly 800 feet above sea level. A transition occurs at the lower elevations where the Lindavista Formation forms the higher plateaus and is underlain by steep slopes of Stadium Conglomerate and shallower slopes of Friars Formation. This arrangement continues to the Mission Substation. The following are descriptions of individual geological formations as summarized from California Division of Mines and Geology Bulletin 200.

Undifferentiated Santiago Peak Volcanics

The Santiago Peak Volcanics consist of mildly metamorphosed volcanic, volcanoclastic, and sedimentary rocks. Volcanic rocks range from basalt to rhyolite, but are predominately andesite and dacite. They are generally stable to semi-stable on slopes, but due to severe jointing and steep slopes, this formation is subject to raveling, erosion, rock fall, and debris flow.

Stadium Conglomerate

Stadium Conglomerate lies within the southwestern quarter of the La Mesa quadrangle, and is approximately 1 mile west of Murphy Canyon Road along the northern wall of Mission Valley near Qualcomm Stadium. It consists of a cobble conglomerate with a dark yellowish-brown, coarse-grained sandstone matrix, and contains dispersed lenses of fossiliferous crossbedded sandstone.

Friars Formation

This formation is a nonmarine and lagoonal sandstone named for exposures along the north side of Mission Valley near Friars Road in the La Jolla quadrangle. The sandstone is massive, yellowish gray, medium drained, poorly indurated, and caliche-rich, while the claystone is dark greenish-gray, well indurated, and expansive. Landslides are common in the clay-rich part of the formation that is primarily composed of morillonite.

Alluvium and Slopewash

Alluviums in the area consist primarily of poorly consolidated stream deposits of silt, sand, and cobble-sized particles derived from bedrock sources. Slope wash is the result of unconsolidated materials from nearby soils deposited on lower slopes by the action of gravity. Because these deposits are often intermixed, they are usually not differentiated from one another.

Granitic Rocks

Plutonic rocks in the area are quartz diorite and gabbro. The quartz is typically coarse-grained, light gray, and contains large phenocrysts of plagioclase and potassium feldspar. The gabbro

varies in texture and composition, but is mostly medium to coarse grained and medium dark gray.

Mission Valley Formation

This formation is composed of marine, lagoonal, and nonmarine sandstone that lies upon the Stadium Conglomerate overlain by the Pomerado Conglomerate. The sandstone is characteristically soft and friable, light olive gray, and fine- to medium-grained.

Pomerado Conglomerate

This is the uppermost formation of the Poway Group, having a maximum thickness of 55 meters. A massive cobble conglomerate, lithologically it is identical to the Stadium Conglomerate. Occasional thin beds, lenses, and tongues of light brown, medium-grained sandstone characterize both.

Lindavista Formation

The formation consists of near-shore marine, beach, and nonmarine sediments deposited on a 10 km wide wave-cut platform. In this area, Lindavista is reddish-brown. Ferruginous cement, mainly hematite, gives it its characteristic color and a resistant, ledgy nature.

Stream Terrace Deposits

Rare within the project area, these formations include a poorly consolidated, conglomeratic sand deposit near the confluence of Sycamore Canyon and the San Diego River channel.

5.5.5 Soils

Soils in the immediate project vicinity, as fully described below, range from silty clay to granitic rock. The U.S. Department of Agriculture (USDA) has assigned the 34 soil associations in the San Diego area to eight groups. The project would cross five of these groups, namely III, IV, VI, VII, and VIII. Table 5-9 summarizes the soil groups and soil associations within the project area. The grouping is based on soil characteristics, qualities, and on location of the associations in the specified physiographic province.

Group III

Two soil associations of the San Diego area fall within this group, representing 4 percent of the entire area. The project crosses only the Visalia-Tujunga association that accounts for approximately 7 percent of its alignment. The soils in this group are excessively drained to moderately well drained sands, loamy sands, sandy loams, gravelly sandy loams, clay loams, and clays. They formed in material derived from marine sandstone, shale, and granitic rock. Elevation ranges from near sea level to 2,000 feet with slopes from 0 to 9 percent.

Table 5-9: Soil Associations and Approximate Percentages in Project Area

Group Number	Association Number	Association Name	Percentage Mapped Along Existing Project Right-of-way
III	7	Visalia-Tujunga, 0–9 percent slopes	7
IV	12	Redding-Olivenhain, 9–50 percent slopes	28
VI	21	Fallbrook-Bonsall, 2–9 percent slopes	22
VI	23	Cieneba-Fallbrook, 9–7 percent slopes	17
VI	25	Exchequer-San Miguel, 30–75 percent slopes	12
VI	26	Friant-Escondido, 30–70 percent slopes	7
VII	27	Diablo-Altamont, 5–15 percent slopes	2
VII	28	Diablo-Linne, 15–50 percent slopes	2
VIII	34	Rock land, (slope not provided)	3

Group IV

The project crosses one (Redding-Olivenhain) of the five associations in this group. At approximately 28 percent, this single association represents soil types that will be traversed by the project the most. Formed by a variety of alluvial derivatives, the soils in this group are somewhat excessively drained, to moderately well drained loamy coarse sands, to gravelly clay loams. The subsoil can range from loamy coarse sand to clay. They are typically found from near sea level to 1,800 feet on slopes ranging from 0 to 50 percent.

Group VI

The group as a whole makes up 30 percent of the San Diego area. Four of its seven associations are crossed by the project cumulatively, composing 58 percent of the alignment. Soils are excessively drained to moderately well drained sandy loam to silt loams that have subsoils similar to Group IV. They are found from 200 to 3,500 feet on slopes that range from 2 to 75 percent.

Group VII

The Diablo-Altamont and Diablo-Linne associations are two of the five associations of this group that underlie the existing project right-of-way. Together they make up approximately 4 percent of the total alignment found in the uplands of Coastal Plain Areas. Derived from marine sandstone, shale, and breccias, these soils are well drained and moderately well drained loamy

fine sands to clays. Suitable elevations range from near sea level to 1,800 feet on slopes from 5 to 75 percent.

Group VIII

The miscellaneous land types in this group vary considerably in soil characteristics and qualities. They are used only for wildlife habitat, watershed, and recreational areas.

5.5.6 Mineral Resources

In general, for the entire length of the existing project right-of-way, mineral resources include extensive deposits of sand, gravel, and metavolcanic rock suitable for use as aggregate in highway asphalt, portland cement, and ceramic products. Large reserves of decomposed granite, small tonnages of pyrophyllite, and minor amounts of arsenopyrite, gold, silver, and uranium are also present. Clay in the Friars Formation has not been commercially mined within the mapped area, but it represents a potential source of expansible clay, fire clay, and lightweight aggregate.

The Mission Substation is located immediately west of a gravel pit situated north of Friars Road, jointly operated by Vulcan Materials (approximately 220 acres) and Hansen (approximately 20 acres).

5.5.7 Geological Hazards

Geological hazards encompass those problems or complications to an existing or proposed project that result from natural episodic events interacting with the specific geology, soils, and natural features of an area. Hazards from seismic activity include strong vibratory ground motions from local and regional seismic sources, potential surface fault rupture, and liquefaction. Other geotechnical hazards include ground subsidence due to groundwater withdrawal and ground deformation due to expansive soils. Landslides or slope hazards include surficial failures, earth flows, rock falls, erosion, soil creep, and mud flooding.

Seismicity

The project area is located within a highly active seismic region. The two major faults that can create major earthquake damage in San Diego County are the Elsinore and Rose Canyon faults.

The Elsinore Fault is the largest right-lateral, strike-slipping fault in southern California, approximately 180 kilometers in length, and neighbors the Temecula, Lake Elsinore and Julian communities. The estimated interval between major ruptures is roughly 250 years, with a probable general moment magnitude (M_w) of 6.5 to 7.5. The last major earthquake thought to have originated from Elsinore was in 1910, and no surface ruptures were found. The Elsinore Fault lies, at its closest point, approximately 25 miles northeast of the existing project right-of-way.

The Rose Canyon Fault underlies a heavily populated area of San Diego County and can potentially cause significant damage. Much smaller, at about 30 kilometers in length, its faulting type is similar to that of Elsinore. Ongoing field and laboratory studies suggest a maximum

magnitude from 6.2 to 7.0. There is no estimated rupture interval with the most recent surface rupture occurring within in the Late Quaternary or Holocene epoch. The Rose Canyon Fault runs approximately northwest to southeast, and is located west of the existing project right-of-way, approximately 4 miles from the Mission Substation and 9 miles from the Miguel Substation.

The Point Loma Fault lies 7 miles to the west of the Mission Substation, near the communities of Point Loma, Ocean Beach, Coronado, and San Diego. This fault lies to the west of the Rose Canyon Fault and is approximately 12 kilometers in length. This fault is classified as normal and runs along the length of the Point Loma Peninsula. There is no estimated rupture interval with the most recent surface rupture occurring within in the Late Quaternary period (approximately 700,000 years ago).

