

4.0 CULTURAL RESOURCES

Cultural resources at the river crossings and on private property easements for fiber optic cable project are described in the following sub-sections. Data presented below are based on a review of pertinent literature, including a formal record search, and field surveys of all areas of potential surface disturbance. The river crossings were surveyed on 30 April 1990 by Ms. Lori Lilburn, archaeologist for Dames & Moore. Private property easements were surveyed on 16 July 1990 by Mr. Michael Kelly, senior archaeologist for Dames & Moore. A US Sprint engineer was present to locate the river crossing impact areas on the April field survey. The objective of the field surveys was to identify any potentially sensitive cultural resources that could be affected by the proposed project.

4.1 RECORDS SEARCH

A record search was conducted for a half-mile radius around the entire proposed cable route from Stockton to Walnut Creek. The search was conducted to identify any known archaeological, historic, or ethnographic resources at or near the project area records at the Northwest Information Center (Sonoma State University) was reviewed by Ms. Lilburn in April 1990, and records at the Central Information Center (Stanislaus State University) was reviewed also by Ms. Lilburn in May 1990. These record searches indicated that: (1) no previous archaeological survey had been conducted in the project area; and (2) no previously recorded cultural resources occur within the project area.

4.2 RESULTS OF FIELD SURVEYS

Field surveys were conducted to determine the presence of unrecorded cultural resources. Because the project area consists of reclaimed land bounded by a levee, archaeological sensitivity was determined to be low. A windshield reconnaissance, together with a series of spot checks conducted at irregular intervals, was employed to investigate private property easements. Systematic transects were conducted over the area of potential disturbance at each river crossing bore location.

Surface visibility was very good due to the disturbed nature of the project area. Rodent back dirt was examined at all sites. No evidence of cultural resources greater than 40 years in age were identified at private property easements and at river crossing bore locations.

4.3 RECOMMENDATIONS

Due to the absence of any evidence of cultural resources along the proposed route, it is apparent that cable installation will have no effect on archaeological or historic sites. No further cultural resource investigations along this portion of the route are recommended. If archaeological remains are encountered on during construction, they should be recorded in the field by a qualified archaeologist and the State Lands should be contacted.

5.0. REFERENCES

- California Department of Fish and Game (CDFG), 1989. Designated endangered, threatened and rare plants of California. Nongame-Heritage Program, Endangered Plant Project, Sacramento, California. January.
- CDFG, 1990. List of state and federal endangered and threatened animals of California. Revised January.
- Dames & Moore, 1989. Biological investigation, recycled newsprint plant, Port of Sacramento, Yolo County. December.
- Mason, H.L., 1975. A flora of the marshes of California. University of California Press, Berkeley and Los Angeles, California.
- Munz, P. A. and D.D. Keck, 1960. A Flora of California. University of California Press, Berkeley and Los Angeles, California.
- Remsen, J.V., 1978. Bird species of special concern in California: an annotated list of declining or vulnerable bird species. California Department of Fish and Game, Wildlife Management Branch, Administrative Report 78-1.
- Smith, J.P., Jr. and K. Berg, 1988. Inventory of rare and endangered vascular plants of California. California Native Plant Society Special Publication No. 1 (4th Edition).
- United States Fish and Wildlife Service (USFWS), 1989a. Endangered and threatened wildlife and plants. 50 CFR 17.11 & 17.12. March.
- USFWS, 1989b. Endangered and threatened wildlife and plants; Review of vertebrate wildlife; notice of review. Federal Register 55: 554-579 No. 4. 6 January.
- USFWS, 1990. Endangered and threatened wildlife and plants; Review of plant taxa for listing as endangered or threatened species; notice of review. Federal Register 55:6184-6229 No. 35. 21 February.
- Williams, D.F., 1986. Mammalian species of special concern in California. California Department of Fish and Game, Wildlife Management Division, Administrative Report 86-1. June.

