Chapter 4. Environmental Setting

INTRODUCTION

This chapter provides an overview of the existing physical environmental conditions (i.e., the environmental baseline) at the time this analysis was prepared. The project proposed by Williams is to install, operate and maintain a fiber optic cable system from the City of Riverside to the City of San Diego. The project will be installed within existing city, county, and state road rights-of-way. Two optical amplification (OP-AMP) stations will be located on private land along the project route, approximately 40 miles apart (**Figure 1-1**). To provide diversity in the network so that service will not be interrupted in case of a cable break, two cables will be installed. Williams requires that these two cables be installed a minimum of 25 feet apart. Portions of the redundant cable will connect to an existing system and be installed within existing conduit leased from another company. Because this portion of the cable will connect to an existing system, it is not included as part of this environmental setting.

This chapter is organized by resource topic, corresponding to the Environmental Checklist Form of the State CEQA Guidelines, as amended. A completed checklist for the proposed project is provided in **Appendix A**.

I. AESTHETICS

Aesthetics typically refers to the perceived visual character of an area, such as a scenic view, open space, or architectural facade. The aesthetic value of a given area depends on a combination of viewer response and the visual character and scenic quality of the area. This combination may be affected by certain components of a project (e.g., buildings constructed at a height that obstructs views, hillsides cut and graded, open space changed to an urban setting), as well as changing elements, such as light, weather, and the length and frequency of viewer exposure to the setting.

The visual setting of this project will vary and transverse a variety of landscapes. The project route will pass through visual settings of rural and urbanized arid valleys, surrounded by mountains and rocky outcroppings, and hilly terrain covered with small trees and shrubs. This terrain supports farming operations such as greenhouses and avocado and citrus orchards. Although the project route will be largely rural, it will pass though the urbanized areas of Riverside, Temecula, Escondido, and San Diego. The project will not be installed within or cross any approved or planned state or local scenic highways.

The Lindenberger OP-AMP site is located on Scott Road between Lindenberger Road and Audubon Drive in a rural section of Riverside County. The approximately 18-acre site is currently vacant and disturbed with no standing structures. The Mesa Rock OP-AMP site is located at North Centre City Parkway and Mesa Rock Road also in a rural section of San Diego County. The approximately 2.8-acre site is currently vacant and disturbed with no standing structures. A maximum of 2 acres at each of the OP-AMP sites will be graded and as many as eight 25- by 30-feet, one-story, pre-cast, concrete buildings that will be permanently located at these sites. The buildings will be neutral in color and will have one exterior light at each

entranceway for safety purposes and to provide illumination for access after dark. The buildings will be unoccupied and will be regularly visited for routine operation and maintenance procedures.

Regulations, Approvals, and Permits Applicable to Aesthetics

No state or federal aesthetics permits or regulations are applicable to the project. The project route will be located underground within existing road rights-of-way. OP-AMP stations will not be constructed on state or federal lands.

At the local level, both the County of Riverside and the County of San Diego will require the approval of a conditional use permit before construction of the OP-AMP stations. Minimizing visual impacts will be one consideration in the granting of the permit application. In addition, any local jurisdictions maintaining policies to preserve and protect visual and scenic resources within their sphere of influence will be consulted during the design of the OP-AMP stations.

II. AGRICULTURAL RESOURCES

California is the nation's leading agricultural state, with $26.8 billion worth of total production and income in 1997 (California Department of Food and Agriculture 1997). The variety of climates and soils in the state, together with the long growing season and availability of water, makes it suitable for growing a wide variety of crops. The major crops produced in California include asparagus, cotton, citrus, grapes, lettuce, nuts, stone fruits (e.g., almonds and plums), strawberries, and tomatoes. Poultry, dairy, and beef cattle are also important products.

The loss of agricultural land is an increasingly important issue in California. The state's growing population is resulting in the conversion of agricultural lands to suburban and urban uses. According to the 1994 to1996 Farmland Conversion Report of the California Department of Conservation's Farmland Monitoring and Mapping Project, approximately 15,400 acres (24 square miles) of prime farmland and farmland of statewide importance was converted to nonagricultural uses between 1994 and 1996 (California Department of Conservation 1998). Prime farmland and farmland of statewide importance have the best physical and chemical features to sustain long-term production of agricultural crops. As land is converted to other uses, and agriculture enters into increasing competition with urban and natural resource users for water (increasing the cost of water and reducing its reliability), the agricultural economy of some parts of the state is being adversely affected.

The project route passes through a portion of San Diego County's "back country". This area supports wine grapes, nursery products, and avocados. The project route also passes through Riverside County; agricultural uses in this area include irrigated pasture, alfalfa crops, dairy operations, orchards, and row crops. Along the route, the project will be installed within existing road rights-of-way; it will not directly or indirectly affect agricultural operations or reduce the amount of land available for agricultural production.

The OP-AMP sites, Lindenberger and Mesa Rock, which are located in Riverside and San Diego Counties, respectively, are on lands zoned for residential uses. The Lindenberger OP-AMP site is located on Scott Road between Lindenberger Road and Audubon Drive and is in a rural section of the county. The site has previously been used for residential and agricultural uses and is currently vacant with no standing structures. The Mesa Rock OP-AMP site is located at North Centre City Parkway and Mesa Rock Road

and is also in a rural section of the county. There is incomplete information on prior use of the property and it is currently vacant with no standing structures.

Regulations, Approvals, and Permits Applicable to Agricultural Resources

The California Farmland Protection Act (the Williamson Act) is the state's primary method for conserving farmland. This voluntary program is administered at the county level and offers property tax incentives to farmers who promise to keep their land in agricultural use. Under the act, owners of farm and grazing lands may enter into a contract with their county limiting the use of their land to agriculture for a period of at least 10 years. In response, the county will assess the land at its productive value rather than its fair market value. This reduces property tax increases that would otherwise arise from speculation over land values.

The Williamson Act's effectiveness in preserving farmland is limited by its voluntary nature. Those lands most likely to be developed are often not under contract or have had their contract canceled by the landowner in anticipation of development. The act is aimed at limiting the conversion of farmland to incompatible uses.

Development within agricultural areas also is subject to local zoning requirements. These vary from jurisdiction to jurisdiction. In most jurisdictions, utilities and associated small structures located in agricultural areas do not require a conditional use permit.

III. AIR QUALITY

Introduction

This chapter analyzes the air quality impacts that will result from construction and operation of Williams' Riverside to San Diego fiber optic cable system. The primary air emissions generated by this project will result from installation of the fiber optic cable, and construction and operation of the OP-AMP stations.

Regulatory Setting

The regulatory setting describes the federal, state, and local air quality regulatory environment.

Federal Regulatory Environment. The Federal Clean Air Act (FCAA) was passed in 1963 by Congress and has been amended several times, most recently in 1990. The FCAA requires the U.S. Environmental Protection Agency (EPA) to establish national ambient air quality standards for air pollutants or air pollutant groups that pose a threat to human health or welfare. EPA has established National Ambient Air Quality Standards (NAAQs) for six criteria pollutants: ozone (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead, particulate matter, and carbon monoxide (CO) (**Table 4.III-1**). Two separate standards have been set for particulate matter 10 microns or less in diameter (PM10), and PM 2.5 microns or less in diameter (PM2.5).

Table 4.III-1. Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time	Standard, as parts per million		Standard, as micrograms per cubic meter		Violation Criteria	
			California	National	California	National	California	National
Ozone	O_3	8 hours	N/A	0.08	N/A	160	N/A	If 3-year average of annual third-highest daily 8-hour maximum exceeds standard
		1 hour	0.09	0.12	180	235	If exceeded	If exceeded on more than 3 days in 3 years
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
(Lake Tahoe only)		8 hours	6	N/A	7,000	N/A	If exceeded	N/A
Nitrogen dioxide	NO_2	Annual average	N/A	0.053	N/A	100	N/A	If exceeded
		1 hour	0.25	N/A	470	N/A	If exceeded	N/A
Sulfur dioxide	SO_2	Annual average	N/A	0.03	N/A	80	N/A	If exceeded
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	N/A	655	N/A	N/A	N/A
Hydrogen sulfide	H_2S	1 hour	0.03	N/A	42	N/A	If equaled or exceeded	N/A
Vinyl chloride	C_2H_3Cl	24 hours	0.010	N/A	26	N/A	If equaled or exceeded	N/A
Inhalable particulate matter	PM10	Annual geometric mean	N/A	N/A	30	N/A	If exceeded	N/A
		Annual arithmetic mean	N/A	N/A	N/A	50	N/A	If exceeded
		24 hours	N/A	N/A	50	150	N/A	If exceeded on more than 1 day per year
Fine particulate matter	PM2.5	Annual arithmetic mean	N/A	N/A	N/A	15	N/A	If spatial average exceeded on more than 3 days in 3 years
		24 hours	N/A	N/A	N/A	65	N/A	If exceeds 98th percentile of concentrations in a year
Sulfate particles	SO_4	24 hours	N/A	N/A	25	N/A	If equaled or exceeded	N/A
Lead particles	Pb	Calendar quarter	N/A	N/A	N/A	1.5	N/A	If exceeded no more than 1 day per year
		30 days	N/A	N/A	1.5	N/A	If equaled or exceeded	N/A

Table 4.III-1. Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time	Standard, as parts per million: California	Standard, as parts per million: National	Standard, as micrograms per cubic meter: California	Standard, as micrograms per cubic meter: National	Violation Criteria: California	Violation Criteria: National

Notes: All standards are based on measurements at 25°C and 1 atmosphere pressure.
National standards shown are the primary (health effects) standards.
N/A = not applicable.

Air basins that have not violated an ambient air quality standard are considered to be in attainment for that standard. Conversely, air basins with recorded violations of an ambient air quality standard are classified as nonattainment areas for that pollutant. Most air basins are classified as nonattainment areas for one or more pollutants and attainment areas for other pollutants. For certain pollutants, such as PM10, California has a more stringent standard than the federal standard. Consequently, an air basin may be classified as a nonattainment area for the state PM10 standard while it is in attainment for the federal PM10 standard.

Air basins classified as nonattainment areas for the NAAQs must prepare state implementation plans that describe the specific steps that will be taken to bring the nonattainment area into compliance. Those steps primarily include rules and regulations to limit air emissions from specific stationary and mobile sources. The FCAA contains specific dates by which the NAAQs must be met, otherwise federal sanctions can be imposed.

California Regulatory Environment. The California Clean Air Act (CCAA) of 1988 differs from the FCAA in that there are no sanctions nor specific deadlines for attainment of the California Ambient Air Quality Standards (CAAQs), also shown in **Table 4.III-1**. The CAAQs were enacted in response to the need for new air quality requirements. Under this act, air quality attainment is required at the earliest practicable date, and reasonable progress must be made each year until attainment is achieved.