Liquefaction

Liquefaction of soils occurs when the ground shakes during seismic events greater than 5.0 in magnitude, the soils contain less than 15 percent clay material, and the soils are saturated with water. As the shaking continues, the soil loses its supporting structure due to the temporary increase in pore water pressure, essentially turning into a quicksand-like material for the duration of the seismic event. The susceptibility for liquefaction of soils is low in the project area; however, it is possible that pockets of liquefiable materials could occur, specifically along riverbeds. No work is expected within 100 feet of river crossings.

Ground Subsidence

Ground subsidence is the actual lowering of the ground surface as soil dries and compacts due to changes in subsurface water content. Changes to subsurface water can be the result of man-made drainage systems used to stabilize localized areas and withdrawal from aquifers. The effects of ground subsidence are not common within the project area due to very low existing water tables.

Expansive Soils

The shrink-swell properties of some soils can be very damaging to structures and are therefore important to identify before determining construction methods. Soils with high shrink-swell potential predominantly occur on the coastal plains (i.e., Fanita Junction to Mission Substation). Soils of the foothills (i.e., Miguel Substation to Fanita Junction) generally have moderate shrink-swell potential and major alluvial plains have the least.

Landslides

A landslide is a mass of rock, soil, and/or debris that have been displaced downslope by sliding, flowing, or falling. Susceptibility to future landsliding is highest in those areas where appropriate topographic and geologic conditions have already produced slope failures.

Between Fanita Junction and the Mission Substation, the project crosses two sites known to have produced landslides rated “Most Susceptible” by the California Division of Mines and Geology. To date, existing lines in the project area have not experienced damage from landslides. These sites were mapped for landslides taking into account all types of slope failure/movement hazards and delineated using a subjective scale. (See Table 5-10.)

Table 5-10: Scale of Landslide Susceptibility

1	2	3-1	3-2	4-1	4-2
Least Susceptible	Marginally Susceptible	Generally Susceptible		Most Susceptible	

One site is located on the slopes adjacent to the U.S. Naval Recreation Facilities. The other lies approximately 2 miles to the northeast of these facilities. Both locations are underlain by the Friars Formation and have soils with highly expansible clays. The landslide potential is “Generally Susceptible” in the foothills from Miguel Substation to Fanita Junction. The highest general rating (“Most Susceptible”) for landslide potential is found between Fanita Junction and the Mission Substation.

5.5.8 Paleontology

Paleontological resources are the fossilized remains and/or traces of prehistoric plant and animal life exclusive of human remains or artifacts. Fossil remains such as bones, teeth, shells, and wood are found in geologic deposits (rock formations). Significant paleontological resources represent a limited, non-renewable, and sensitive scientific and educational resource.

Geologic conditions along the existing project right-of-way consist of late Pleistocene- to Holocene-age fluvial and/or alluvial deposits mapped as Quaternary alluvium, early Pleistocene-age terrace deposits of the Lindavista Formation, late Pliocene-age marine sandstones of the San Diego Formation, and middle Eocene-age fluvial and marine sandstones and conglomerates of the Mission Valley Formation and Stadium Conglomerate.

River Terrace Deposits

The sediments at the bottom of streambeds of the later Quaternary alluvium are generally younger than 10,000 years old. Fossils are usually not found in these deposits in the Coastal Plain Province. The floors of Otay Valley, Mission Valley, Rose Canyon, Sorrento Valley, and San Dieguito Valley are sites of later Quaternary alluvial deposits. Because of their young age, they are assigned low paleontological resource sensitivity.

Late Quaternary Alluvium

The sediments at the bottom of streambeds of the later Quaternary alluvium are generally younger than 10,000 years old. Fossils are usually not found in these deposits in the Coastal Plain Province. The floors Mission Valley are the sites of where later Quaternary alluvial deposits are found. Because of their young age, they are assigned a low paleontological resources sensitivity.

Lindavista Formation (Pleistocene)

This distinctive rust-brown-colored formation represents a marine and/or nonmarine terrace deposit. These deposits accumulated on the sea floor during a period of dropping sea levels. Today these deposits form the extensive mesa surfaces characteristic of the Otay Mesa, San Diego Mesa, Linda Vista Mesa, Kearny Mesa, and Mira Mesa areas. Fossils are rare in the Lindavista Formation; they have been recorded in only a few areas. The formation is assigned a low resources sensitivity.

Mission Valley Formation (Eocene)

The marine strata of the Mission Valley Formation have produced abundant and generally well-preserved remains of marine microfossils (e.g., foraminifers), macroinvertebrates (e.g., clams, snails, crustaceans, and sea urchins), and vertebrates (e.g., sharks, rays, and bony fish). Fluvial strata of the Mission Valley Formation have produced well-preserved examples of petrified wood and fairly large and diverse assemblages of fossil land mammals including opossums, insectivores, bats, primates, rodents, artiodactyls, and perissodactyls.

The co-occurrence in the Mission Valley Formation of land mammal assemblages with assemblages of marine microfossils, mollusks, and vertebrates is extremely important because it allows for the direct correlation of terrestrial and marine faunal time scales. The Mission Valley Formation represents one of the few instances in North America where such comparisons are possible. The Mission Valley Formation is considered to have a high paleontological resource sensitivity rating.

Stadium Conglomerate (Eocene)

Fossil foraminifers and marine mollusks have been collected from the upper member of the Stadium Conglomerate in the western part of the old Fenton Quarry in Murray Canyon. The upper member is largely non-marine in the eastern part of its outcrop area. Collecting sites in Murphy Canyon have yielded sparse but well-preserved remains of opossums, insectivores, primates, rodents, carnivores, rhinoceros, and artiodactyls. In Mission Valley, sparse marine fossil remains occur near the base of what is here called the lower member of the Stadium Conglomerate. Exposures of the lower member at Scripps Ranch are primarily non-marine and have produced well-preserved remains of land mammals including opossums, insectivores, primates, rodents, carnivores, and artiodactyls. The majority of the fossils recovered from the lower member were found in either claystone rip-up clasts or in the sandy matrix characteristic of certain channel-fill deposits in this rock unit. These deposits are assigned a high resource sensitivity rating.

Friars Formation (Eocene)

The Friars Formation consists mainly of sandstones siltstone, mudstones and cobble conglomerate. It is rich in vertebrate fossils, especially terrestrial mammals such as primates, rodents, artiodactyls, and perissodactyls. Well-preserved remains of marine microfossils and macro invertebrates, and remains of fossil leaves have been recovered from the Friars Formation. The formation crops out from Mission Valley north to Rancho Bernardo in the east, and Rancho

Santa Fe in the west. In the south, the formation extends from Tecolote Canyon east to Santee and Lakeside. This formation is given high paleontological resource sensitivity.

Pomerado Conglomerate (Eocene)

The lower portion of the Pomerado Conglomerate has produced remains of fossil terrestrial mammals including primates, protoreodonts, and insectivores. The middle part of the conglomerate has yielded remains of near-shore marine mollusks, as well as unidentifiable mammal bone fragments. The upper conglomerate member has yielded a single fragmentary jaw of an unidentified artiodactyl. The Pomerado Conglomerate crops out from La Mesa to the south to at least Miramar Reservoir in the north, and from there eastward to Santee. Because of the predominantly coarse-grained nature of the Pomerado Conglomerate and its largely unproven resource potential, it is assigned moderate paleontological resource sensitivity.

5.6 HAZARDS AND HAZARDOUS MATERIALS

5.6.1 Introduction

The section provides an inventory and a full description of hazards and hazardous materials for the Miguel–Mission 230kV #2 Project area.

5.6.2 Setting

The existing project right-of-way lies within urban and rural/suburban areas that have predominantly open space, residential, commercial/retail, or light industrial usage. The existing project right-of-way is not in proximity to any large objects capable of capacitating induced current. The region is dry and vegetation susceptible to wildfire is abundant. The existing conditions in the project area present a low risk of impacts related to hazards and hazardous materials.

5.6.3 Inventory Methods

Information regarding hazards (induced current and fires) and hazardous materials was obtained from existing SDG&E data, as well as from maps of the project area. Aerial photos were examined to determine the proximity of the existing project right-of-way area to potential hazardous materials sites. Onsite surveys confirmed the aridity of the project area. In addition, background research was conducted using the Comprehensive Environmental Response, Compliance, and Liability Act (CERCLA) to determine whether any hazardous waste sites exist in or in the vicinity of the project right-of-way. The Clean Air Act, CWA, Toxic Substances Control Act, and the Resource and Recovery Act were also consulted.

5.6.4 Inventory Results

Induced Current

Induced current comprises both electric and magnetic induction. Voltage is transferred from transmission lines onto objects in the immediate area. A person or animal coming in contact with the object may experience an electric discharge similar to that of touching a doorknob after walking across a carpet in dry weather. The existing transmission lines in the existing right-of-way currently contribute to induced current; however, the effect is negligible.

Electric induction involves an electrical interaction between a transmission line and a nearby conductive object, referred to as “capacitive coupling.” In this type of coupling, a voltage is transferred onto objects near a transmission line, such as tree limbs, vehicles, and buildings. The voltage that is induced from the powerline is primarily a function of transmission line voltage, insulation characteristics, object dimensions, and transmission line height.