LITERATURE REVIEW
OF SENSITIVE BIOLOGICAL RESOURCES
US SPRINT FIBER OPTIC CABLE
OAKLAND TO STOCKTON, CALIFORNIA

3 OCTOBER 1990
DAMES & MOORE JOB NO. 14865-007-01
GOLETA, CALIFORNIA



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October 3, 1990

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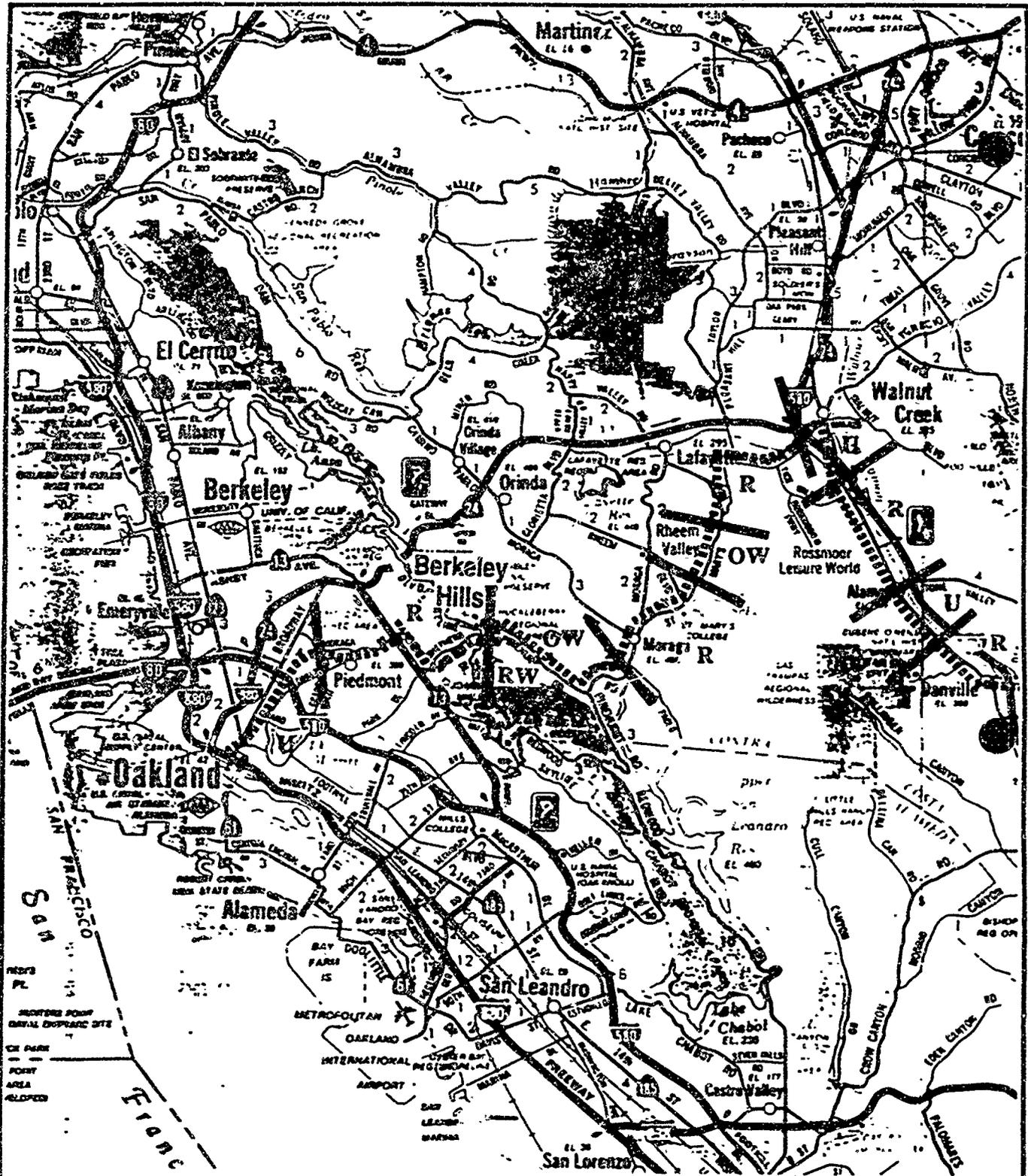
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1.0 INTRODUCTION

US Sprint has proposed to construct a fiber optic cable between Oakland and Stockton. The cable will be buried within existing dirt or paved road beds or shoulders for its entire length, except at stream or river crossings where it will either be attached to a bridge in a conduit, or will be placed under the watercourse using a directional boring procedure. Three rivers will be bored along the route: Old, Middle, and San Joaquin rivers (Figure 1). Two regeneration stations will be constructed along the route (see Figure 1 for the location of these stations).