Similar to the FCAA, the CCAA requires attainment plans for designated nonattainment areas. The California Air Resources Board (ARB) is responsible for preparing the plans for meeting the NAAQs and CAAQs. The ARB has delegated to the California air districts the responsibility for preparing air quality attainment plans. Unlike the FCAA, the CCAA does not require an air quality attainment plan for areas designated as nonattainment for PM10.

Local Air Quality Regulatory Environment. The ARB has delegated much of its air pollution control authority to local air pollution control districts and air quality management districts. California's 15 air basins are listed in **Figure 4.III-1.** The project will cross the two air basins and two air districts shown in **Table 4.III-2**.

For air basins that do not meet the CAAQs or NAAQs shown in **Table 4.III-1**, individual air districts or groups of air districts prepare air quality management plans designed to bring an air basin into compliance with nonattainment area pollutants. Those plans are submitted to the ARB for approval, usually containing an emission inventory and a list of rules proposed for adoption.

Table 4.III-2. California Air Basins and Local Air Districts Crossed by the Fiber Optic Cable System

Air Basin	Local Air Districts	Nonattainment Status
San Diego County	San Diego County Air Pollution Control District	PM10 (state standards) Ozone (state and federal standards)
South Coast	South Coast Air Quality Management District (Includes Los Angeles, Orange, and Riverside Counties)	PM10 (state and federal standards) Ozone (state and federal standards) CO (state and federal standards)

Source: California Air Resources Board 1999.

Environmental Setting

The environmental setting section discusses the attainment/nonattainment status for the two California air basins that will be crossed by this project, with regard to the pollutants of most concern from construction and operation. The discussion also explains the effects of California's climate and meteorology on air quality.

Pollutants of Concern and Attainment/Nonattainment Status

Table 4.III-1 shows the nonattainment status for the two California air basins with regard to the pollutants of most concern from construction and operation of the project. The pollutants include ozone, respirable particulates, carbon monoxide, and nitrogen oxides. These pollutants, described below, are emitted as construction equipment exhaust, fugitive dust, and diesel exhaust from emergency backup generators.

Ozone. Ozone is a respiratory irritant and oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the air; instead, it is formed by a photochemical reaction in the atmosphere. Ozone precursors, including reactive organic gases (ROG) and oxides of nitrogen (NO_x), form ozone by reacting in the atmosphere in the presence of sunlight. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. ROG and NO_x are emitted by fuel combustion in mobile sources and by stationary combustion equipment. ROG and NO_x will be emitted by construction equipment used to install the fiber optic lines and by operation of the diesel engines for emergency backup generators.

State and federal standards for ozone have been set for a 1-hour averaging time. The state 1-hour ozone standard is 0.09 parts per million (ppm), not to be exceeded. The federal 1-hour ozone standard is 0.12 ppm, not to be exceeded more than three times in any 3-year period. The EPA recently replaced the 1-hour ozone standard with an 8-hour standard of 0.08 ppm. However, areas classified as nonattainment for ozone must attain the 1-hour ozone standard. After an area has achieved attainment of the 1-hour standard, then the 1-hour standard is no longer applicable, and the area must strive to meet the 8-hour ozone standard.

Both the South Coast and San Diego Air Basins are nonattainment for the state and federal ozone standards.

PM10 and PM2.5. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulates can damage human health and retard plant growth. Particulates also reduce visibility, soil buildings and other materials, and corrode materials.

PM10 emissions are generated by a wide variety of sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic, construction activities, fuel burning, and secondary aerosols formed by reactions in the atmosphere.

The federal ambient air quality standard for particulate matter currently applies to PM10 and PM2.5. The CAAQs only apply to PM10. The state PM10 standards are 50 micrograms per cubic meter as a 24-hour average and 30 micrograms per cubic meter as an annual geometric mean. The federal PM10 standards are 150 micrograms per cubic meter as a 24-hour average and 50 micrograms per cubic meter as an annual arithmetic mean. The federal PM2.5 standards equal 15 micrograms per cubic meter for the annual average and 65 micrograms per cubic meter for the 24-hour average.

The South Coast Air Basin is nonattainment for the both the state and federal PM10 standards. The San Diego Air Basin is attainment for the federal PM10 standards but nonattainment for the state standards (see **Table 4.III-2**).

Carbon Monoxide. CO is essentially inert to plants and materials, but can have significant effects on human health. CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. Effects on humans can range from slight headaches to nausea to death.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light wind combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. Monitored CO concentrations have been improving because of the use of oxygenated fuels in California. Violations of the CO concentrations are generally only a problem in heavily urbanized areas. The project will generate CO emissions from operation of construction equipment and emergency backup generator engines.

State and federal CO standards have been set for both 1-hour and 8-hour averaging times. The state 1-hour standard is 20 ppm by volume, and the federal 1-hour standard is 35 ppm. Both state and federal standards are 9 ppm for the 8-hour averaging period.

Of the two air basins through which the project route passes, the South Coast Air Basin is nonattainment for the state and federal CO standards while the San Diego Air Basin is in attainment for both state and federal CO standards.

Nitrogen Oxides. NO_x contributes to smog, can injure plants and animals, and can affect human health. Also, NO_x contributes to acidic deposition and reacts with reactive organic gases in the presence of sunlight to form photochemical smog. NO_x concentrations result in a brownish color because NO_x absorbs in the blue-green area of the visible spectrum, greatly affecting visibility.

NO_x is primarily emitted by combustion sources, including both mobile and stationary sources. NO_x is also emitted by a variety of area sources ranging from wild and prescribed fires to water and space heating

systems powered by fossil fuels. Project-related NO_x emissions will be generated by the construction equipment and the emergency backup generator engines.

The state NO_x standard equals 0.25 ppm on a 1-hour average. The federal NO_x standard equals 0.053 ppm on an annual average. All areas through which the project route will pass are attainment areas for the state and federal NO_x standards.

South Coast and San Diego Air Basin Climate and Meteorology

The distinctive climate of the South Coast and San Diego Air Basins is determined by their terrain and geographical location. The basins are in coastal plains connecting with broad valleys and low hills. They are bounded by the Pacific Ocean to the west and southwest; mountains form the remaining perimeter of each Basin. The region lies in the semi-permanent high pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This mild climatological pattern is interrupted infrequently by periods of hot weather, winter storms, or Santa Ana winds.

Because of very light wind speeds, the atmosphere within the basins has a limited ability to disperse air contaminants horizontally. The dominant daily wind pattern is daytime sea breezes and nighttime land breezes. This regime is broken only by occasional winter storms and infrequent strong northeasterly Santa Ana winds flowing down from the mountains and the high deserts north and west of the basins.

IV. BIOLOGICAL RESOURCES

Vegetation, wildlife, and fisheries resources are discussed separately below, including the methods used for identification and general information on those resources known or with potential to exist in the project study area. A description of noxious weeds and waters of the United States is included in the vegetation resources discussion. Common and scientific names of the plants, wildlife, and fish species are provided in **Appendix H**.

Methods

Vegetation Resources

Existing available information was reviewed to determine the locations and types of vegetation resources that could exist in the project study area (an average 50 feet form the asphalt's edge), including the California Department of Fish and Game's (DFG's) Natural Diversity Data Base (NDDB) (1999) and the Carlsbad office of the United States Fish and Wildlife Service (USFWS).

Reconnaissance-level field surveys were conducted in early 1999 for the project route. Additional vegetation surveys were conducted during June 8 and 11, 1999, August 2 and August 26, 1999, and November 2 and 19, 1999. The general purpose of the field surveys was to:

- characterize plant communities and unique plant assemblages,
- determine if suitable habitat is present for special-status plant species know to occur in the region

- delineate waters of the United States (including wetlands) using the U.S. Army Corps of Engineers' (Corps') 1987 Wetland Delineation Manual (Environmental Laboratory 1987),

- gather information to assist project engineers with project route design through identification of sensitive vegetation and wetland resource constraints and avoidance opportunities, and

- coordinate with state and federal resource agencies to develop measures that avoid or minimize impacts on vegetation and wetland resources.

Plant Communities. The project route encompasses a variety of plant communities within the South Coast and Peninsular Ranges geographical divisions. The definition and boundaries of geographical divisions follow the Jepson Manual (Hickman 1993). Plant communities within these geographic regions are discussed below for the project route.

Noxious Weeds. Noxious weeds have been identified as issues of concern and are addressed in this subsequent IS/MND. Two federal acts, and one executive order direct weed control: the Carlson-Foley Act of 1968 and the Noxious Weed Act of 1974, and a federal executive order (Order 11312) on invasive species (February 3, 1999).

Riverside and San Diego Counties are also concerned about noxious weed infestation and dispersal on private and public lands. To identify noxious weed species of concern along each project route, the following sources were consulted:

- a list of species designated as federal noxious weeds by the U.S. Department of Agriculture;
- county agricultural commissions (Riverside, and San Diego County do not have lists of Noxious Weeds at this time);

- California Department of Food and Agriculture's "A", "B", and "C" lists of noxious weeds;

- California Exotic Pest Plant Council list of pest plants of ecological concern;

Table 4.IV-2 lists the high-priority noxious weeds identified by these sources and indicates which weed species were observed along each project route. Noxious weed locations, infestation levels, and location s of proposed wash stations will be provided to the appropriate land management and resource agencies prior to construction.