Magnetic induction occurs when conducting objects are parallel to transmission lines. Typical objects that might have such an induced current are fences, pipelines, and wires. The important concept here is that the conducting object must parallel the line to cause any significant induction effects. More specifically, the maximum induced voltage occurs when a transmission line and

another conducting object are parallel. Conversely, when a transmission line and a conducting object are perpendicular, magnetic induction is effectively cancelled out. The induced voltage is primarily a function of the transmission line's voltage and height, and the object's distance from the transmission line.

Fires

The risk of wildland fires in the project area is possible given the dry climate and vegetation in the existing right-of-way. Currently, the San Diego region is experiencing a severe drought, with 2002 rainfall in January, February, and March measuring 5.14 inches below the normal annual rainfall (for January 1 through March 31) of 5.72 inches. Fire-adaptive species of plants, such as those found in coastal sage and chaparral communities, are abundant along the project right-of-way, particularly in the less developed open spaces. These species are especially susceptible to wildfires, and, in fact, fire is a healthy and necessary component of their life cycle.

Common causes of fires include driving or parking vehicles where catalytic converters could ignite dry vegetation or utilizing construction equipment that produces heat or sparks. Transmission lines may pose a threat of fire when a conducting object, such as a tree limb, comes in proximity to the transmission line and receives voltage, which results in a spark. Transmission lines also pose a fire hazard if a live phase conductor falls to the ground and ignites dry vegetation.

Several agencies, including the San Diego Rural Fire Protection District, the San Diego and Santee Fire Departments, and the California Department of Forestry and Fire Protection provide fire protection in the project area.

Hazardous Materials

A hazardous substance is any substance that the EPA has designated as hazardous, dangerous, or toxic under the Clean Air Act, 42 U.S.C. 7401 et seq., the CWA, 33 U.S.C. 1251 et seq., the Toxic Substances Control Act, 15 U.S.C. 2601 et seq., the Comprehensive Environmental Response, Compliance, and Liability Act, as well as any hazardous waste under the Resource Conservation and Recovery Act of 1976.

The Occupational Safety and Health Administration (OSHA) and the EPA at the federal level and the California Occupational Safety and Health Administration (Cal/OSHA) and the California Environmental Protection Agency (Cal/EPA) at the state level regulate hazardous materials. At the local level, the Hazardous Materials Division of the San Diego County Department of Environmental Health is primarily responsible for hazardous materials regulations, as well as for underground tanks for the storage of hazardous materials. The San Diego Air Pollution Control District and the previously listed local fire departments also manage various aspects of hazardous materials use. The U.S. Department of Transportation (DOT) regulates transportation of hazardous materials.

Numerous gasoline storage tanks (existing service stations) and other contained petroleum product facilities exist in the vicinity of the existing project right-of-way. However, none of these

facilities or storage tanks lie within the right-of-way. One landfill exists approximately 1 mile southwest of Fanita Junction, immediately south of the right-of-way. Except for in residential areas (for which hazardous materials usage is generally minimal), the types of bulk hazardous materials currently stored and/or used in the project area predominantly will be petroleum hydrocarbons in underground storage tanks, such as those at service stations or auto repair shops; or in aboveground storage tanks, such as those at farm or ranch operation centers.

Construction would require the temporary, short-term use of potentially hazardous materials, such as fuels, lubricating oils, and hydraulic fluid. The presence of hazardous materials or hazardous wastes within the project area pose a threat to the environment only if substances are improperly stored or handled, if construction equipment leaks or spills petroleum or hydraulic fluids, or if hazardous materials are encountered during excavation of foundations resulting in inadvertent releases to the environment.

It appears unnecessary at this stage to acquire land for this project, and a search of the Comprehensive Environmental Response, Compliance, and Liability Act database did not produce any known hazardous materials within the existing project right-of-way. As a result, a detailed hazardous materials inventory was not created.

5.7 HYDROLOGY AND WATER QUALITY

5.7.1 Introduction

This section briefly describes the existing hydrology and water quality in the Miguel–Mission 230kV #2 Project area. The existing project right-of-way passes through the cities of San Diego and Santee, along with unincorporated San Diego County. Most the existing project right-of-way crosses vacant land, with pockets of residential and commercial development. Undeveloped lands in the vicinity predominantly comprise rough foothills with steep valleys and ravines. Vegetation consists mainly of grassland, chaparral, and coastal sage scrub. Waterbodies in the project area include perennial and intermittent drainages of varying widths.

5.7.2 Regulatory Framework

The San Diego Basin is under the jurisdiction of the RWQCB. In addition, San Diego County has been authorized by the San Diego RWQCB to regulate discharges to its storm drains.

The following authorities regulate water quality in the project area.

- EPA
- SWRCB
- San Diego RWQCB
- San Diego County
- Cities of San Diego and Santee

The following sections describe applicable federal, state, and local water quality requirements.

San Diego County

The entire project is located within San Diego County. Water quality and flood control issues in San Diego County are under the jurisdiction of the San Diego RWQCB and the San Diego County Flood Control District.

Federal and State

Stormwater Pollution Prevention Plan

The SWRCB and the RWQCB implement the federal CWA NPDES and stormwater programs under the Porter-Cologne Water Quality Control Act pursuant to delegation of authority approved by the EPA. Projects that will disturb more than 5 acres are required to obtain coverage under the SWRCB's General Permit for stormwater discharges associated with construction activity. A Notice of Intent (NOI) is submitted to the SWRCB to be covered by the General Permit prior to initiating construction. The General Permit requires the implementation of a Storm Water Pollution Prevention Plan (SWPPP), which must be prepared before construction begins. (Additionally, any construction activities taking place on Indian lands require an NOI to be submitted and a SWPPP to be prepared for the EPA.)

The SWPPP will include:

- specifications for best management practices that will be implemented during project construction to minimize the potential for accidental releases and to minimize runoff from the construction areas, including storage and maintenance areas and building materials laydown areas;
- a plan for communicating appropriate work practices to field workers; and
- a plan for monitoring, inspecting, and reporting any release of hazardous materials.

During construction, the San Diego RWQCB oversees and inspects projects for the SWRCB.

Section 404 Permits

“Waters of the U.S.,” including wetlands, are subject to ACOE jurisdiction under Section 404 of the CWA. Section 404 regulates the filling and dredging of U.S. waters. In general, ditches excavated on dry land that do not convey flows from historical streams are considered nonjurisdictional. The ACOE determines this on a case-by-case basis. A Section 404 permit is required for construction activities involving excavation from or placement of fill material into “waters of the U.S.” A water quality certification, pursuant to Section 401 of the CWA, is required for Section 404 permit actions. A water quality certification (or waiver thereof) may also be required from the San Diego RWQCB.

Streambed Alteration Agreements

Sections 1601–1603 of the CDFG Code protect the natural flow, bed, channel, and bank of any river, stream, or lake designated by the CDFG in which there is either an existing fish or wildlife resource or a resource from which these resources derive benefit. General project plans must be submitted to CDFG in sufficient detail to indicate the nature of planned construction where the project would:

- divert, obstruct, or change a streambed;
- use material from the streambeds; or
- result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a stream.

Watershed Setting

The Miguel–Mission 230kV #2 Project occurs within the San Diego Basin. The existing project right-of-way crosses the following regional watersheds: Penasquitos, Pueblo San Diego, Sweetwater, and San Diego. These watersheds span heavily populated areas, as well as more sparsely populated unincorporated areas of San Diego County.

5.7.3 Inventory Methods

Hydrology and water quality data were obtained by reviewing city and county general plans, the *Watersheds of the San Diego Region* report, and the RWQCB's *Water Basin Plan* for the project. Surface water in the project area was evaluated by direct observation in the field.

5.7.4 Inventory Results

Precipitation

Annual average precipitation for the project area is 10 inches per year, and primarily occurs as rainfall. The flow of surface and ground waters in the area is generally east to west, eventually draining to the Pacific Ocean. Most of San Diego County's annual rainfall arrives during the winter months. Of the county's 10 mean inches of rain per year, approximately 50 percent of it falls from December to February. Only 2 percent of the annual rainfall comes during the summer months. January and March are the two wettest months, with an average of 1.8 inches of rainfall per year.

Surface Waters

Surface water resources on the project include two perennial rivers (San Diego and Sweetwater), three ephemeral creeks and 34 unnamed ephemeral tributaries/drainages. Most rivers and creeks in San Diego County are ephemeral due to the seasonal nature of rainfall and the relatively low yearly rainfall totals. Some drainages have perennial and ephemeral segments due to effects from dams or other artificial blockages. Imported water adds to each watershed in the form of runoff from urban, agricultural, and water storage activities, sometimes producing flow in drainages when they would otherwise be dry.

Rivers and Streams

The four regional watersheds in the project vicinity are the Penasquitos, Pueblo San Diego, Sweetwater, and San Diego. The San Diego watershed encompasses 440 square miles within Santee, La Mesa, El Cajon, and central San Diego. Most waterbodies, including San Vicente Creek, Los Coches Creek, Forrester Creek, and the San Diego River, crossed by the project lie within this watershed, as do the numerous unnamed ephemeral tributaries or drainages.