The above three rivers are under the jurisdiction of the State Land Commission (SLC). US Sprint has applied for a right-of-way grant from SLC at these crossings. During the review of the application, SLC has requested additional information from US Sprint in order to conduct a CEQA review of the entire project. This report provides an overview of sensitive biological resources along the entire route from Oakland to Stockton.

Site specific information on biological resources on the above three river crossings was provided previously to SLC in the regional application by US Sprint. Additional site-specific information was provided on a 2-mile-long portion of the route west of Stockton where the cable would be installed on private property rather than in a public roadway. Results of the field investigations along that portion of the route was provided to SLC in a report dated August 1, 1990.



- Ag = Agriculture
- G = Grassland/Pasture
- OW = Oak Woodland
- R = Residential
- RW = Redwoods
- U = Urban

Note: The cable will be installed in the road bed or shoulder for the entire length, except at the three crossings where it will be bored.

FIGURE 1A

**Location of US Sprint
Oakland-to-Stockton
Fiber Optic Cable Project**

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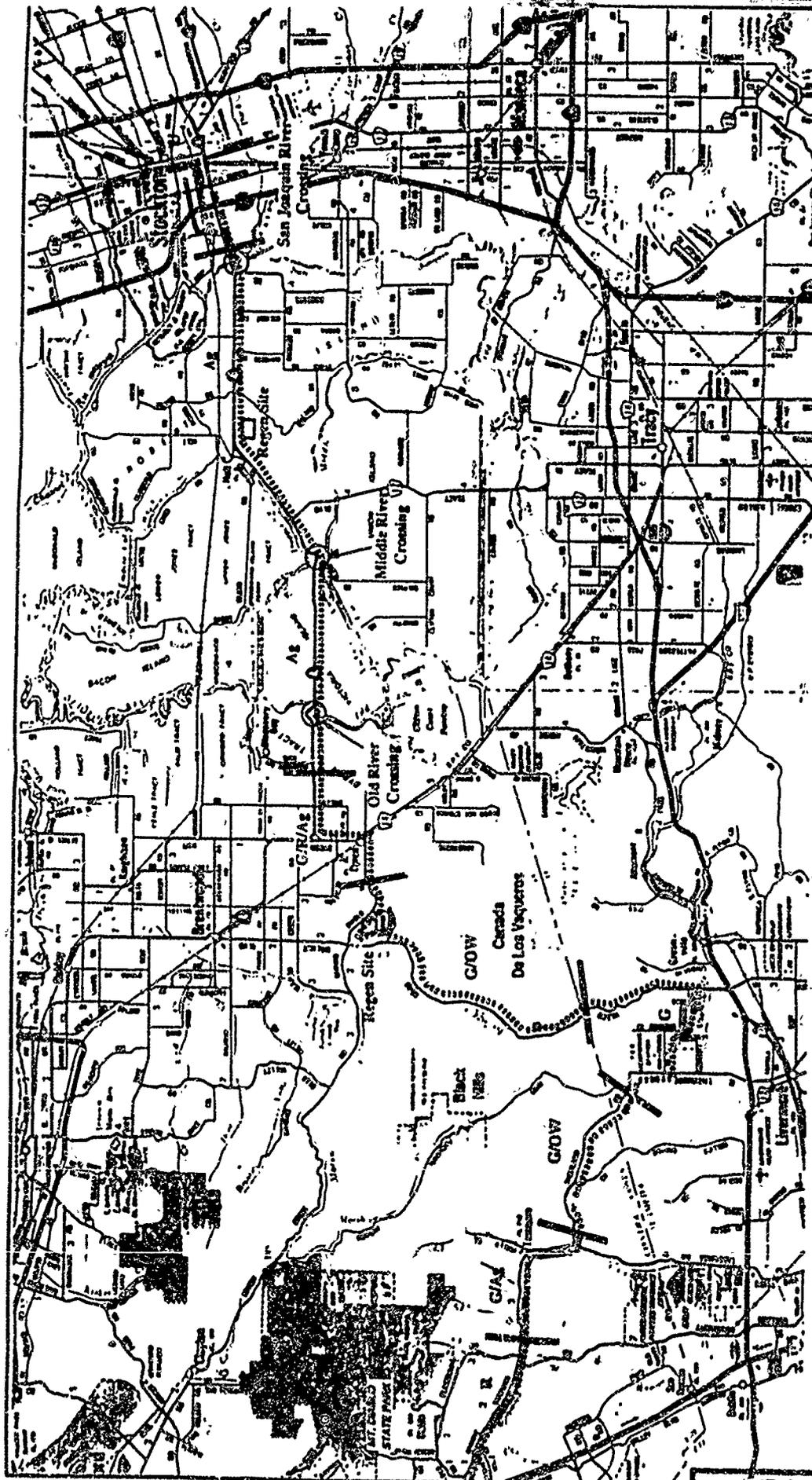