Table 4.IV-2. Noxious Weed Species of Concern

Common/Scientific Name[A]	Species Identified to Date Along the Route
Biddy biddy (*Acaena nova-zelandiae*)	
Pale biddy biddy *(Acaena pallida*)	
Punagrass *(Achnatherum brachychaetum*)	
Camelthorn *(Alhagi pseudalhagi*)	
Alligatorweed (*Alternanthera philoxeroides*)	
European beach grass (*Ammophila arenaria*)	

Table 4.IV-2. Noxious Weed Species of Concern

Common/Scientific Name[A]	Species Identified to Date Along the Route
Giant reed (*Arundo donax*)	x
Capeweed (*Arctotheca calendula*)	
White-top, hoary cress (*Cardaria draba* [b])	
Plumeless thistle (*Carduus acanthoides*)	
Musk thistle (*Carduus nutans*)	
Whitestem distaff thistle (*Carthamus leucocaulos*)	
Purple starthistle (*Centaurea calcitrapa* [B])	
Diffuse knapweed (*Centaurea diffusa*)	
Iberian starthistle (*Centaurea iberica*)	
Spotted knapweed (*Centaurea maculosa*)	
Squarrose knapweed (*Centaurea squarrosa*)	
Skeletonweed *(Chondrilla juncea*)	
Yellowspine thistle (*Cirsium ochrocentrum*)	
Wavyleaf thistle (*Cirsium undulatum*)	
Narrow-leaved iceplant, roundleaf iceplant (*Conicosia pugioniformis*)	
Andean pampas grass, jubatagrass (*Cortaderia jubata)*	
Pampas grass (*Cortaderia selloana*)	
Cotoneaster (*Cotoneaster pannosa*)	
Bearded creeper (*Crupina vulgaris*)	
Dudaim melon *(Cucumis melo var. dudaim*)	
Giant dodder (*Cuscuta reflexa*)	
Artichoke thistle (*Cynara cardunculus* [b])	x
Scotch broom (*Cytisus scoparius* [c])	
Portuguese broom (*Cytisus striatus*)	
Veldt grass (*Ehrharta calycina*)	
Veldt grass *(Ehrharta erecta*)	
Russian olive (*Elaeagnus angustifolia*)	x
Leafy spurge (*Euphorbia esula*)	x
Serrate spurge *(Euphorbia serrata*)	
Fennel (*Foeniculum vulgare*)	x
French broom (*Genista monspessulana*[c])	
Russian salttree (*Halimodendron halodendron*)	
Halogeton *(Halogeton glomeratus*)	
English ivy (*Hedera helix*)	
Blueweed (*Helianthus ciliaris*)	
Tanglehead (*Heteropogon contortus*)	
Hydrilla (*Hydrilla verticillata*)	
Dyers woad (*Isatis tinctoria* [B])	
Perennial pepperweed (*Lepidium latifolium* [B])	
Glossy privet (*Ligustrum lucidum*)	

Table 4.IV-2. Noxious Weed Species of Concern

Common/Scientific Name[A]	Species Identified to Date Along the Route
Dalmation toadflax (*Linaria genistifolia ssp.) dalmatica*	
Bush lupine (Pt. Arena only) (*Lupinus arboreus*)	
Purple loosestrife (*Lythrum salicaria* [B])	
Myoporum (*Myoporum laetum*)	
Onopordum thistles (*Onopordum spp.*)	
Cooper's broomrape (*Orobanche ludoviciana* var. *cooperi)*	
Branched broomrape (*Orobanche ramosa*)	
Harmel (*Peganum harmala*)	
Kikuyu grass (*Pennisetum clandestinum*)	
Fountain grass (*Pennisetum setaceum*)	x
Lippia (in vernal pools) *(Lippia nodiflora*)	
Smooth groundcherry (*Physalis virginiana var. sonorae*)	
Creeping mesquite (*Prosopis strombulifera*)	
Bridal broom (*Retama monosperma*)	
Himalaya blackberry (incipient populations only) (*Rubus discolor*)	
Wormleaf thistle (*Salsola damascena*)	
Russian thistle (*Salsola tragus*)	x
Meadow sage *(Salvia pratensis*)	
Chinese tallow (*Sapium sebiferum*)	
Brazilian pepper (*Schinus terebinthifolius*)	
Mediterranean grass (*Schismus arabicus*)	
Mediterranean grass (*Schismus barbatus*)	
Golden thistle (*Scolymus hispanicus*)	
German ivy (*Senecio mikanioides*)	
Heartleaf nightshade (*Solanum cardiophyllum*)	
Torrey's nightshade (*Solanum dimidiatum*)	
Perennial sowthistle (*Sonchus arvensis*)	x
Spanish broom (*Spartium junceum*)	
Austrian peaweed (*Sphaerophysa salsula*)	
Witchweed (*Striga asiatica*)	
Wild marigold (*Tagetes minuta*)	
Athel *(Tamarix aphylla*)	
Tamarisk, salt cedar (*Tamarix chinensis, T. gallica, T. parviflora, T. ramosissima*)	
Gorse (*Ulex europaeus*[B])	
Syrian beancaper (*Zygophyllum fabago*)	

Table 4.IV-2. Noxious Weed Species of Concern

Common/Scientific Name[A]	Species Identified to Date Along the Route

[a] All California Department of Food and Agriculture A Rated Weeds (noxious weeds mandated for eradication or containment by that agency) are included in this table. Additionally, some species from the California Exotic Pest Plant Council (CalEPPC) lists are also included based on recommendations made by Ron Unger, a weed ecologist.

[b] Species listed as B on the California Department of Food and Agriculture list of noxious weeds. These species are more widespread than A listed weeds and therefore difficult to contain. The agency leaves eradication or containment to the discretion of the County Agricultural Commissioners.

[c] Species listed as C on the California Department of Food and Agriculture list of noxious weeds. These species are so widespread the agency generally does not endorse state- or county-funded eradication or containment efforts except in nurseries or seed lots.

For the purpose of this analysis and field surveys, a noxious weed is a plant that has the potential to displace native plants and natural habitats, affect the quality of forage on rangelands, or affect cropland productivity. High-priority noxious weeds include all California Department of Food and Agriculture's A rated species. Some B and C rated species were included in this analysis if they were identified by county agricultural commissions as target noxious weeds. Additional weeds were included if they were considered to have great potential for displacing native plants and damaging natural habitats and are not considered too widespread to be effectively controlled. Noxious weed infestationswill be documented by mapping polygons of noxious weeds and assigning a level of infestation. These levels include the following:

- Level 1 Infestation: less than 1% absolute cover,
- Level 2 Infestation: 2%-10% absolute cover,
- Level 3 Infestation: 11%-50% absolute cover, and
- Level 4 infestation: 51%-100% absolute cover.

Preconstruction surveys for noxious weeds will be conducted in February 2000. Plants listed in Table 4.IV-2 will be the object of the field surveys. Methods for preventing the spread of existing noxious weed infestations in the project study area will be determined and made available to Williams and to appropriate land management agencies.

Waters of the United States. For the purpose of this document, the term waters of the United States is an encompassing term used by the Corps for areas that would qualify for federal regulation under Section 404 of the Clean Water Act.

Other waters of the United States are sites that lack one or more of the three mandatory criteria for wetlands. Other waters of the United States identified in the project study area include drainages. For the purpose of this document, drainages include all streams, creeks, rivers, and other surface features with defined beds and banks. These drainages are also regulated by the DFG for activities that would interfere with the natural flow of, or substantially alter, the channel, bed, or bank.

Special-Status Plant Species. Information on occurrences of special-status plants on the project study area was obtained initially from the NDDB (1999), the U.S. Fish and Wildlife Service (USFWS) (**Appendix I**), and reconnaissance-level surveys of the project route. Additional information on species' habitat requirements, blooming periods, and field identifying characteristics was obtained from state floras (Munz and Keck 1973, Hickman 1993) and from the California Native Plant Society (CNPS) inventory (Skinner and Pavlik 1994).

For the purpose of this subsequent IS/MND, the term special-status plants is defined as species that are:

- listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (ESA) (50 CFR 17.12 for listed plants and various notices in the Federal Register for proposed species);
- candidates for possible future listing as threatened or endangered under the federal ESA (58 FR 188: 51144-51190, September 30, 1993);
- federal species of concern (former C2 candidates);
- listed by the State of California as threatened or endangered under the California ESA (14 CCR 670.5);
- plants listed as rare under the California Native Plant Protection Act of 1977 (California Fish and Game Code, Section 1900 et seq); and
- plants considered by California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (List 1B).
- Selected CNPS List 2,3 and 4 plants identified in Skinner and Pavlik (1994) that may be unusual occurrences, range extensions, or have other unique attributes that would warrant their consideration under CEQA

A total of 71 listed special-status plant species could occur in the project region, including 32 plant species federally listed and state-listed either threatened or endangered and 39 nonlisted species (**Appendix H-3**).

Wildlife Resources

The goal of the wildlife resource studies conducted for the project is to obtain sufficient information to adequately assess the potential impacts of the project on wildlife resources along the project route. To accomplish this goal, the following tasks were conducted:

- obtain and review existing information on wildlife resources known to be present in the project study area;

- conduct habitat-based field surveys (described below) to describe and evaluate habitat types and species associations along the project route;

- if necessary, conduct species-specific field surveys (described below) for special-status wildlife species;

- gather information to assist project engineers with project route design through identification of sensitive wildlife resource constraints and avoidance opportunities; and

- coordinate with state and federal resource agencies to develop measures that avoid or minimize impacts on wildlife resources.

Prefield Survey Investigation. Before field surveys were conducted, existing and available information was gathered and reviewed to determine the location and types of wildlife resources that could exist in the project study area, including habitat conservation plans, resource management plans, and other environmental documents prepared for other projects in the project study area. Information on species occurrences was also gathered from statewide databases through contacts with the Natural Heritage Division and Nongame and Endangered Wildlife Section of DFG. Contacts were made with resource specialists from DFG and the USFWS to gather file information on wildlife resources in the project study area, including mapped and database information (**Appendix I**). Two species experts, Anita Hayworth (California gnatcatcher and Quino checkerspot butterfly) and Steve Montgomery (Stephens' kangaroo rat), provided specialized technical expertise. Contacts were made by telephone, through correspondence, and through office visits.

All existing resource information was mapped onto U.S. Geological Service (USGS) 7.5-minute quadrangle. Lists of all special-status wildlife species with potential to occur in the project study area, along with their legal status, distribution, and habitat association, are provided in **Appendix H-4**.

Habitat-Based Field Surveys. Qualified wildlife biologists conducted habitat-based field surveys on the project study area. Surveyors visited the project study area and mapped habitat types within and adjacent to the project route. Ms. Hayworth and Mr. Montgomery assessed habitat suitability for their respective species. Generally, habitats were mapped and evaluated within a 400-foot-wide corridor. The objectives of these surveys were to:

- complete a detailed habitat-based resource survey of the entire project route and surrounding area to characterize habitat type, quality, and species associations, and

- evaluate habitat for threatened, endangered, candidate, and other special-status wildlife species that were identified as having the potential to occur in the project study area.

Species-Specific Field Surveys. Based on the results of the prefield survey investigation, habitat-based surveys and construction methods, species-specific surveys will not be conducted. Williams biologists met with Ms. Hayworth and USFWS biologist, Christine Moen, on December 21, 1999, to look at habitat suitability for threatened and endangered species and to identify avoidance measures. Based on the field visit USFWS concurred that Williams will avoid impacts on threatened and endangered species if they remain within the

road right-of-way and construct outside of the breeding season for the California gnatcatcher, and the flight season for the Quino checkerspot butterfly, in areas adjacent to potential habitat. Therefore, no species-specific field surveys are necessary.

Special-Status Wildlife Species. As described in the previous section, "Prefield Survey Investigation", various information was gathered and reviewed to develop a list of threatened, endangered, candidate, and other special-status wildlife species that exist or could exist in the project study area. Several data sources were reviewed to develop this list, including database records from the NDDB (1999), published and unpublished literature, and results of reconnaissance-level field surveys.