The Sweetwater watershed encompasses approximately 230 square miles. Areas within this watershed include National City, Chula Vista, Lemon Grove, and unincorporated communities to the east. The project crosses the Sweetwater River and 12 unnamed ephemeral tributaries to the river.

The Penasquitos and Pueblo San Diego watersheds are on the fringes of the project. Pueblo San Diego includes western portions of Chula Vista and Lemon Grove and southern San Diego. The Penasquitos watershed spans Del Mar, Poway, Miramar, and northern San Diego. The project crosses no waterbodies within these watersheds.

Wetlands

The existing project right-of-way crosses the San Diego River and the Sweetwater River. A vernal pool complex is located approximately 1,000 feet southwest of the end of Santo Road that has been fenced off. Another potential vernal pool feature lies 1,000 feet northwest of the Mission Village Drive/Friars Road junction.

Reservoirs, Ponds, Lakes

The Santee Recreation Lakes are the only existing open water storage areas that the project would cross (span). The existing right-of-way traverses an area of the lake system that is currently dry (low water levels expose the lakebed). The existing project right-of-way also skirts the western perimeter of Lake Jennings, which lies on unincorporated county land.

Stormwater Management System and Flooding Potential

Urban areas along the existing project right-of-way control stormwater runoff with storm drains and flood channels. Runoff is directed to large creeks and rivers. Portions of the San Diego River channel have been improved with earthen and rip-rapped banks to mitigate potential flood hazards. In undeveloped areas of the project, storm runoff flows along the natural drainages. The Federal Emergency Management Agency provides information regarding flood zones. The project crosses the 100-year flood zones of San Vicente Creek, San Diego River, and Sweetwater River. Most of the tributaries associated with these rivers are also located within these flood zones. Approximately 0.3 mile of the project lies within the 100-year flood zone of rivers in the region.

Dam Failure Inundation Area

The Office of Emergency Services has identified inundation areas for dam failures in California. The existing project right-of-way crosses the inundation zone of three local reservoirs, El Capitan, San Vicente, and Loveland.

El Capitan Reservoir is located along the San Diego River. In the event El Capitan Dam fails, water would flow west into Santee, crossing the existing project right-of-way between Louis A. Stelzer County Park and Los Coches Substation.

San Vicente Reservoir is located along San Vicente Creek. In the event San Vicente Dam fails, waters would flow along the downstream portion of the creek, which joins the San Diego River near the community of Moreno. The existing project right-of-way crosses the inundation area between Route 67 and Wildcat Canyon Road.

Loveland Reservoir is located along the Sweetwater River. Waters from failure of the dam would flow along the river toward Jamacha, crossing the existing project right-of-way at the Cottonwood at Rancho San Diego Golf Club.

Surface Water Quality

The San Diego Basin Plan describes water quality objectives for surface water in the project area. Wildlife habitat, agricultural supply, and recreation are among the beneficial uses that the objectives seek to protect. The quality of surface water is affected by stormwater runoff and runoff from industrial, commercial, and agricultural activities in the region. The RWQCB uses permits and other programs to regulate and reduce pollution of surface waters.

Groundwater

Groundwater basins can be found along major drainages in San Diego County. Mission Valley Basin, Santee/El Monte Basin, and Sweetwater Basin lie in the project vicinity. These groundwaters have been developed for municipal and agricultural uses. The groundwater basins are typically shallow and susceptible to pollution.

5.8 LAND USE, PLANNING, RECREATION, AND AGRICULTURAL RESOURCES

5.8.1 Introduction

This chapter describes the land use jurisdiction, existing and planned land use, recreation, and agricultural resources within the Miguel–Mission 230kV #2 Project area.

5.8.2 Land Use Setting

Overall, the land use setting in the project area project includes communities primarily comprised of single-family residential housing, county and city parks, golf courses, and the San Diego National Wildlife Refuge Otay-Sweetwater Unit. The existing project right-of-way crosses unincorporated areas of southern San Diego County, the cities of Santee and San Diego, and the Marine Corps Air Station Miramar, which is on federal land.

5.8.3 Inventory Methods

The land use, planning, recreation, and agricultural resources inventory was compiled by reviewing existing relevant general plans, data, maps, and aerial photographs within and adjacent to the existing project right-of-way. The research also involved consultations with key land use planning agencies to update and supplement official information and to solicit input. In addition, onsite surveys were conducted along the sections of the existing project right-of-way.

5.8.4 Inventory Results

Land Use Jurisdiction

The project would traverse land under the jurisdictions of the U.S. Department of Defense (Marine Corps Air Station Miramar), the California State Lands Commission (San Diego and Sweetwater river bottoms), San Diego County, and the cities of San Diego and Santee. Because the existing project right-of-way also falls within an HCP area and within the Mission Trails Regional Park, which has its own Master Plan, relevant results of these plans' land use specifications are also reported.

Marine Corps Air Station Miramar

SDG&E activities on the base require the consent of the U.S. Marine Corps (USMC), which has adopted a Comprehensive Natural Resources Management Plan and a Committee for Land and Airspace Management Policy (CLAMP). Approximately 0.9 mile of the project would occur on USMC land.

California State Lands Commission

The State Lands Commission oversees the land underlying navigable waterways, including the San Diego and Sweetwater rivers, and, therefore, has jurisdiction over these portions of the proposed project. SDG&E has a lease with the State Lands Commission for the portions of its existing right-of-way that cross the rivers/river bottoms.

San Diego County General Plan

The *San Diego County General Plan* contains no specific goals and policies regarding the siting of major transmission lines. It defers instead to the MSCP Subarea Plan, the details of which follow.

City of San Diego Progress Guide and General Plan

The *City of San Diego Progress Guide and General Plan* does not contain specific goals or policies regarding the siting of major transmission lines. also defers to the MSCP Subarea Plan.

City of Santee General Plan

The *City of Santee General Plan* contains no specific goals and policies regarding the siting of major transmission lines.

Habitat Conservation Plans

Under ESA, CESA, and The Natural Community Conservation Planning Act, the USFWS and the CDFG provide for the protection, preservation, and conservation of plants, animals, and their habitats, natural communities and natural resources while allowing compatible land use. The City of San Diego has adopted a MSCP Subarea Plan applicable to large portions of southwestern San Diego County, as described below.

SDG&E, in an agreement with the USFWS and the CDFG, has developed and implemented its own NCCP that covers the installation, use, maintenance, and repair of its existing gas and electrical systems and typical expansion to those systems within much of SDG&E's existing service territory in San Diego County, including portions of Riverside and Orange Counties. As part of the NCCP, SDG&E has been issued an incidental take permit by the USFWS and CDFG for covered species (defined in the NCCP to include listed species, candidate species). SDG&E's public utility activities, such as the project, are not subject to the regulatory jurisdiction of local government, such as the City or County of San Diego, and, therefore, are not governed by the terms and conditions of the MSCP. However, in performing its activities and implementing the protocols and protective measures of its NCCP, SDG&E coordinates with the City of San Diego to achieve consistency with the MSCP to the extent feasible. Where consistency with the MSCP is not feasible, SDG&E's NCCP provides for the appropriate protocols and mitigation measures to protect natural community and natural resource values.

San Diego Multiple Species Conservation Program Subarea Plan

The Subarea Plan specifies the following land use considerations:

- All proposed utility lines should be designed to avoid or minimize intrusion into the Multi-Habitat Planning Area (MHPA). These facilities should be routed through developed or developing areas rather than the MHPA, where possible. If no other routing is feasible, then the lines should follow previously existing roads, easements, rights-of-way, and disturbed areas, minimizing habitat fragmentation.

- All new development for utilities and facilities within or crossing the MHPA shall be planned, designed, located and constructed to minimize environmental impacts. All such activities must avoid disturbing the habitat of MSCP covered species, and wetlands. If avoidance is infeasible, mitigation will be required.
- Temporary construction areas and roads, staging areas, or permanent access roads must not disturb existing habitat unless determined to be unavoidable. All such activities must occur on existing agricultural lands or in other disturbed areas rather than habitat. If temporary habitat disturbance is unavoidable, then restoration of, and/or mitigation for, the disturbed area after project completion will be required.
- For the most part, existing roads and utility lines are considered a compatible use within the MHPA and therefore will be maintained.

Mission Trails Regional Park Master Plan

The plan contains no specific goals or policies regarding the siting of major transmission lines.

Existing Land Use

Most of the existing project right-of-way lies within unincorporated San Diego County, which encompasses approximately 4,200 square miles in the southwest corner of California. Portions of the route also pass through the City of San Diego, which comprises over 30 neighborhood communities in approximately 403 square miles, and, to its east, the City of Santee, which occupies approximately 16 square miles.

The *San Diego County General Plan* land use designations and existing land uses adjacent to and crossed by the existing project right-of-way are summarized in Table 5-11 and described in the remainder of this section.