FIGURE 02
**Location of US Sprint
 Oakland-to-Stockton
 Fiber Optic Cable Project**
 SOURCE: S. H. MOORE

- AS = Agriculture
- G = Gas/Steam/Petroleum
- OW = Overhead
- R = Residential
- RW = Railroad
- U = Urban

Note: The cable will be installed in the road (not in trenches) for the same length, except in the three crossings where it will be buried.

2.0 ENVIRONMENTAL SETTING

The proposed fiber optic cable route is located along existing roads. The entire route, from Oakland to Stockton is about 45 miles long. The roads vary from urban expressways to narrow rural roads. Vehicular traffic is high, especially during commuting hours. The shoulders where the cable will be buried typically consist of gravel or dirt that is highly disturbed. These areas generally contain compacted fill.

The route traverses a wide variety of land use types, landforms and topographic features. A brief description of the environmental setting of the major segments of the route is provided below. Major land use types adjacent to the route are shown on Figure 1. Most of the route traverses privately owned land.

Oakland Segment

This portion of the route occurs along city streets and is adjacent to various urban and residential uses. There is no natural vegetation adjacent to the route between the western end and Highway 13. The topography is flat west of Piedmont, gradually ascending in elevation from sea level to about 100 feet. East of Piedmont, the route traverses the lower Berkeley Hills, which have steep winding roads with residential land uses. Oak woodland vegetation occurs between many of the lots. Elevations range from 100 feet in Piedmont to 1200 feet at the Alameda/Contra Costa County line.

Berkeley Hills Segment

The route continues from the county line, on narrow, winding roads through the Berkeley Hills on towards Moraga. The terrain is mountainous, gradually descending in elevation to 500 feet in Moraga Valley. Most of the route is undeveloped, and passes through Huckleberry Regional Preserve, where there are dense groves of redwood trees adjacent to the road. Oak woodland and riparian woodland vegetation also occur adjacent to the road.

Moraga to Lafayette Segment

The route winds down the east face of the Berkeley Hills into Moraga and Rheem Valleys, gradually descending in elevation to 200 in Lafayette. The terrain consists of gently rolling terraces, scattered with residential developments and natural land. Natural vegetation adjacent to the route includes oak woodland, grassland and riparian at a few of the stream crossings.

Walnut Creek - Danville Segment

The route occurs along heavily used city streets within highly developed residential and urban areas. Elevations range from 140 feet in Walnut Creek to 400 feet in Danville (San Ramon Valley). There is no natural land adjacent to the route in this segment.

Tassajara Segment

From Danville to Byron, the route follows narrow rural roads over gently rolling hills. Elevations range from 800 feet near Highland Road to 300 feet along Kellogg Creek. Most of this segment contains extensive grassland/pasture with scattered agricultural fields, orchards, and suburban and rural residential developments. Planted ornamental trees and native oak trees often line the roadway. Scattered oak trees occur along the hills, becoming oak woodlands in canyons and on some north-facing slopes. Riparian vegetation occurs in some of the streams crossed by the route, and in Kellogg Creek, which is located parallel to Vasco Road.