In this subsequent IS/MND, the term special-status wildlife includes species that are:

- listed or proposed for listing as threatened or endangered under the federal ESA (50 CFR 17.11 [listed animals] and various notices in the Federal Register for species);
- candidates for possible future listing as threatened or endangered under the federal ESA (58 FR 188: 51144-51190, September 30, 1993);
- federal species of concern (former C2 candidates);
- listed by the State of California as threatened or endangered under California ESA (14 CCR 670.5);
- animal species of special concern to DFG (Remsen 1978 [birds] and Williams 1986 [mammals]); and
- animal species fully protected in California (Cal. Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians].

Discussions of various special-status wildlife species are presented later in the section under "Threatened, Endangered, Candidate, and Other Special-Status Species". There are a total of 17 state- or federally listed and 60 nonlisted special-status wildlife species that could exist in the project study area (**Appendix H-4**).

Fisheries Resources

Fisheries resources were evaluated for the project route. Information on fish and habitats in, and downstream of, the project study area was obtained from NDDB, published literature, and previously prepared environmental documents. Literature reviewed is listed in Chapter 6, "Citations", under Moyle 1976; Leidy 1984; Sigler and Sigler 1987; Swift et al. 1989; Swift et al. 1993; Moyle et al. 1995; Busby et al. 1996; Jones & Stokes Associates 1995, 1997, and 1998; and Titus et. al in press. For the purposes of this CEQA analysis, information is provided for named mapped drainages found on USGS 7.5-minute quadrangles.

Special-Status Fish Species. For the purpose of this subsequent IS/MND, the term special-status fish includes species that are:

- listed or proposed for listing as threatened or endangered under the federal ESA (various notices in the Federal Register for species);

- candidates for possible future listing as threatened or endangered under the federal ESA (58 FR 188: 51144-51190, September 30, 1993);

- federal species of concern (former C2 candidates);

- listed by the State of California as threatened or endangered under the California ESA (14 CCR 670.5); and

- California state species of concern.

Special-status fish species potentially associated with the project route are discussed in more detail later in this section. Lists of all special-status fish species with potential to occur in the project study area, along with their legal status, distribution, and habitat association, are provided in **Appendix H-4**. A total of one special-status fish species could exist in drainages crossed by the project route.

Setting

Plant Communities and Associated Wildlife Habitats

Urban Landscaping. Urban lands consisting of various urban structures and facilities exist adjacent to the project route in almost all segments. Vegetation in urban areas consists of ornamental trees, shrubs, lawns, and flowerbeds. The urban landscape includes residential development, and urban development. The majority of the urban landscape is located within the cities of Riverside, Perris, Temecula, Escondido, and San Diego adjacent to the proposed route.

Buildings and ornamental plantings are attractive to certain wildlife species, including house mice, common barn owls, rock doves, and barn swallows. Disturbances by humans may reduce habitat values in adjacent natural areas.

Ruderal Habitat. Ruderal habitats exist throughout the project route along the shoulders of rural roads. These sites are dominated by weedy non-native and native species. The Linenberger OP-AMP site is ruderal and a disced agricultural field. The Mesa Rock OP-AMP site is primarily ruderal with some annual grasses and scattered California buckwheat. Disturbed habitats within the area south of Temecula along Old Highway 395, along Kearny Villa Road near Miramar tend to have a higher proportion of native herbaceous and shrub species. Just south of the Mesa Rock OP-AMP site is approximately 20 acres of coastal sage shrub which provides habitat for Quino checkerspot butterfly and California gnatcatcher.

Although often consisting of non-native plant species, ruderal habitats, particularly at edges of natural communities, can provide foraging habitat for many species of birds and mammals.

Agricultural Lands. Agricultural lands occur intermittently along and adjacent the project route primarily from Riverside to Escondido, and within the Sorrento Valley . They include orchard, row crops, irrigated pasture, and rangeland.

Agricultural habitats have varying benefits to wildlife. The lack of adjacent native habitats and intensive management of agricultural lands, including discing, grazing, crop rotation, and the use of chemicals, reduces the value of agricultural lands for wildlife. Many wildlife species have adapted to particular crop types and

now use them for foraging and nesting. Raptor species use row and grain crops for foraging, and several species of common rodents are found in agricultural fields. Agricultural habitats also provide foraging and nesting for migrating and wintering raptors, waterfowl, and shorebirds. Grain crops are considered of high value for wildlife because of the importance of waste grain to foraging waterfowl. Row crops provide moderate-quality habitat because of limited cover and foraging opportunities. Orchards provide low-quality wildlife habitat because of limited foraging opportunities.

Annual Grassland. Annual grassland a herbaceous community dominated by ruderal introduced weedy species, is found throughout the project route. Grasslands are found adjacent to the project route within agricultural areas and rural development.

Wildlife species richness in annual grasslands is moderate and species diversity is high. Grasslands are important because they support insects, amphibians, reptiles, and small birds and mammals that are preyed on by other wildlife, including red-tailed hawks, American kestrels, owls, and coyotes. The federally listed as endangered and state-listed as threatened Stephens' kangaroo rat occurs in annual grassland throughout Riverside County.

Southern Mixed Chaparral. Southern mixed chaparral is found on low-elevation mountain ranges generally below 5,000 feet. Along the project route, this habitat is found adjacent to the proposed project route in San Diego County along the Del Dios Highway and Old Highway 395 near the Riverside/San Diego county line. primarily in San Diego County along the Del Dios Highway and Old Highway 395 near the Riverside/San Diego County line. The vegetation is generally dominated by shrubs with thick, stiff evergreen leaves (Mayer and Laudenslayer 1988). Percent cover is usually high (80%), unless the community has been recently burned. Mixed chaparral communities are diverse in plant species but are often dominated by one or two shrub species dependent on soil type and amount of precipitation. Dominant plant species include chamise, ceanothus, oaks, and manzanita. Installation of the fiber optic cable will occur within the paved portion of the road and no habitat would be removed during construction.

Several bird, reptile, and mammal species are common in mixed chaparral habitats. Wrentits, black-chinned sparrows, Bewick's wren, Costa's hummingbirds, and California thrashers use the extensive shrub cover for foraging and nesting. Common reptiles include western fence lizard and gopher snakes. Meso-predators, including coyote, gray fox, and bobcats, forage for rodents in the chaparral such as California ground squirrels and deer mice.

Chamise Chaparral. Chamise chaparral is a dominant community in the south Coast Range. This habitat is similar to and is found integrading with southern mixed chaparral. The dominant species within this habitat is chamise with ceanothus and manzanita. Along the project route, this habitat is found primarily adjacent to the proposed construction corridor in San Diego County along the Del Dios Highway and along Old Highway 395 near the Riverside/San Diego county line. Installation of the fiber optic cable will occur within these road right-of-ways and would not involve the removal of any chamise chaparral habitat.

Plants and wildlife associated with chamise chaparral are the same as those described above for southern mixed chaparral.

Riversidean Sage Scrub. Riversidean sage scrub is a plant community along the coastal base of the Peninsular Range. This plant community is generally found on dry slopes adjacent to the proposed project, and scattered throughout the project route within Riverside County. Installation of the fiber optic cable will occur

within the existing road right-of-way, and no habitat would be removed during construction. The dominant species are California sagebrush and California buckwheat. The understory generally consists of annual grassland species.

Plants associated with Riversidean sage scrub provide berries and seeds for a variety of birds, such as California quail, northern mockingbirds, American robins, hermit thrushes, spotted towhees, California towhees, dark-eyed juncos, and golden-crowned sparrows. Insectivorous birds, such as orange-crowned warblers, bushtits, and Bewick's wrens, feed on insects in shrub foliage. Many bird species also find nesting and roosting sites and protection from predators in this habitat. The federally listed as threatened California gnatcatcher is one of these species using this habitat for nesting and foraging. Numerous rodents also inhabit this community. The federally listed San Bernardino kangaroo rat occurs in sage scrub associated with alluvial soils deposited from adjacent channels.

Diegan Coastal Sage Scrub. The characteristic species include California sagebrush, California buckwheat, and laurel sumac. Diegan coastal sage scrub exists along the southern segments of this project route. Diegan coastal sage scrub occurs along the southern California coastal zone. This community is primarily found adjacent to the proposed project route along Old Highway 395, the Del Dios Highway, and Kearny Villa Road. To the south of, and adjacent to the Mesa Rock Road OP/AMP site is a large, approximately 20 acre site dominated by species characteristic of Diegan coastal sage scrub. This plant community makes up the southern boundary of the OP/AMP site. No Diegan coastal sage scrub habitat would be removed during construction.

The Diegan coastal sage scrub adjacent to the Mesa Rock Road OP/AMP site provides potential habitat for Quino checkerspot butterfly and California gnatcatcher. During construction of the OP/AMP site, habitat for these species will not be impacted and construction will be conducted during the non-breeding season for the California gnatcatcher and the non-flight season for the Quino checkerspot butterfly.

Coast Live Oak Woodland. The coast live oak woodland is typically found on north facing slopes and shaded ravines in the south coast. The dominant species is coast live oak. The shrub layer in this habitat is poorly developed but includes toyon, mexican elderberry, and gooseberry. This habitat is primarily found along the project route adjacent to Old Highway 395 just south of Temecula. Installation of the fiber optics cable will occur within the paved portion of Old Highway 395 and would not involve the disturbance of coast live oak woodland habitat.

Coast live oak woodlands are important for wildlife because they provide valuable forage, cover, and nesting habitat for many ground, shrub, and tree nesting species. Many bird species use cavities in oaks including American kestrel, western screech-owl, tree swallows, flycatchers, and nuthatches. Acorns provide an important food source for many species, including band-tailed pigeons, western gray squirrels, and deer. Oak foliage and bark attract insects that are important to the diet of birds.

Southern Cottonwood Willow Riparian Forest. Southern cottonwood willow riparian forest exists along the San Luis Rey River and the San Diequito River. This plant community has a low to medium canopy cover of trees and shrubs. The dominant trees are Fremont cottonwood and red willow, but other tree species are present, including western sycamore. Dominant understory shrubs include arroyo willow and mulefat. On floodplains subject to scouring during high flows, sparse cover of ruderal species is present.

Despite widespread disturbance from urbanization, agriculture, grazing, riparian forest remains an important wildlife resource because of its scarcity regionally and statewide and because the riparian community is used by a variety of wildlife species. This habitat provides abundant aquatic and terrestrial invertebrates as prey to amphibian and reptiles, such as the common garter snake, western skink, and ringneck snakes, as well as insectivorous birds. Small mammals found in riparian habitats include shrews, voles, bats, and mice. Raptors that nest in large riparian trees include great horned owl, red-tailed hawk, and American kestrel. Cavity-nesting species such as woodpeckers, squirrels, and racoons require mature stands of trees.