The project would originate at the Miguel Substation, which lies south of the Sweetwater Reservoir and Mother Miguel Mountain on otherwise undeveloped land that San Diego County has designated as public/semi-public. It would exit the substation and proceed northeast through open, rolling hills designated as a Specific Plan Area; a small, abandoned orchard; and, beginning at State Route 94 (Campo Road), multiple rural use and medium-density residential areas scattered among undeveloped land. At the Sweetwater River, the existing project right-of-way traverses the Singing Hills Specific Plan Area and an Impact Sensitive⁸ Designation area.

Continuing northeast, the project would cross the Cottonwood at Rancho San Diego Golf Club before encountering public/semi-public land interspersed with medium-density residential and multiple rural use areas. These interspersed land uses continue past Dehesa Road and Steele Canyon, where it traverses Singing Hills County Club.

⁸ The Impact Sensitive Designation applies to areas considered unsuitable for urban development because of public safety or environmental concerns.

As it passes east of the City of El Cajon, the project turns north, traversing mostly multiple rural use area, along with occasional medium-density residential areas. Just south of Interstate 8, it encounters an approximately 600-acre avocado grove within a Specific Plan Area.

The existing project right-of-way continues across Interstate 8 west of the Lake Jennings Park Road interchange, where the land use designation along the freeway corridor is Public/Semi-public. On the south side of the freeway, the general plan land use designation is General Commercial. Approaching the Los Coches Substation on the west side of Lake Jennings, the right-of-way traverses pockets of undeveloped land designated as residential and medium-density residential areas.

The Los Coches Substation is located in the vicinity of land designated as residential, and the unincorporated community of Lakeside lies to the west. After exiting the substation to the north, the existing project right-of-way crosses an Impact Sensitive designation at the San Diego River and then turns northwest. It encounters multiple rural use designations in the areas adjacent to Wildcat Canyon Road.

Low-density residential areas border the right-of-way as it turns west toward State Route 67 and through the residential Eucalyptus Hills community. As it approaches and then bisects the northern portion of the City of Santee, the project traverses medium-density residential areas and hilly open space that has been designated as a Specific Plan Area known as the Fanita Ranch Master Planned Community.

The existing project right-of-way crosses public/semi-public land in Santee Lakes Regional Park and Campground, then turns southwest and proceeds through the southeast corner of the Marine Corps Air Station Miramar and Mission Trails Regional Park. It then passes just west of the Sycamore Canyon Landfill before crossing State Route 52 and open space, and entering the community of Tierrasanta, which encompasses medium- and high-density residential areas, as well as public/semi-public lands.

Continuing southwest, the existing project right-of-way traverses a golf course and then, between Mission Village Drive and the Interstate 15, passes through an industrial area, with a petroleum tank farm located west of Interstate 15 in Murphy Canyon. It also crosses sand and gravel extraction operations before encountering open space and medium-density residential areas along the mesas to the north and commercial areas to the south.

West of Interstate 15, the existing project right-of-way continues fully west along the north slope of Mission Valley to its termination point at the Mission Substation. The substation is situated in vacant land just north of Friars Road and east of Interstate 805.

Planned Land Use

Approximately 34, primarily residential, new development projects are either planned or proposed in the vicinity of the proposed project. See Chapter 7 for a complete list and map of planned and proposed new development in the project area.

Table 5-11: Project Area Land Use Designations and Existing Land Uses

Substations/Major Rivers and Roads	General Plan Land Use Designations	Existing Land Uses
Miguel Substation to State Route 94 (Campo Road)	Public and semi-public/ Specific Plan Area	Undeveloped
State Route 94 (Campo Road) to Steele Canyon Road	Multiple rural use/ residential	Undeveloped/education/ residential
Sweetwater River	Impact sensitive	Undeveloped
Steele Canyon Road to Dehesa Road	Public and semi-public/ residential	Residential/commercial/ recreation/undeveloped
Dehesa Road to La Cresta Road	Multiple rural use/ residential	Undeveloped/residential
La Cresta Road to Interstate 8	Residential/Specific Plan Area	Undeveloped/agricultural
Interstate 8 to Los Coches Substation	Public and semi-public/ residential/commercial	Residential/commercial/ undeveloped
Los Coches Substation to Willow Road	Residential	Undeveloped/residential
San Diego River	Impact sensitive	
Willow Road to Wildcat Canyon Road	Residential/multiple rural use	Undeveloped/residential
Wildcat Canyon Road to State Route 67	Multiple rural use residential/	Undeveloped/residential
State Route 67 to Summit Avenue	Specific Plan Area/ residential	Undeveloped/residential
Summit Avenue to State Route 52	Public and semi-public/ industrial/ residential	Residential/undeveloped
State Route 52 to Clairemont Mesa Boulevard	Public and semi-public/ residential	Undeveloped/parks
Clairemont Mesa Boulevard to Tierrasanta Boulevard	Public and semi-public/ residential	Undeveloped/residential/ commercial recreation
Tierrasanta Boulevard to Interstate 15	Public and semi-public/ residential/industrial	Undeveloped/residential, industrial
Interstate 15 to Mission Substation	Residential/industrial	Undeveloped/gravel mining

Recreation

The existing project right-of-way crosses several Class II bikeways, which provide a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles associated with the rights-of-way of state routes 94, 67, and 52 and with Interstate 15.

Near its intersection with State Route 94 (Campo Road), the existing project right-of-way traverses the San Diego National Wildlife Refuge Otay-Sweetwater Unit. This refuge totals 4,224 acres of habitat for a variety of sensitive species, but is closed to public use.

Northeast of State Route 94 (Campo Road) en route to the Los Coches Substation, the right-of-way passes through Cottonwood at Rancho San Diego Golf Club. This facility contains two 18-hole courses and is open year-round to the public.

Near the Los Coches Substation lies Lake Jennings County Park, a year-round destination for anglers, bird-watchers, hikers, and recreational vehicle campers. The existing project right-of-way passes just west of the 100-acre park's primary parking lot before proceeding into the substation.

Continuing north from the Los Coches Substation, the right-of-way crosses the San Diego River between El Monte and Willow Roads. Hikers utilize existing trails along the dry river bottom in this area.

In the unincorporated community of Lakeside, the existing project right-of-way traverses the southern edge of Louis A. Stelzer County Park, a 314-acre area that provides picnicking and camping. The project vicinity contains a few steep hiking trails that lead to a popular scenic lookout point known as Kumeyaay Promontory.

Within the city limits of Santee, the existing project right-of-way crosses an area frequented by hikers in the northern section of the 190-acre Santee Lakes Regional Park and Campground, which is owned and operated by the Padre Dam Municipal Water District. South of the project vicinity, the park's series of small lakes offer fishing, boating, and a variety of day-use areas.

On its southwesterly approach to the Mission Substation, the right-of-way crosses the East Fortuna and West Fortuna portions of Mission Trails Regional Park, which encompasses approximately 5,800 acres of natural and developed recreational areas. The right-of-way parallels the Fortuna Mountain Saddle Trail and also crosses it in six places. It crosses the Old Mission Dam Trail in three places.

The existing project right-of-way also passes through the northeasterly portion of the 36-hole Admiral Baker Golf Course, a facility open year-round exclusively to military personnel and their guests. This site also provides a putting green and driving range.

Agricultural Resources

Much of the original agricultural land along the route has been converted to residential and commercial recreational uses. South of the Los Coches Substation, between Lake Jennings Park

Road and La Cresta Road, the right-of-way briefly crosses and then borders on the west an approximately 600-acre avocado orchard. East of the San Diego River between Interstate 8 and State Route 67, it passes through a series of pastures either formerly or currently used for grazing. No farmland that has been designated as Prime, Unique, or Farmland of Statewide Importance is crossed by or adjacent to the existing project right-of-way. None of the properties along the existing project right-of-way have been zoned for agricultural use, and there are no Williamson Act contracts crossed by the project.

5.9 NOISE

5.9.1 Introduction

This chapter describes the existing noise conditions and applicable noise policies in the vicinity of the Miguel–Mission 230kV #2 Project area. It discusses major noise sources, such as state highway and interstate freeway crossings, as well as federal, state, and applicable city noise standards.

5.9.2 Setting

More than half of the existing project right-of-way lies within unincorporated areas of San Diego County. These areas experience fewer noise-related impacts than the more populated areas in the City of San Diego. The existing right-of-way traverses a portion of the City of Santee. Areas susceptible to increased noise in this section include scattered, widely spaced residences and some tract homes. The existing project right-of-way also passes through sections of the City of San Diego. This area is characterized by a higher density of development, resulting in higher cumulative noise levels than are found in the county's unincorporated communities. Localized noise sources are also located along the existing project right-of-way that add to ambient noise levels as the project crosses or comes into proximity of these areas. Locations of local noise sources along the existing project right-of-way include:

Vehicular Traffic Areas

- **Interstate 8 Freeway**
Interstate 8 runs in a west to east direction and crosses the right-of-way approximately 0.5 mile south of Lake Jennings.
- **Interstate 15 Freeway**
Interstate 15 runs in a north to south direction and crosses the right-of-way approximately 0.25 mile north of Friars Road.
- **Interstate 805 Freeway**
Interstate 805 is located approximately 0.5 mile west of the right-of-way, running in a north to south direction.
- **State Route 52**
State Route 52 runs perpendicular to the project, crossing the right-of-way approximately 1 mile east of Santee Recreation Lakes.
- **State Route 67**
State Route 67 crosses the right-of-way approximately 0.75 mile north of Olde Highway 80, running in a north to south direction.