Delta Segment

The route in this segment occurs along existing roads within an intensively developed agricultural area that is flat. The elevation at the community of Byron is 40 feet, and down to sea level along Highway 4. Scattered residences occur along the route. Freshwater marsh habitat occurs in many of the larger canals in the vicinity, particularly north of Highway 4. Riparian woodland and freshwater marsh vegetation line the banks of the three rivers, but not adjacent to the road. The banks are lined with rip-rap boulders underneath the bridges and adjacent to the road.

Stockton Segment

The route in Stockton traverses heavily used urban and residential areas, over relatively flat, near sea level terrain. There is no natural land adjacent to the route in this segment.

3.0 METHODOLOGY

3.1 PREVIOUS STUDIES

A biological and cultural resource survey was conducted on April 30, 1990, at the three river crossings (Old, Middle, and San Joaquin rivers)(see Figure 1). Because the cable will be installed off the road at these crossings, an environmental field investigation was conducted. The objective of the survey was to identify any potentially sensitive biological or cultural resources that could be affected by the bore operations. The results of the survey were provided to SLC in the original US Sprint application. These results indicated that no wetlands, aquatic habitat, cultural resources, or endangered species would be adversely affected by installation of the cable at these crossings.

An additional biological and cultural resource survey was conducted on July 16, 1990 along a 2-mile portion of the route, west of Stockton, that traverses private property rather than a state highway right-of-way, as with the remainder of the route. This survey was conducted to identify any potentially sensitive biological and cultural resources that could be affected by the proposed project. Based on the results of this study (Dames & Moore, 1990d), there would be no significant impacts to cultural or biological resources.

Land uses and natural habitats adjacent to the route were also surveyed in July along the entire route from Oakland to Sacramento. The objectives of this survey were to characterize major land uses adjacent to the route.

3.2 CURRENT STUDY

This investigation of potential occurrences of sensitive biological resources along the route is based upon a review of pertinent literature on the biological resources of the area. Field investigations were not conducted for this study because the installation of the cable will not require vehicular travel or disturbance off of the existing roads.

The delta portion of the route was evaluated during the above referenced biological surveys. This included a review of the following resources: (1) records of sensitive biological resources in the area, compiled by the California Natural Diversity Data Base (CNDDDB, 1990a); (2) the California Native Plant Society's inventory of rare and endangered vascular plants of California (Smith and Berg, 1988); and (3) previous environmental documents (Dames & Moore, 1990a,b).

Investigations along the remainder of the route included a review of: (1) records of sensitive biological resources in the area, compiled by the California Natural Diversity Data Base (CNDDDB, 1990b); (2) plant sensitivity and distribution data in the California Native Plant Society's inventory of rare and endangered vascular plants of California (Smith and Berg, 1988);

(3) plant phenology information in Munz and Keck (1968); (4) wildlife sensitivity data in Jennings (1983), Remsen (1978) Williams (1986); (5) updated plant and wildlife status information (California Department of Fish and Game [CDFG], 1989, 1990a; United States Fish and Wildlife Service [USFWS], 1989, 1990a, 1990b); and (6) miscellaneous information of sensitive biological resources in the area in previous environmental documents (Dames & Moore, 1990a,b,c; CDFG, 1987a,b, 1990b; EIP, 1989; Lenihan and DiDonato, 1987; Taylor and Davilla, 1986; Hafernack, 1990).

3.3 APPLICABLE REGULATIONS

Sensitive plant and wildlife species consist of state and federally listed species, candidates for listing, species proposed for listing, species of special concern, and special animals. Listed species include those recognized by the federal government as threatened or endangered (USFWS, 1990a), and /or by the state government as rare, threatened or endangered (CDFG, 1989, 1990a). Federal candidates include taxa which are currently under consideration for federal listing as threatened or endangered (USFWS, 1989, 1990b).

Plant species of special concern include those listed by the CNPS (Smith and Berg, 1988). Plants on the CNPS List 1B are considered rare and endangered in California. Those on the remaining CNPS lists do not have the same degree of rarity and vulnerability. These lists include: List 2 (plants rare in California, but common elsewhere), List 3 (plants about which more information is needed), and List 4 (plants of limited distribution - a watch list). Plants on List 4 that occur in Alameda, Contra Costa, and San Joaquin counties were not included in this study because they were assessed as not potentially occurring adjacent to the cable route, based upon the literature review.