Southern cottonwood-willow riparian forest is considered a sensitive plant community subject to DFG jurisdiction under Section 1600 et.seq. of the Fish and Game Code.

Mixed Willow Scrub. Mixed willow scrub exists along portions of San Gertrudis Creek, Temucula Creek, and Pechanga Creek. This habitat is seasonally flooded. The dominant species are arroyo willow, narrow-leaved willow, and red willow.

Mixed willow scrub provides a variety of benefits for many species of wildlife, including over 50 species of reptiles and amphibians. Insect abundance is high, providing forage for many neotropical migratory birds. The dense cover of willow scrub provides nesting, thermal, and escape cover used as migration corridors.

San Diego Hardpan Vernal Pools. San Diego mesa hardpan vernal pools are the most abundant type of vernal pool in the project region. The type of vernal pool occurs adjacent to the project route along Kearny Villa Road near the Miramar Air Station. They are underlain by reddish colored soils with an iron silica cemented hardpan, and dominated by four special-status species(San Diego mesa mint, Orcutt's brodiaea, and San Diego and Riverside fairy shimp). The surrounding vegetation is typically chamise chaparral or coastal sage scrub.

Threatened, Endangered, Candidate, and Other Special-Status Species

Plants. A total of 71 special-status plant species have the potential to occur in the project region (**Appendix H-3**). Of these, 18 species are federally or state listed as threatened or endangered, and 53 are nonlisted special-status species.

Botanists located the following two special-status plant species during the 1999 field surveys (see Volume II for locations of special-status plants and their habitat.

- Orcutt's brodiaea is listed as 1B by the CNPS. This species is associated with the vernal pools located off the proposed construction corridor greater than 100 feet from Kearny Villa Road near the Miramar Air Station. Installation of the fiber optics cable will occur within the asphalt portion of Kearny Villa Road.

- San Diego mesa mint is listed as federally and state endangered. This species is associated with the vernal pools located off the proposed construction corridor greater than 100 feet from Kearny Villa Road near the Miramar Air Station. Installation of the fiber optic cable will occur within the asphalt portion of Kearny Villa Road.

Based on habitat assessments no suitable habitat occurs within the construction corridor (road shoulder and paved road) for these species.

Wildlife. A total of 77 special-status wildlife species have the potential to occur in the project study area (**Appendix H-4**). Of these, 11 species are federally listed as threatened or endangered, six are state-listed as threatened or endangered, and 60 are nonlisted special-status species.

During the surveys, suitable habitat for eight wildlife species was identified. These species are the Riverside fairy shrimp, San Diego fairy shrimp, Quino checkerspot butterfly, Stephens' kangaroo rat, California gnatcatcher, southwestern willow flycatcher, least Bell's vireo, and arroyo southwestern toad. The two fairy shrimp species are associated with the vernal pools along Kearny Villa Road. The vernal pools in this area are off the road right-of-way and installation of the fiber optic cable will occur within the asphalt of the paved road. Southwestern willow flycatcher and least Bell's vireo habitats were identified within riparian habitats including Temecula Creek, Pechanga Creek, and the San Dieguito River, and arroyo southwestern toad habitat within the San Dieguito River. Quino checkerspot butterfly habitat has potential to occur throughout the project study area where the project route is adjacent to open or bare soils with minimum amounts of non-native vegetation, and larval food plants. Stephens' kangaroo rats could occur in annual grassland and ruderal habitats in Riverside County. There is no potential habitat in the project route for the San Bernardino kangaroo rat or the vernal pool fairy shrimp.

Fish. One nonlisted special-status fish species, arroyo chub, has the potential to occur in the project study area within the San Luis Rey River and Santa Gertrudis Creek (**Appendix H-4**). **Appendix E** shows the location of the arroyo chub as related to drainages along the project route.

V. CULTURAL RESOURCES

Project Study Area

The project study area is defined as the project route where the fiber optic cable and associated facilities will be installed using ground-disturbing techniques. The study area will include both sides of the road right-of-way. The study area will also include two locations for OP-AMP stations, one in Riverside County (Lindenberger location) and one in San Diego County (Mesa Rock location).

No new access roads will be required to install the fiber optic cable lines along this project route. Construction equipment staging areas will be located within previously disturbed areas where there is no potential to effect significant cultural resources.

Inventory Methods

The cultural resource inventory of the project study area for the project consisted of archival research, contacts with Native American representatives, and a field survey.

Archival Research

Before the cultural resources inventory commenced, records searches were conducted at the Eastern Information Center and the South Coastal Information Center, of the California Historical Resources Information System. The records search parameters include identification of any surveys or sites within 1/4 mile of the project study areas. These records searches were conducted to identify previous studies conducted

in the area and previously recorded cultural sites located within the project area. Also consulted during the records searches were historic maps and historical inventories and registers, including the California Register of Historical Resources, the National Register of Historic Places (NRHP), California Inventory of Historic Resources, and California Historical Landmarks. **Appendix J** provides a summary of prefield and historic research conducted for the project route.

Historic and archival research was conducted at the information center and at the California State Library. Historical societies were contacted for information on historic settlements and ranches.

Native American Contacts

The Native American Heritage Commission (NAHC) was contacted, and asked to provide a list of Native American representatives and consult their Sacred Lands File for the project study area. Letters were sent to each of the 25 representatives informing them of the project and requesting information and concerns pertaining to the project and the project study area. Contacts with appropriate Native American individuals and organizations is continuing. A list of Native American representatives contacted, a sample letter, and conversation reports of any responses will be included in the cultural resources technical report currently in production.

Field Survey

The project study area was examined using a combination of cursory and intensive survey techniques. Cursory techniques consisted of driving the project route and spot checking sensitive areas. Sensitive areas were defined as those locations where cultural resources were known to exist and those areas that seemed particularly sensitive for cultural resources based on factors such as topography, proximity to natural resources, and presence of structures on historic maps. Intensive survey techniques consisted of qualified archaeologists performing a pedestrian survey employing transects spaced no more than 20 meters apart.

The survey coverage and intensity varied according to specific criteria determined at each survey segment. Criteria, such as previous survey areas, area disturbance, access, cultural resource sensitivity, and land forms, were considered in development of survey strategy. Areas that had been previously surveyed less than 10 years ago were not reexamined. Neither were areas that were paved, or landscaped, or that were not natural land surfaces. Areas that had not been previously surveyed or that were surveyed more than 10 years ago were examined using intensive survey techniques. Both locations for the OP-AMP stations were examined using intensive survey techniques. The survey was limited to an inventory of surface artifacts only. No subsurface probing was conducted, and no items were collected.

Site records for previously recorded sites identified in the records search were updated only if they actually extended into a survey area. Records for previously recorded sites were not updated if the information in the site record accurately reflected the site and its condition. Newly identified sites were recorded on Department of Parks and Recreation forms, in their entirety. Mapping of sites was completed by pacing and using a hand-held compass. Overview photographs of the sites were taken. Isolated artifacts found in the survey areas were located on a map and briefly described as to artifact type, material, and color.

Newly and previously recorded sites were flagged for avoidance. Pink whiskers with attached labels were placed along the project route marking the boundaries of archaeological sites. A table indicating recommended measures of avoidance for each individual cultural resource site was provided to Williams.

Identified Cultural Resources

A total of 13 cultural resource sites is located along the project route. These include seven prehistoric sites [CA-Riv-816 (C- Steele Peak-C-1), Ca-Riv-817 (C-Steele Peak-C-2), C- Steele Peak-D-1, CA-Riv-1845 (C-Romoland-A-1), CA-SDi-5072, CA-SDi-8747 (C-Escondido-C-1), and CA-SDi-2723 (C-Del Mar-C-1)]. Historic resources along the project route include an historic railroad station (33-7601) and a block of historic bungalows (33-7587) in Perris, both of which are listed on the NRHP. The project route crosses the Gage Canal (CA-Riv-4768-H or C-Riverside East-A-2); the historic Southern Pacific Railroad (C-Riverside East-C-1) in Riverside; and the historic Atchison, Topeka, and Santa Fe Railroad (C-Perris-C-1) in Perris. One historic bridge (C-Temecula-C-1), crossing Pechanga Creek at Pala Road, is located along the project route. In addition, one area of particular archaeological sensitivity was identified (the area between sites CA-SDi-4513, CA-SDi-4609, and CA-SDi-5443). No cultural resources were located at the Lindenberger or Mesa Rock OP-AMP locations.

No cultural resources were evaluated for significance in the course of this study. To meet the requirements and spirit of CEQA, Williams is treating all cultural resources as if they were eligible for listing in the CRHR and will avoid impacts on all cultural resource sites.

Regulations, Approvals, and Permits Applicable to Cultural Resources

This action is subject to the requirements of CEQA. As the designated state agency for approval of this action, CPUC is responsible for compliance with CEQA requirements and for the identification and treatment of historic and prehistoric cultural resources (Public Resources Code Sections 21082, 21083.2, and 21084.1 and California Code of Regulations 15064.5).

CEQA requires public or private projects financed or approved by public agencies to assess the effects of the project on cultural resources. Cultural resources are defined as buildings, sites, structures, or objects, which may have historical, architectural, archaeological, cultural, or scientific importance.

CEQA states that if a project results in significant effects on important cultural resources, then alternative plans or mitigation measures must be considered; however, only important cultural resources need to be addressed. Therefore, the importance of cultural resources must be determined before mitigation measures can be developed.

The State CEQA Guidelines define a significant historical resource as "a resource listed or eligible for listing on the California Register of Historical Resources (CRHR)" (Public Resources Code Section 5024.1). A historical resource may be eligible for inclusion in the CRHR if it:

- 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.

In addition, CEQA guidelines require consideration of unique archaeological sites [Section 15064.5(c)(3)]. If an archaeological site does not meet the CRHR criteria, but does meet the definition of a unique archaeological resource as outlined in the Public Resources Code (Section 21083.2), it may be treated as a significant historical resource.

If human remains are discovered on nonfederal lands during construction of the proposed action, it will be necessary to comply with state laws pertaining to human burials. The state CEQA Guidelines (Public Resources Code Section 5097) specify the procedure to be followed in case of unexpected discovery of human remains on nonfederal land. The disposition of Native American burials falls within the jurisdiction of the Native American Heritage Commission.