- **State Route 94 (Campo Road)**

State Route 94 runs west to east in relation to the project. This highway, also known as Campo Road, crosses the right-of-way approximately 1.25 miles south of the Sweetwater River.

Qualcomm Stadium

This open-air facility is located approximately 1 mile east of the Mission Substation and approximately 0.25 mile south of the existing project right-of-way. Noise levels increase at this facility during various sporting and other events (traffic and other noise).

Marine Corps Air Station Miramar

This military facility is located 6 miles north of the Mission Substation along the existing project right-of-way. Numerous military aircraft are located at this facility. Aircraft traffic is variable, but can be heavy at times.

Montgomery Field

This airport is located approximately 2 miles north of the Mission Substation. Aircraft using the airport range from single-engine light planes to multi-engine corporate jets. Aircraft traffic will often fly over or near the existing project right-of-way. Most aircraft operations occur between 6:00 a.m. and 9:00 p.m. daily.

5.9.3 Inventory Methods

Information regarding existing noise sources and standards were obtained from local, regional, state, and federal literature reviews and Internet searches of relevant websites.

5.9.4 Inventory Results

General Characteristics of Ambient Noise

Noise environments are typically described in decibels (dB), a logarithmic measure of a quantity of sound, compared to a standardized quantity. The A-weighted Sound Level (dBA) is a more common measure used in most noise criteria. This measurement better simulates the human ear's sensitivity to low frequencies and more closely approximates an individual's annoyance from high noise levels. The noise dBA measurements taken over a given time period are known as the equivalent sound level (L_{eq}), the most common overall representative of noise in a given area. The L_{eq} is often calculated over a given time period or by the day-night equivalent noise level (L_{dn}). The L_{dn} is equal to the L_{eq} over a 24-hour period. Modifications are sometimes made to this measurement as a result of increased sensitivity to changes in noise levels during nighttime hours.

Levels of noise are considered low when readings are below 45 dBA, moderate in the 45 to 60 dBA range, and high when readings climb above 60 dBA. Rural areas are usually characterized by relatively low noise readings, with increasingly higher readings expected in small towns,

suburban areas, and, major urban centers. The range of expected outdoor dBA levels varies with the specific type of land use. In remote wilderness areas, L_{dn} averages approximately 35 dBA. Small rural areas or wooded residential areas average 50 dBA, and sound levels rise to approximately 75 dBA in major urban centers, such as the City of San Diego. Noise levels average approximately 85 dBA near freeways and airports.

Existing Noise Conditions

The majority of the existing project right-of-way passes through sections of the City of San Diego with lower noise levels (45 to 50 dBA), more typical of rural areas. The existing project right-of-way passes through similar areas of lower noise levels in the cities of Santee and unincorporated San Diego County. The points along the existing project right-of-way that can have substantially higher local noise levels include highway/freeway crossings and other localized noise sources, such as at military or civilian airports.

Sensitive Receptors

Noise-sensitive receptors are those facilities (e.g., residential areas, hospitals, schools, offices) or activities for which excessive noise may cause annoyance or loss of business (e.g., commercial activities in which heavy telephone use requires a quiet environment). Sensitive receptors in the project area include residences, hospitals, and schools, either adjacent to or in the vicinity of the project. Private residences are scattered at low and medium densities along the existing project right-of-way, but the route generally avoids residential housing areas. Residences occur at varying distances from the route. However, some residences occur immediately adjacent to the existing right-of-way. Three schools are located within 0.25 mile of the right-of-way.

5.9.5 Regulatory Framework

Federal and State

The federal government has passed various laws to regulate and limit noise levels in the United States. The National Environmental Policy Act of 1969 requires an Environmental Impact Statement on federal or federally supported projects that will affect environmental quality, including noise impacts. The Noise Pollution and Abatement Act of 1970 established the Office of Noise Abatement and Control within EPA, and requires investigations of noise issues and consultation with the EPA. The Noise Control Act of 1972 was the first comprehensive statement of national noise policy. It declared that “it is the policy of the United States to promote an environment for all Americans free from noise that jeopardizes their health or welfare.”

No federal noise standards directly regulate noise from operation of electrical transmission lines and substation facilities, but the EPA has guidelines for noise levels to protect public health and welfare with an adequate margin of safety. Table 5-12 lists these levels.

Table 5-12: Environmental Protection Agency Protective Noise Levels

Effect	Level	Area
Hearing loss	Equivalent sound level (L_{eq}) < 70 decibels (dB)	All areas
Outdoor activity interference and annoyance	Day-night equivalent sound level (L_{dn}) < 55 dB	Outdoors in residential areas, farms, and other outdoors areas where people spend widely varying amounts of time and other places in which quiet is a basis for use
	L_{eq} < 55 dB	Outdoor areas where people spend limited amounts of time, such as schoolyards, playgrounds, etc.
Indoor activity interference and annoyance	L_{dn} < 45 dB	Indoor residential areas
	L_{eq} < 45 dB	Other indoor areas with human activities such as schools, etc.

The California Office of Noise Control sets noise level standards and implementation for the State of California. It also encourages local governments to perform noise studies and integrate a noise element into their general plans. The Office of Noise Control has created the state noise guidelines for compatibility with specific land uses. Table 5-13 summarizes the guidelines for California land use and acceptable noise levels.

Local

San Diego County

San Diego County adheres to federal and state noise legislation and has adopted its own codes as well. In the Site Standards and Controls, Policy 4b in the *San Diego County General Plan, Noise Element*, the County sets guidelines for development noise. Policy 4b defines allowable “zone ambient noise level limits” and dictates that whenever possible:

- Development in San Diego County should be planned and constructed so that noise-sensitive areas are not subject to noise levels in excess of the Community Noise Equivalent Level (CNEL) equal to 55 dBA.
- Whenever it appears that new development will result in noise-sensitive areas being subjected to noise levels of CNEL equal to 60 dBA or greater, an acoustical study should be conducted.

- If the acoustical study shows that noise levels at any noise-sensitive area will exceed CNEL equal to 60 dBA, the development should not be approved unless the modifications can be made to reduce exterior noise level below CNEL equal to 60 dBA, or (if the exterior standard is infeasible) the interior noise level to 45 dBA.
- If the acoustical study shows that noise levels at any noise-sensitive area will exceed a CNEL of 75 dBA, the development should not be approved.

San Diego County also defines acceptable noise levels for construction activities in its Regulatory Ordinance, Section 36.410. The requirements are summarized as follows:

- It is unlawful to operate construction equipment on Sundays, legal holidays, and between the hours of 7:00 p.m. and 7:00 a.m.
- Construction equipment cannot be operated so as to cause a noise level in excess of 75 dB for more than eight hours during any 24-hour period in or near residential areas.

In addition, the county's noise ordinance prescribes ambient sound level limits for a wide variety of noise sources, with standards specific to the particular zone in question. Table 5-14 summarizes these limits.

Table 5-13: State of California Land Use Noise Matrix

Land Use Category	Community Noise Equivalent Level (CNEL) Day-Night Equivalent Noise Level (L_{dn}) or CNEL A- Weighted Sound Level
Residential low density: single family, duplex, mobile homes	45 to 60 = Normally acceptable 55 to 70 = Conditionally acceptable 70 to 75 = Normally unacceptable 75 to 90 = Clearly unacceptable
Residential: multi-family	45 to 65 = Normally acceptable 60 to 70 = Conditionally acceptable 70 to 75 = Normally unacceptable 75 to 90 = Clearly unacceptable
Transient lodging: motels, hotels	45 to 65 = Normally acceptable 60 to 70 = Conditionally acceptable 70 to 80 = Normally unacceptable 80 to 90 = Clearly unacceptable
Schools, libraries, churches, hospitals, nursing homes	45 to 65 = Normally acceptable 60 to 70 = Conditionally acceptable 70 to 80 = Normally unacceptable 80 to 90 = Clearly unacceptable
Auditoriums, concert halls, amphitheaters	45 to 70 = Conditionally acceptable 65 to 90 = Clearly unacceptable
Sports arenas, outdoor spectator sports	45 to 75 = Conditionally acceptable 70 to 90 = Clearly unacceptable
Playgrounds, neighborhood parks	45 to 70 = Normally acceptable 67.5 to 80 = Normally unacceptable 72.5 to 90 = Clearly unacceptable
Golf courses, riding stables, water recreation, cemeteries	45 to 75 = Normally acceptable 70 to 80 = Normally unacceptable 80 to 90 = Clearly unacceptable