Paleontological Resources

Fossils are considered by the Society of Vertebrate Paleontology to be a non-renewable resource. One purpose of a paleontological investigation is to document the presence of fossils in the geologic record to provide a better understanding of the phylogenetic histories of species in the area or in general and provide keys to the history of evolution. In addition to revealing which species were present, the fossil record can give indications of previous climates and paleotemperatures, topography, geography, rainfall, and proximity to water bodies.

The project route will generally cross Cretaceous to Pleistocene age geologic units and has a low to high sensitivity for paleontological resources (**Table 4.V-1**). All identified paleontological resource sites located along the project route will be avoided.

Approach and Methodology

A literature search was conducted to determine the paleontological sensitivities of geologic units and paleontological localities previously identified along the project route. The literature search consisted of a search and review of available published and unpublished literature, including locality information from the California Museum of Paleontology and Los Angeles County Museum, paleontological survey reports, and paleontologic locality maps. Interviews were conducted with Dr. Larry Barnes and Dr. Ed Wilson of the Los Angeles County Museum to develop the sensitivities and significance of paleontological resources of the geologic formations along the project route.

Published and unpublished literature indicates that the project route and surrounding areas will be underlain by bedrock formations that have a low to high paleontological sensitivity (**Table 4.V-1**). Paleontological sensitivities of geologic units are determined by the potential for the recovery of fossil resources. Determining factors include the known fossil resources in the geologic unit, sedimentary rock types present, and the environment of deposition of the geologic unit.

Regional geologic maps for California identified geologic units, surficial sedimentary rocks, and cool volcanic flows that would be present on the project route (California Division of Mines and Geology 1977, Jones & Stokes Associates 1990). Although the presence of these deposits does not necessarily indicate the presence of fossils, these formations have the highest probability of preserving plant, animal, and invertebrate remains. **Table 4.V-1** summarizes the geologic units, age, and paleontological sensitivity for the project route. Fossilized

micro and macro flora and fauna of marine and non-marine origin, including marine vertebrates, land mammals, and other vertebrates, have been recovered from formations exposed along the project route.

Table 4.V-1. Paleontological Sensitivity of Geologic Units Potentially Occurring in the Project Study Area

Geologic Units	Age	Paleontological Sensitivity
Pauba Formation	Late Pleistocene	High
Basin filling deposits	Pleistocene	High
Linda Vista Formation	Pleistocene	Moderate
Bay Point Formation	Pleistocene	High
Sweitzer Formation	Pleistocene	High
Terrace deposits	Pleistocene	High
Unnamed sandstone unit	Pleistocene/Pliocene	High
Stadium conglomerate	Late Eocene	High
Friars Formation	Middle and late Eocene	High
Del Mar Formation	Middle Eocene	High
Torrey sandstone	Middle Eocene	High
Ardath shale	Middle Eocene	High
Scripps Formation	Middle Eocene	High
Santiago Peak volcanics	Jurassic	Low
Lusardi Formation	Cretaceous	Low
Granitic rocks	Mesozoic	None
Metamorphic rocks	Mesozoic	None

Regulations, Approvals, and Permits Applicable to Paleontological Resources

The Antiquities Act of 1906 and the Federal Land Policy and Management Act of 1976 mandate the protection of significant paleontological resources on federally owned, managed, or controlled lands. Additionally, California Pub. Res. Code Section 5097.5 states that it is a misdemeanor for any person to knowingly and willingly excavate, remove, or destroy a vertebrate paleontological site, including fossilized footprints or any other paleontological feature on public lands without the permission of the public agency having jurisdiction over the land.

VI. GEOLOGY AND SOILS

Geology

The Geologic map of California, Santa Ana sheet (Rogers 1965) and the geologic map of California, San Diego-El Centro sheet (Strand 1962) were used to assess existing geologic conditions along the project route.

Riverside County

The portion of the project route between Riverside and Woodcrest will cross over terrain underlain by Quaternary alluvium in the Santa Ana River basin. Between Woodcrest and Perris, the project route will cross over terrain underlain by Mesozoic granitic rocks of the Southern California Batholith and small areas of Mesozoic and Tertiary sedimentary and metasedimentary rocks (shales, sandstones, and conglomerates).

Between Perris and the southern boundary of Riverside County, the project route will cross terrain underlain primarily by Quaternary alluvium in the Perris, Menifee, Paloma, and Temecula valleys. Small portions of the project route between the Paloma and Temecula valleys, and between Temecula and the southern boundary of Riverside County, will cross small areas where the terrain is underlain by Mesozoic granitic and basic intrusive rocks of the Southern California Batholith.

San Diego County

Between the northern boundary of San Diego County and Rancho Santa Fe, the project route will cross over relatively mountainous terrain underlain by Mesozoic granitic rocks of the Southern California Batholith and small area of sedimentary, metasedimentary, and metavolcanic rocks. Portions of the project route in the San Luis Rey River Valley and in the vicinity of Rainbow and Escondido will cross terrain underlain by Quaternary alluvium.

Between Rancho Santa Fe and San Diego, the project route will cross over coastal uplands and plains underlain predominantly by Tertiary and Quaternary marine sedimentary and metasedimentary rocks (shale, sandstone, and conglomerate). Small areas along this portion of the project route are underlain by Quaternary nonmarine alluvial deposits.

Seismicity

The geologic map of California, Santa Ana sheet (Rogers 1965) and the geologic map of California, San Diego-El Centro sheet (Strand 1962), and the fault activity map of California and adjacent areas (Jennings 1994) were used to determine the locations of active and potentially active earthquake faults along the project route.

The project route will pass directly over several active and potentially active earthquake faults in the Elsinore Fault Zone, located between the Paloma Valley and Rainbow. The faults may cause ground surface displacement, which can occur in a variety of relative motions depending on the type of fault involved.

The project route also passes within close proximity (approximately 1-5 miles) of potentially active faults near Woodcrest, between the Temecula Valley and the San Luis Rey River Valley, and at the southwestern end of Lake Hodges. In these areas, as well as in areas where the project route crosses directly over faults, strong earthquake-induced ground shaking may occur. Sediments underlying the these portions of the project route may also be subject to earthquake-induced liquefaction, which may cause differential ground settlement and lateral spreading. Conditions most favorable for liquefaction include a fault capable of causing ground shaking and the presence of clean, loose, saturated sandy soils within 50 feet of the ground surface.

Soils

Information on existing soil conditions along the project route was gathered from the soil survey of the San Diego area (Bowman 1973) and from the general soil information provided by major land resource regions and major land resource areas of the United States (USDA Soil Conservation Service 1981).

Native soil characteristics vary widely throughout the areas that will be crossed by the project route. This variation is natural and is largely because of the wide range of topography, parent material, climate, and vegetation along the project route. Soils along the project route are described below as they exist in their natural, undisturbed state. However, most of the project route is located within existing transportation corridors where natural soil conditions are not likely to exist because of disturbances associated with past construction activities. In general, soils within these corridors should be less susceptible to accelerated erosion and landsliding due to attenuated slope gradients and to runoff management practices already in place.

Riverside County

Soils along the portions of the project route that cross gently sloping to steep upland terrain consist of very shallow to deep sandy loams, sandy clay loams, gravelly clay loams, and clays underlain by weathered granitic, sedimentary, and metasedimentary bedrock. In these areas, soil permeability is slow to rapid, surface runoff is medium to very rapid, and the erosion hazard is slight to very high.

Soils in nearly level to strongly sloping basins and valleys consist of deep and very deep loamy sands, sandy loams, clay loams, and silty clay loams underlain by mixed alluvium. In these areas, soil permeability is moderately rapid to rapid, surface runoff is slow to medium, and the erosion hazard is slight to moderate.

Soils on gently sloping to steep terrace and bench surfaces along the sides of valleys consist primarily of very deep sandy loams, loams, clay loams, and sandy clay loams and clays underlain with mixed alluvium. In these areas, soil permeability is very slow to moderate, surface runoff is slow to rapid, and the erosion hazard is slight to high.

Some soils along the Riverside County portion of the project route may classify as "expansive" under the Uniform Building Code.

San Diego County

Soils along the portion of the project route located in the foothills between the northern boundary of San Diego County and Lake Hodges exist primarily on gently sloping to steep foothills. They consist of very shallow to moderately deep sandy loams, silt loams, sandy clay loams, and clays underlain by decomposed granitic and metavolcanic bedrock. Soil permeability is slow to moderately rapid, surface runoff is slow to very rapid, and the erosion hazard is slight to very high.

In areas where the project route crosses nearly level to moderately steep terraces in the San Luis Rey River Valley and in the immediate vicinity of Rainbow and Escondido, soils consist of very deep sandy loams and sandy clay loams underlain by granitic alluvium. In these areas, soil permeability is very slow to moderately rapid, surface runoff is very slow to rapid, and the soil erosion hazard is slight to high.

Between Lake Hodges and Rancho Santa Fe, soils exist on gently sloping to moderately steep foothills and coastal plains. They consist of shallow to deep sandy loams, silt loams, clay loams, and clays underlain by weathered sandstone, siltstone, and metavolcanic bedrock. Soil permeability is slow to moderate, surface runoff is medium to rapid, and the erosion hazard is moderate to very high.

Two general soil types exist on the portion of the project route that crosses the nearly level to moderately steep coastal plains between Rancho Santa Fe and the southern terminus of the project route in San Diego. The first consists of deep and very deep sandy loams, clay loams, and clays underlain by granitic and sandstone

alluvium. Soil permeability is very slow to rapid, surface runoff is very slow to rapid, and the erosion hazard is slight to high. The second consists of moderately deep to deep gravelly and cobbly loams, clay loams, and clays underlain by gravelly and cobbly alluvium. An iron-silica cemented hardpan exists at a depth of about 30 inches in some areas. Soil permeability is very slow, surface runoff is medium to rapid, and the soil erosion hazard is slight to high.

Some soils along the San Diego County portion of the project route may classify as "expansive" under the Uniform Building Code.

Regulations, Approvals, and Permits Applicable to Geology, Seismicity, and Soils

A storm water pollution prevention plan (SWPPP) (which includes erosion and sediment control measures) is required by EPA to comply with National Pollutant Discharge Elimination System (NPDES) requirements. The EPA has delegated authority to the State Water Resources Control Board and the Regional Water Quality Control Boards (RWQCBs) to administer the NPDES program. A SWPPP for the project route has been prepared (**Appendix C**).

VII. HAZARDS AND HAZARDOUS MATERIALS

Hazards and hazardous materials issues include handling of hazardous materials, disposal of hazardous waste (unexpectedly encountered during trenching and construction activities), training of construction workers (responsibility of the construction contractor), and the potential risk of upsetting and exposing to the community from an unexpected release or spill and fire hazards. The CEQA environmental checklist (**Appendix A**) identifies eight areas of potential concern under the issue of hazards and hazardous materials.