Land Use Category	Community Noise Equivalent Level (CNEL) Day-Night Equivalent Noise Level (L_{dn}) or CNEL A- Weighted Sound Level
Office buildings, business commercial, professional	45 to 70 = Normally acceptable 67.5 to 77.5 = Conditionally acceptable 75 to 90 = Normally unacceptable
Industrial, manufacturing, utilities, agriculture	45 to 75 = Normally acceptable 70 to 80 = Conditionally acceptable 80 to 90 = Normally unacceptable

Table 5-14: San Diego County Noise Codes

Zone	Time	Sound Level Limit (A-Weighted) Sound Levels
Single-family Residential (R-1, R-1-A)	7:00 a.m. to 7:00 p.m.	50
Single-family Residential and Estate (E-1-A, R-1-B, R-1 [15])	7:00 p.m. to 10:00 p.m.	45
Limited Commercial and Duplex Residential (LC, LC-A, T-Temporary, R-2 and R-2-A)	10:00 p.m. to 7:00 a.m.	40
Multiple Family Residential (R-3, R-4, R-5, R-P, PRD and all other residential and estate zones)	7:00 a.m. to 7:00 p.m.	60
	7:00 p.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
All commercial zones	7:00 a.m. to 7:00 p.m.	60
	7:00 p.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	55
Industrial (M, M-1, M-2)	Anytime	70
M-3 and all other industrial and agricultural zones, including E-2-B	Anytime	75

City of San Diego

The City of San Diego noise ordinance, Section 59.5.0401, regulates noise by sound level at the property line, time of day, and land use zone. These requirements are for the hours between 7:00 a.m. and 7:00 p.m., based on a one-hour average sound level, as follows:

Residential	50 to 55 dB
Residential rural	60 dB
All commercial	65 dB
Industrial	75 dB

The City of San Diego has also integrated a comprehensive matrix of Land-Use Noise Level Compatibility Standards. (See Table 5-15.)

City of Santee

The Noise Element goal of the City of Santee is to “improve the city’s overall environment by reducing harmful and annoying noise for existing and future residents.” There are two primary objectives designated to achieve this goal. The City of Santee’s objectives are to “control noise from sources adjacent to residential, recreational community facilities and those land uses classified as noise sensitive receptors” and to “ensure that future developments will be constructed so as to minimize interior and exterior noise levels.” Various specific policies are listed under these two objectives in order to meet them.

Additionally, the City of Santee has set noise level regulations to implement its goal and objectives. These regulations are very similar to those defined by San Diego County. Whenever it appears that new development will result in existing or future noise sensitive areas being subjected to noise levels of 60 dBA L_{dn} or greater, an acoustical study will be required. If the acoustical study shows that the noise levels at any noise sensitive area will exceed 60 dBA, the development should not be approved unless modifications can be made which will reduce the exterior noise level to 60 dBA or less, or reduce the interior noise level to 45 dBA if the exterior noise level standard cannot be achieved feasibly. For rooms in sensitive areas that are occupied only for a part of the day (schools, libraries, or similar), the interior one-hour average sound level during occupation, due to noise outside, should not exceed 50 dBA L_{eq} (hour). The City of Santee’s comprehensive guide for specific noise levels and land use compatibility (various land use categories) is identical to the State of California Land Use Matrix (refer to Table 5-13).

Table 5-15: City of San Diego Land Use-Noise Level Compatibility Standards

Land Use	Annual Community Noise Equivalent Level in Decibels
Outdoor Amphitheaters (may be unsuitable for certain types of music)	60
Schools, Libraries	65
Nature Preserves, Wildlife Preserves	65
Residential-Single Family, Multiple Family, Mobile Homes, Transient Housing	65
Retirement Home, Intermediate Care Facilities, Convalescent Homes	65
Hospitals	65
Parks, Playgrounds	65
Office Buildings, Business and Professional	70
Auditoriums, Concert Halls, Indoor Arenas, Churches	70
Riding Stables, Water Recreation Facilities	75
Outdoor Spectator Sports, Golf Courses	75
Livestock Farming, Animal Breeding	75
Commercial-Retail, Shopping Centers, Restaurants, Movie Theaters	75
Commercial-Wholesale, Industrial Manufacturing, Utilities	75
Agriculture (except livestock), Extractive Industry, Farming	75
Cemeteries	75

Noise Setting

5.10 POPULATION AND HOUSING

5.10.1 Introduction

This chapter describes the existing population, housing, and employment conditions in the Miguel–Mission 230kV #2 Project area. The project is located in heavily populated incorporated and unincorporated areas of San Diego County. Permanent housing vacancy rates are relatively low, and the area contains a large amount of temporary housing. The project area has historically experienced a low unemployment rate.

5.10.2 Setting

San Diego County is the second most populous of California's 58 counties. It consists of 18 incorporated cities and 28 unincorporated communities. It ranks 16th in population for all metropolitan areas in the United States.

5.10.3 Inventory Methods

Information for this chapter was obtained from Internet searches of federal, state, county, and corporate websites including the U.S. Census Bureau, the Employment Development Department, and the San Diego Association of Governments (SANDAG).

5.10.4 Inventory Results

The area inventoried encompasses all of the cities and unincorporated areas adjacent to the project area, including the cities of San Diego and Santee, and 18 unincorporated areas in San Diego County. The results for Chula Vista and El Cajon are also included because their city boundaries lie within 1 mile of the project right-of-way. (Refer to Figure 1-1).

Population

Table 5-16 summarizes recent and projected U.S. Census Bureau population totals for the project area and surrounding cities. The population for the unincorporated regions of San Diego County in the year 2000 was estimated at 469,275 and accounted for approximately 17 percent of San Diego County's total population of 2,813,833. From 1990 to 2000, the population of San Diego County increased by approximately 11 percent.

The City of San Diego accounts for the largest portion of the county population, at 43 percent, with a 15 percent increase from 1990 to 2000. SANDAG projects that San Diego will grow 38 percent by 2020. Chula Vista will almost double its total population of 173,556 by the same year, and it experienced a growth rate of 29 percent in the last decade. With 94,869 people, El Cajon accounts for only 3 percent of the total county population, and it experienced a growth rate of only 9 percent from 1990 to 2000. Santee is the smallest incorporated city the project crosses, with a population at 52,975 in 2000. Santee experienced a growth rate of 10 percent from 1990 to 2000, and it is expected to grow 30 percent by 2020.

Housing

Table 5-17 summarizes the total housing units and vacancy rate within and adjacent to the project area, according to SANDAG. The number of housing units in San Diego County totals 1,039,089, with a 6.2 percent vacancy rate. The incorporated areas of the county account for 85 percent of household units, while the remaining 15 percent lie in unincorporated areas. The unincorporated areas have a slightly higher vacancy rate (7.4 percent) than the incorporated areas (6 percent).

The cities of San Diego, Chula Vista, El Cajon, and Santee comprise 45, 5.7, 3.4, and 1.9 percent of San Diego County's housing units, respectively. All four cities contain more than half of the region's total housing units, at 583,302. The cities' vacancy rates range from 2.7 to 5.9 percent. The unincorporated area of the county has a higher vacancy of 7.4 percent.

Temporary Housing

San Diego County consists of 18 cities and 28 unincorporated communities. Within this region there are 170 hotel listings containing over 30,000 rooms.

Employment and Income

Table 5-18 summarizes the total number of people employed and unemployed in areas around the project area, according to the Employment Development Department, April 12, 2000 and February 21, 2002 estimates. About 9 percent of total employment in San Diego County occurs within unincorporated areas. San Diego, Chula Vista, El Cajon, and Santee represent 45.8, 5.2, 3.5, and 2.3 percent of the county's employment, respectively. Despite large differences in population, unemployment rates were distributed relatively evenly. El Cajon had the highest, at 3.9 percent.

As of January 2000, according to SANDAG, the median household income (MHI) for San Diego County was 46,503 dollars, a 33 percent increase from the 1990 MHI of 35,028 dollars. The unincorporated region has a median household income of 51,621 dollars, which represents a more than 26 percent increase from the 1990 estimate of 40,778 dollars. (See Table 5-19.)

Among the cities within or adjacent to the project area, Santee and El Cajon had the highest and lowest MHI reported by SANDAG for 2000, at 52,067 and 35,552 dollars, respectively. With a MHI of 48,020 dollars, Chula Vista experienced the highest increase, at 32 percent, from 1990 to 2000, while El Cajon had the lowest, yet still significant, change of 20 percent.