A search of federal, state, and local government databases regarding hazardous materials was conducted for the project route. The collective databases list regulated and unregulated hazardous waste generators, leaking tank sites, toxic spills, and other sites affecting the environment. An information technology firm was retained to perform a search of site specific environmental hazards within 1,000 feet of the centerline of the project route. The information obtained from the multiple databases was sorted and standardized. The result is a comprehensive inventory of environmental information related to hazardous materials that will be translated into mapped and site-specific reports for all aspects of a hazards analysis. The following databases were included in the search:

- National Priority List;
- Resource Conservation and Recovery Act (RCRA) Corrective Actions;
- RCRA permitted treatment, storage, disposal facilities;
- State equivalent priority list;
- State equivalent Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list;
- Sites under review by EPA (CERCLIS/Archive [NFRAP] database);

- Leaking Underground Storage Tanks;
- Solid waste landfills, incinerators, or transfer stations;
- Additional federal, state and regional lists, where available;
- Toxic Release Inventory database;
- Registered underground storage tanks;
- Registered aboveground storage tanks;
- RCRA registered small or large generators of hazardous waste;
- RCRA violations/enforcement actions; and
- Emergency Response Notification System and state spills lists.

The results of the database search will assist in reviewing the project route and OP-AMP station locations to ascertain existing contaminated areas and potential areas where hazardous substances should be avoided during construction activities.

An environmental transaction screen (ETS), which is a site specific hazardous materials report, will be prepared for each of the two OP-AMP stations. The ETS reports are used to evaluate the sites for recognized hazardous conditions associated with past or current site activities or site conditions. The ETS strives to provide "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice in an effort to minimize liability", as stated in the Comprehensive Environmental Response, Compensation and Liability Act, (42 U.S.C. 9601, et. seq., liability).

Williams will retain the services of an environmental consulting firm to prepare the ETS reports for the two OP-AMP stations. These assessments, performed in accordance with the American Society for Testing and Materials standards, include, but are not limited to, the following:

- a site reconnaissance to assess existing conditions and evaluate, if possible, potential environmental concerns at the site;
- a reconnaissance of the immediate site vicinity to evaluate surrounding land use and make relevant observations regarding the potential for environmental concerns that might exist;
- a review of regulatory agency database lists to evaluate recognized environmental conditions in the vicinity of the project route;
- an interview with the landowner;
- completion of a transaction screen questionnaire; and
- preparation of the ETS report documenting the findings of the study.

If conditions onsite are determined to have recognized environmental concerns, further assessment may be required through a Phase I or Phase II environmental report, depending on site conditions and Williams' approval.

Regulations, Approvals, and Permits Applicable to Hazards and Hazardous Materials

A variety of regulatory issues pertain to the handling and disposal of hazardous materials and waste, including proper training of personnel handling such materials.

Workers exposed to hazardous waste (unexpectedly encountered during construction) should be properly trained in accordance with Occupational Safety and Health Administration (OSHA) guidelines[1]. This training allows for worker safety, proper handling, knowledge of testing instruments, and safety equipment (e.g., respirators).

Hazardous waste is to be handled and disposed of in accordance with the RCRA (40 CFR Part 260). Local jurisdictions (e.g., city or county health departments) may have area-specific requirements.

Consultation and coordination with regulatory land managers is required along certain portions of the project route that may be susceptible to fire hazards.

VIII. HYDROLOGY AND WATER QUALITY

Hydrologic Setting

The project route will cross several geographically separated drainage areas of the generally arid inland areas of central Riverside and west San Diego Counties. In Riverside County, the project route will originate south of the Santa Ana River and cross generally small dry desert washes that only have flows during storm events in winter. Near the boundary between Riverside and San Diego Counties, the project route enters the San Jacinto River drainage basin and crosses the San Jacinto River near the town of Perris. The project route will continue south generally aligned within canyon corridors of the surrounding steep mountainous terrain crossing Gertrudis Creek, Temecula Creek, and the wide valley floor of the San Luis Rey River. The southern extent of the project route will follow the San Dieguito River valley from Escondido to the coast where it crosses the river, and other small drainage channels that drain west to the coastline, before its terminus in San Diego.

Precipitation

Precipitation over the inland portions of the project route are generally low, ranging from 10 to 15 inches annually. Precipitation in the interior mountainous valleys can be higher and ranges from 15 to 30 inches. Annual rainfall along the southern portion of the project route near the coast is generally 10 inches. The climate is moderate and temperature extremes are minimal on the coast, whereas seasonal temperatures can vary by 100°F at inland locations.

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[1] Refer to OSHA's Hazardous Waste Operations and Emergency Response (HAZWOPER) fact sheet 93-31, which specifies training for workers at hazardous materials sites (available http://www.osha-slc.gov/OshDoc/Fact_data/FSNO93-31.html)

Water Quality

Streams that will be found along the project route are subject to great changes in volume because of seasonal variations in precipitation and runoff. Headwater streams are generally cool and clear; water quality is good and linked closely to the condition of the bed and banks of the stream channel. Degraded conditions most often consist of high sediment loads, which are a function of mass wasting (naturally unstable lands and management-influenced failures) and surface erosion processes (roads, developments, and other nonpoint sources). Removal of riparian vegetation also interrupts processes that maintain stream water quality.

As water enters the valleys, waters become warmer and tend to accumulate increased sediment and other pollutants in urban communities and agricultural areas. Water quality decreases because of the additional influences of urban and industrial development, diversions, agricultural runoff, additional loss of riparian vegetation, and other factors.

Water Uses

Beneficial water uses of water bodies that will be crossed by the project route generally include domestic and municipal water supply, recreation, agriculture, industrial uses, and protection of fish and wildlife. No aspect of this project will change surface or subsurface flows; thus, the project will not affect groundwater or surface water sources for these beneficial uses.

Floodplains

Federal Emergency Management Agency- (FEMA-) designated floodplains are identified for larger streams, including the San Jacinto River, Temecula Creek, San Luis Rey River, and San Dieguito River. Floodplain information is rarely available for small rural streams in unpopulated areas. The project route also crosses designated inundation areas that will be created in the event of dam failures for Lake Perris near Perris, Skinner Reservoir upstream of Temecula Creek, and Lake Hodges and Lake Sutherland located on the San Dieguito River. No aspect of this project will substantially change flood conveyance or floodplain characteristics of drainage channels in the project study area.

Regulations, Approvals, and Permits Applicable to Hydrology and Water Quality

California's nine RWQCBs are primarily responsible for identifying beneficial uses of surface and groundwater resources and establishing water quality standards and implementation programs to protect those uses. The portion of the project route located in Riverside County is within the Santa Ana RWQCBs jurisdictional area; the remainder of the project route is within the San Diego RWQCB. Section 303(d) of the Clean Water Act requires each state to maintain a list of water quality limited streams that are impaired by the presence of pollutants, including physical and chemical characteristics. There are no 3039(d) listed surface waters along the project route (State Water Resources Control Board 1999).

If soil disturbance exceeds 5 acres, a general construction activity permit under the National Pollutant Discharge and Elimination System (NPDES) (Section 402 of the Clean Water Act) requires preparation and implementation of a storm water pollution prevention plan (SWPPP). Best management practices to reduce and control stormwater discharges related to project construction will be specified in the SWPPP. Construction activities subject to the NPDES permit restrictions will be administered by the appropriate RWQCB for each

project route segment. Williams will prepare the SWPPP and acquire authorization under the general NPDES permit prior to starting construction.

Because all streams, drainages, and wetlands will be avoided by boring or attaching to bridges (when boring is not viable), no Section 404 permit will be required. Consequently, a Section 401 water quality certification (or waiver) will not be required.

The DFG regulates streambed alterations, including the release of materials into streams, under Section 1603 of the Fish and Game Code (see "State Policies and Regulations Concerning Waters of the United States" in the "Biological Resources" section of this chapter). Williams will obtain streambed alteration agreements from the DFG where necessary.

Local county flood control and water conservation districts typically are responsible for coordinating flood control programs and emergency preparedness and response plans. The FEMA maps and designates floodplain areas for avoiding flood-related loss of life or property, and managing flood insurance programs.

IX. LAND USE AND PLANNING

Land use planning is the province of local government in California. Each city and county is required to adopt a "general plan" that establishes goals and policies for long-term development, protection from environmental hazards, and conservation of identified natural resources. Typically, a general plan lays out the pattern of future residential, commercial, industrial, agricultural, open space, and recreational land uses within a community. Zoning, the primary means of implementing these plans, identifies the specific types of land uses that may be allowed on a given site. Zoning also establishes the standards that will be imposed on new development.

Local approaches to zoning vary considerably throughout the region. In general, zoning requirements are more restrictive along the coast and least restrictive in unincorporated portions of the counties. The fiber optic cable system will be installed within existing road rights-of-way; in many cases it will be located alongside other utilities. Local permitting and approval requirements associated with trenching within existing roadway include road encroachment permits, grading permits, longitudinal permits, and street opening permits.

The two OP-AMP stations associated with the project may be subject to zoning requirements regarding setbacks, access requirements, height restrictions, color of building, building materials, and landscape of real estate. Williams is currently in the process of identifying local zoning and permit requirements and approvals. The location of the OP-AMP stations is consistent with local general plans.

Both the purposed, Lindenberger and Mesa Rock, OP-AMP sites are located in unincorporated Riverside and San Diego Counties, respectively. The Lindenberger OP-AMP site is located on Scott Road between Lindenberger Road and Audubon Drive and is in a rural section of the county classified as rural residential (RR) in the in the Riverside County general plan land use map. The site has previously been used for residential and agricultural uses and is currently vacant with no standing structures. The Mesa Rock OP-AMP site is located at the intersection of North Centre City Parkway and Mesa Rock Road and is classified RR-1 (rural residential -1 acre minimum) in the San Diego County general plan land map. There is incomplete information on prior use of the property and it is currently vacant with no standing structures.

Regulations, Approvals, and Permits Applicable to Land Use and Planning

Zoning regulations vary from jurisdiction-to-jurisdiction along the project route. In some jurisdictions, construction is permitted "by right" (i.e., without the need for hearing) as an allowable use under the zoning ordinance. In other jurisdictions, a conditional use permit or similar discretionary action is needed. Typically, discretionary actions require a public hearing on the project. At the hearing, the local zoning board or zoning administrator considers the proposed project, public testimony, and the findings of a CEQA review. If the use permit or discretionary action is approved, the project is subjected to conditions regarding its design, appearance, and construction. These conditions are imposed to make the project comply with local ordinance and environmental quality requirements.

X. MINERAL RESOURCES

Sand and gravel deposits are the minerals most likely to be found along the project route. Such deposits are typically found in streambeds and valley bottoms.

The project route has two OP-AMP sites. No mineral land classification mapping has been done for these sites or their surrounding areas. However, installation of conduit and cable and OP-AMP stations will be within existing, disturbed rights-of-way and will not impede mineral extraction. Therefore, mineral zone classifications of the project route and OP-AMP sites are irrelevant.

Regulations, Approvals, and Permits Applicable to Mineral Resources

Land use documents, including general plans, specific plans, and the CEQA environmental checklist, typically include policies that limit development of facilities in areas that contain mineral resources.

The California Surface Mining and Reclamation Act (SMARA) (Pub. Res. Code Section 2710 et seq.) establishes statewide mineral conservation policies that are implemented by counties and cities through local surface mining ordinances. The ordinances apply to surface mining operations and will not be applicable to the project. However, these policies discourage local governments from allowing new incompatible uses (essentially defined as permanent, urban uses) in areas identified by the state geologist as containing mineral resources that are either locally important or of statewide value.

The SMARA requires the state geologist to examine lands within California and classify them based on the availability of mineral deposits. The conduit and cable will be installed within existing rights-of-way, to a depth of 4 feet below grade, and will not involve mineral excavations. The lines will not obstruct the recovery of mineral deposits. The OP-AMP sites will not be constructed in areas of mineral extraction. Because the conduit and cable and the OP-AMP sites will not have any affect on mineral resources, the project will not require compliance with the SMARA.

XI. NOISE

The technical terms and acronyms used in this section may be unfamiliar to the reader. Explanations of these terms, acronyms (e.g., *dBA*, *Ldn*, and *Leq*), and background information on environmental acoustics and state and federal noise regulations are provided in **Appendix K**.

Residencies, such as private homes, hospitals, and rest homes, are typically considered to be sensitive to noise, as are libraries and educational facilities. Threatened and endangered wildlife species are also considered to be noise sensitive in some cases. The number and type of noise sensitive uses along the project routes will vary, depending on the degree of development in the area. In some areas, residences or other sensitive uses will be located within 100 feet of the project route. In other areas, the distance between the project route and the nearest noise-sensitive uses will be several thousand feet. However, because the project route is primarily located within existing rights-of-way, any sensitive receptors are often already exposed to noise sources (i.e., railroad and roads).

Background noise levels along the project route will also vary widely depending on the degree of development and general human activity in the area. For example, railroad and road rights-of-way will typically have greater background noise associated with trains and automobiles. Typical sources of noise include transportation (e.g., traffic, aircraft, train, watercraft), mechanical equipment (e.g., air conditioners, manufacturing equipment), and natural sources (e.g., wind, birds, crickets, frogs). Background sound levels typically range from 35 to 45 dBA in rural areas, 45 to 55 dBA in suburban areas, and 55 to 65 dBA in urban areas.

Regulations, Approvals, and Permits Applicable to Noise

California Government Code Section 65302(f) requires that city and county general plans include a noise element. The general plan noise element is used as a planning guideline to ensure that long-term noise generated by a source is compatible with adjacent land uses.

The California Department of Health Services (DHS) has studied the correlation of noise levels and their effects on various land uses and has published land use compatibility guidelines for the noise elements of local general plans (Office of Planning and Research 1990). The guidelines are the basis for most noise element land use compatibility guidelines in California. The DHS noise element guidelines identify the normally acceptable noise level range for several different land uses. Recommended maximum acceptable noise levels for various land uses are shown in **Table 4.XI-1**.

Table 4.XI-1. Maximum Allowable Ambient Noise Exposure for Various Land Uses

Land Use	Suggested Maximum Ldn
Residential - low density	60
Residential - high density	65
Transient lodging	65
Schools, libraries, churches, hospitals	70
Auditoriums	70
Playgrounds, parks	70
Commercial	70
Industrial	75

Source: Office of Planning and Research 1990.

As shown in **Table 4.XI-1**, low-density residential areas are most sensitive to noise intrusion with noise levels of 60 dBA Ldn or below considered acceptable. Acceptable noise levels are up to 70 Ldn for schools, libraries, churches, hospitals and parks, and up to 70 and 75 Ldn respectively for commercial and industrial land uses.

Cities and counties can also adopt noise control requirements as part of their zoning ordinances or as separate ordinances. Noise ordinances are enforcement mechanisms for controlling noise. The level of specificity in noise ordinances used in California cities and counties varies widely. Many are based on the model noise ordinance published by DHS, which recommends daytime and nighttime noise level limits of 40 and 50 dBA-L_{50} respectively for rural uses, 45 and 55 dBA-L_{50} respectively for suburban uses, and 50 and 60 dBA-L_{50} respectively for urban uses. Noise ordinances often contain exemptions for construction activities, provided the construction takes place during the hours specified by affected local jurisdictions.

Riverside and San Diego Counties and some cities located on the project route have adopted noise ordinances. These ordinances limit the absolute sound levels that can be generated by construction and other activity, or they restrict the times of day when such noise can occur.

XII. POPULATION AND HOUSING

Implementation of the project will not affect or generate additional population or affect or create the demand for new housing along the project route. Therefore, no discussion of the setting for population and housing is necessary.

XIII. PUBLIC SERVICES

Public services are typically provided to development projects by a variety of local purveyors (i.e., city, county, special district, water agency, school district). The services available vary depending on the level of development in the area. The project will not result in an increased demand for public services, such as police protection, schools, parks, or other public facilities, because project construction will be temporary and located within existing road rights-of-way. Any impact on fire protection services will be less than significant with incorporated mitigation. A fire prevention and management plan will be prepared as a precaution (**Appendix G**). Because public services will not be effected, no discussion of the public services setting is necessary.

XIV. RECREATION

Public recreation facilities are provided by cities, counties, and special districts. The types and uses of these recreation facilities vary greatly. The project is installation of a fiber optic cable system. The project will be located within road rights-of-way and will not cross any parks or land where recreational facilities exist. The project will not affect recreational opportunities in either of the two counties through which the project will be implemented; use of existing facilities will not increase and construction of additional facilities will not be necessary. Therefore, no further discussion of the recreation setting is necessary.

XV. TRANSPORTATION/TRAFFIC

Southern California is served by a well-developed network of freeways, highways, and surface streets, as well as mass transit facilities in the larger urban areas of the state, such as the Los Angeles metropolitan area, and the San Diego metropolitan area. The project route will pass through rural, suburban, and urban areas of both Riverside and San Diego Counties. In suburban and urban settings, development tends to directly abut surface streets. In rural areas, the rights-of-way adjacent to the road pavement are generally undeveloped.

The project route will follow a combination of state highways and local roads (**Table 4.XV-1**). State highways are under the jurisdiction of the California Department of Transportation (Caltrans), which controls the design, operation, and maintenance of these roadways. The local roadway system comprises roads that are under the jurisdiction of a particular city or county public works department. As described in Chapter 2, "Project Description", the installation of fiber optic cable will be accomplished primarily by trenching in existing road rights-of-way. The project route is summarized below in **Table 4.XV-1**.

Table 4.XV-1. Right-of-Way Miles for the Riverside to San Diego Project Route

	Right-of-Way Miles	
Route Segment	Local Roads	State Highways
Riverside County		
Terminus - Marlborough Avenue	0.3	
Iowa Avenue	2.0	
Martin Luther King Boulevard	0.5	
Canyon Crest Drive	3.1	
Alessandro Boulevard	0.7	
Trautwein Road	1.0	
John F. Kennedy Drive	0.4	
Wood Road	4.2	
Cajalco Road	2.5	
Clark Road	1.0	
Old Elsinore Road	2.6	
San Jacinto Avenue	1.0	
Navajo Road	1.0	
Fourth Street		0.5
A Street	0.5	
Eleventh Street	0.5	
Case Road	1.4	

Table 4.XV-1. Right-of-Way Miles for the Riverside to San Diego Project Route

Route Segment	Right-of-Way Miles	
	Local Roads	State Highways
Murrieta Road	8.4	
Scott Road	5.1	
Leon Road	3.0	
Winchester Road (SR 79)		5.8
Ynez Road	3.5	
La Paz Street	0.3	
SR 79		0.4
Pala Road	0.2	
Rainbow Canyon Road	3.2	
Subtotal	46.4	6.7
San Diego County		
SR 395		23
Del Dios Road	10	
Paseo Delicias	1.5	
Via De La Valle	4.0	
El Camino Real	4.5	
Carmel Mountain Road	0.6	
Sorrento Valley Road	2.7	
Mira Mesa Boulevard	0.5	
Scranton Road	0.3	
Carrol Canyon Road	3.5	
Miramar Road	2.5	
Black Mountain Road - **B Fiber**	3.3	
Kearney Villa Road	3.0	
Ruffin Road	0.8	
Claremont Mesa Boulevard	0.5	

Table 4.XV-1. Right-of-Way Miles for the Riverside to San Diego Project Route

	Right-of-Way Miles	
Route Segment	Local Roads	State Highways
Terminus - Complex Drive	0.1	
Subtotal	34.5	23
Total	80.9	29.7
GRAND TOTAL 110.6		

Regulations, Approvals, and Permits Applicable to Transportation/Traffic

Caltrans will require Williams to obtain an encroachment permit to perform construction activities within the state highway rights-of-way along the project route. In addition, the affected local agencies may require local encroachment permits, street opening permits, longitudinal permits, or grading permits for activities within public road rights-of-way. Permit requirements vary by agency. The implementation of specific transportation and traffic safety and control measures may be required as conditions under the permits. **Table 4.XV-1** summarizes the types of permits and jurisdictional safety and control measures applicable to construction within the road rights-of-way along this route.

XVI. UTILITIES AND SERVICE SYSTEMS

Utilities are typically provided to development projects by a variety of local purveyors (e.g., city, county, special district, water agency, or school district). The services available vary depending on the level of development in the area. This project will not exceed wastewater treatment requirements of the RWQCB, require expansion of existing wastewater treatment facilities, or require construction of additional facilities. The project will not require the expansion of existing stormwater drainage facilities or the construction of additional facilities. The project will not require the use of any water, so it will not affect water resources. The project will not have an impact on landfill services. The project will comply with any applicable federal, state, and local statutes that pertain to solid waste. The project will require electrical power for the two OP-AMP stations. Because of the lack of utilities and services required by the project, no further discussion of the utilities and service systems setting is necessary.

"Dig Alert", "One-Call", or a similar underground utility contractor will be contacted to determine the locations of subsurface utilities before construction. All railroad companies will be notified of construction activities prior to construction. In areas where construction will occur along railroads, specific training may be required by railroad companies before any activities can occur within the respective rights-of-way. Such training will be completed as necessary.