Table 5-16: Population Totals

City/County/Region	2000 U.S. Census Bureau¹ Total	2020 Projections²
Chula Vista	173,556	275,455
El Cajon	94,869	104,563
San Diego	1,223,400	1,693,533
San Diego County	2,813,833	3,853,297
Santee	52,975	74,856
Unincorporated	469,275	666,576

Table 5-17: Total Housing Units and Vacancy Rates

City/County/Region	Total Housing Units	Vacancy Rate (percent)
Chula Vista	59,333	4.1
El Cajon	34,944	4.5
San Diego	469,689	5.9
San Diego County	1,039,089	6.2
Santee	19,336	2.7
Unincorporated	151,892	7.4

¹ U.S. Census Bureau 2000 population estimates

² San Diego Association of Governments 2020 Cities/County Forecast

Table 5-18: Total Employment and Unemployment

City/County/Region	Total Employment (number of laborers)	Unemployment Rate (percent)
Chula Vista	72,090	3.4
El Cajon	47,850	3.9
San Diego	632,020	3.3
San Diego County	1,379,200	3.2
Santee	31,470	3.3
Unincorporated	125,443	----

Table 5-19: Median Household Income

City/County/Region	1990 (dollars)	2000 (dollars)
Chula Vista	32,456	48,020
El Cajon	28,356	35,552
San Diego	33,910	45,041
San Diego County	35,028	46,503
Santee	39,506	52,067
Unincorporated	40,804	51,621

5.11 PUBLIC SERVICES, UTILITIES, AND SERVICE SYSTEMS

5.11.1 Introduction

This section describes the existing public services, utilities, and service systems in the Miguel–Mission 230kV #2 Project area. Public services include fire protection, law enforcement, schools, parks, and other public facilities. Utilities and service systems include water, sewer, communications, gas, waste disposal, and electric services.

5.11.2 Setting

With the exception of certain access roads, the project would be located within SDG&E's existing right-of-way and within SDG&E existing substation property. The utility serves gas and electricity to the cities of San Diego and Santee, as well as to the unincorporated pockets of San Diego County.

5.11.3 Inventory Methods

Information for this section was obtained from Internet searches of state, county, city, and corporate websites and from maps of the project area.

5.11.4 Inventory Results

Fire Protection

Fire protection services are provided by several agencies within San Diego County. The San Diego Rural Fire Protection District serves 28 unincorporated areas of the county, four of which serve communities in the project area. The fire departments of the cities of San Diego and Santee serve their respective cities, with one fire station in the San Diego portion of the project area, and two fire stations in the City of Santee. The California Department of Forestry and Fire Protection also provides fire protection services to San Diego County under a cooperative fire protection agreement.

Law Enforcement

The San Diego County Sheriff's Department is the chief law enforcement agency in San Diego County. The county Sheriff's Department provides specialized regional services to the entire county, whether the services are needed in incorporated cities within the county, including the City of Santee, or in the unincorporated areas not serviced by a city law enforcement agency. Of the 18, two county Sheriff's Department offices lie within the project area. The City of San Diego provides police services to its residents via its 109 police stations. The California Highway Patrol provides traffic service for the unincorporated areas of San Diego. All police agencies respond to calls within their designated jurisdictions and, in extraordinary circumstances, assist in neighboring jurisdictions.

Schools

SDG&E's existing right-of-way travels within the vicinity of 27 schools. Twelve of the schools fall within the City of San Diego, four occur in the City of Santee, five are located in the City of El Cajon, and six are in unincorporated areas of San Diego County. Three schools are located within 0.25 mile of the right-of-way: Juarez in the City of San Diego; and Jamacha and Steele Canyon, both in San Diego County.

Parks

The existing project right-of-way crosses four recreational areas/wildlife refuges, including the Mission Trails Regional Park, the Santee Lakes Regional Park and Campground, the Louis A. Stelzer County Park, and the San Diego National Wildlife Refuge Otay-Sweetwater Unit. The County of San Diego administers both the Louis A. Stelzer County Park and the San Diego National Wildlife Refuge Otay-Sweetwater Unit. Mission Trails Regional Park is in the City of San Diego, and Santee Lakes Regional Park and Campground is in the City of Santee.

Hospitals

There are numerous hospitals, medical centers, health service facilities, and physicians' offices in the San Diego region. San Diego County supports two hospitals within approximately 2 miles of the existing project right-of-way, both of which lie within the City of San Diego. The City of Santee contains no hospitals.

Utilities and Service Systems

Water

The two major water agencies that serve the San Diego region are the San Diego County Water Authority (SDCWA) and the Metropolitan Water District of Southern California (MWD). The SDCWA imports water to 23 member agencies. The MWD is a regional water agency that imports water from Northern California and the Colorado River and delivers it on a wholesale basis to the coastal plains of Southern California.

San Diego County imports 75 to 95 percent of its water (466,884 acre-feet, compared to 152,524 acre-feet of local water) from the MWD. The MWD receives water via the 242-mile Colorado River Aqueduct and via the State Water Project's 444-mile California Aqueduct, which draws water from northern California rivers. This water serves an estimated population of 2.8 million people covering an area of 908,968 acres.

Sewer

The Department of Public Works Wastewater Management Section provides sewer services in San Diego County. The Public Works Department oversees six sanitation districts in the San Diego region.

Garbage

The City of San Diego provides its own trash collection service through Waste Management of San Diego. It also provides services for the City of Santee and the unincorporated areas of San Diego County.

Seven landfills occur within the San Diego region. Two are owned and operated by the U.S. Marine Corps. Three landfills are owned by a private waste management firm, Allied Waste Industries, and another is owned by Allied but is leased and operated by San Diego County. The Miramar Landfill is owned by the Marine Corps Air Station Miramar but is leased and operated by the City of San Diego. The Miramar Landfill primarily serves the City of San Diego, but also accepts some waste from the military base.

Utilities

SDG&E is the sole provider of electric and gas service to the region, including the residences and businesses in the project area.

Communications

Pacific Bell is the sole telephone service provider for the entire project area. Cox Communications and Time Warner Cable offer cable television service.

5.12 TRANSPORTATION AND TRAFFIC

5.12.1 Introduction

This section describes existing conditions for transportation and circulation systems within the Miguel–Mission 230kV #2 Project area. The project crosses two interstates, three state routes, and numerous major roadways. Eight transit operators provide 12 fixed-route transit services within the San Diego area.

5.12.2 Setting

The San Diego Department of Public Works maintains roads in unincorporated areas of the county, and the cities of San Diego and Santee manage roadways within their respective boundaries. Interstate 8 and State Route 52 predominantly serve east-west traffic in the project area, while Interstate 15 and Interstate 805 serve north-south traffic.

The level of service (LOS) of a roadway is a measure describing a range of operational conditions within a traffic stream, with LOS A representing free-flow conditions and LOS F heavy congestion. SANDAG is the agency responsible for long-term transportation planning in the San Diego area. SANDAG's policy for LOS on the region's highway system, as stated in its *2020 Regional Transportation Plan*, is to achieve a LOS E or better during peak travel periods. In 1998, 13 percent of the region's freeway system operated at a LOS F.

5.12.3 Inventory Methods

Transportation and traffic data were obtained from literature and Internet searches, as well as from statistical reports from SANDAG. SANDAG's *2020 Regional Transportation Plan* and the Metropolitan Transit Development Board's strategic plan, *TransitWorks*, were reviewed in addition to the general plans for San Diego County and for the cities of San Diego and Santee.

5.12.4 Inventory Results

Roadways

The existing project right-of-way spans several freeways, state highways, and major roads. These major roadways and their average weekday traffic volumes, according to SANDAG, are indicated in Table 5-20. In addition to public roadways, the project would primarily utilize existing SDG&E access roads and right-of-way to access construction areas.

Table 5-20: Average Weekday Traffic Volume on Significant Roadways Crossed by the Project

Roadway	Location Crossed	Classification	2000 Average Weekday Two-way Traffic Volume (number of cars)
Interstate 15	Mission Valley	Freeway	196,400
State Route 52	Mission Trails Regional Park	State freeway	69,100
State Route 67	Lakeside (unincorporated)	State highway	29,600
Interstate 8	Lakeside (unincorporated)	Freeway	68,300
State Route 94 (Campo Road)	Rancho San Diego (unincorporated)	State highway	20,600
Mission Village Drive	Mission Valley	Collector	12,800
Tierrasanta Boulevard	Tierrasanta	Collector	5,400
Wildcat Canyon Road	Lakeside (unincorporated)	Rural	16,500
Lake Jennings Park Road	Lakeside (unincorporated)	Collector	11,600
La Cresta Road	Crest (unincorporated)	Collector	7,100
Dehesa Road	Dehesa (unincorporated)	Collector	9,900
Willow Glen Drive	Rancho San Diego (unincorporated)	Collector	8,500

Transit and Rail Service

Transit operators within the project area include the San Diego County Transit System, the San Diego Transit Corporation, and the San Diego Trolley. No railroads are crossed by the project.

In addition, there are 10 demand-responsive transit system services, which are integrated into a single coordinated regional system administered by the Metropolitan Transit Development Board. The board's strategic plan, *TransitWorks*, was developed to guide activities and outline a transit expansion vision for the years until 2020.

Air Traffic

The existing project right-of-way lies within 5 miles of the Marine Corps Air Station Miramar, about 4 miles from Lindbergh Field, 3.5 miles of Gillespie Field in Santee, and within 2 miles of Montgomery Field in San Diego. Miramar is strictly for military air traffic. Lindbergh Field, also known as the San Diego International Airport, is a public airport operated by the San Diego County Regional Airport Authority. Gillespie Field, once home to a Marine Corps parachutist facility, is a public airport owned by San Diego County. The City of San Diego operates Montgomery Field as a general aviation airport.