Wildlife species of special concern are taxa included on lists of regionally declining wildlife. Lists of reptiles, amphibians, birds and mammals of concern in California have been developed for the CDFG by Jennings (1983), Remsen (1978) and Williams (1986).

Special animals includes all vertebrate and invertebrate taxa of concern to the CNDDB (1990c), regardless of their legal or protection status. This list includes federal and state listed and candidate species, species of special concern, and species designated as "sensitive species" by the BLM or USFWS. Also included are species not protected by the USFWS, CDFG, or BLM, but which are considered biologically rare or threatened by the CNDDB.

4.0 SENSITIVE BIOLOGICAL RESOURCES IN THE REGION

Several sensitive wildlife, plants, and plant communities are known from the region of the cable route, from Oakland to Stockton. The study area consisted of the length of the route and all land adjacent to both sides of the road. It also included wildlife that could potentially travel to the route. Habitat types which occur adjacent to the route were determined during the land use survey. The sensitive resources in the study area are summarized on Table 1 for wildlife, Table 2 for plants and Table 3 for plant communities, and described below.

4.1 WILDLIFE HABITAT AND SPECIES

Two mammals, twelve birds, three reptiles, two amphibians, six insects and two invertebrates are considered sensitive and declining in the region (Table 1). Those species which are known to occur adjacent to the route, or could potentially travel to the study area are described below.

4.1.1 Listed Species

Eight of the sensitive wildlife species are listed by state and/or federal governments. Seven of these species have the potential to occur in the study area, and include San Joaquin kit fox, California black rail, Swainson's hawk, bald eagle, Alameda whipsnake, giant garter snake, and Valley elderberry longhorn beetle.

San Joaquin kit fox

The San Joaquin kit fox (Vulpes macrotis mutica) occurs in valley sink scrub, valley saltbush scrub, and non-native grasslands in the San Joaquin Valley. However, it can occur in highly disturbed areas including oilfields and other developments located within these vegetation types. A single kit fox was observed near the Lawrence Livermore site, about four miles west of the route (CNDDDB, 1990b). There have also been reported sightings of kit fox around Fenestra Winery, in the southwestern Livermore area, many miles south of the route (EIP, 1989). The San Joaquin kit fox may den in lower slopes and hunt and range over the entire area east of the Berkeley Hills.

California black rail

The California black rail (Laterallus jamaicensis coturniculus) is a federal candidate, Category 2 taxon and a listed threatened bird by the State of California. The nearest recorded occurrence of this bird was about 3 miles north of the route, in the freshwater marshes of Middle River (CNDDDB, 1990a). It is also known many miles south of the study area, near the community of Niles (Dames & Moore, 1990c). The habitat occupied by the California black rail is pickleweed dominated saltmarsh. No suitable habitat exists for this taxon adjacent to the roads, but does exist within the study area in the southern delta area.

TABLE 1

**WILDLIFE SPECIES POTENTIALLY OCCURRING ADJACENT TO
THE US SPRINT FIBER OPTIC CABLE ROUTE FROM OAKLAND TO STOCKTON**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Status: Fed/State/Other</u>	<u>Habitat Affinity Information</u>	<u>Local Distribution</u>
MAMMALS:				
<u><i>Vulpes macrotis</i></u> <u><i>putica</i></u>	San Joaquin kit fox	FE/ST/SA	saltbush scrub	4 miles west of route; Livermore area
<u><i>Dipodomys heermanni</i></u> <u><i>berkeleyensis</i></u>	Berkeley kangaroo rat	-/SA	grassland	4 miles north of route; Berkeley Hills
BIRDS:				
<u><i>Haliaeetus</i></u> <u><i>leucorhaphus</i></u>	southern bald eagle	FE/SE/SA	nests in tall trees; aquatic habitats	many miles southwest of route; southwest Livermore; rare winter migrant in the region
<u><i>Laticollisus jamaicensis</i></u> <u><i>columnatus</i></u>	California black rail	C1/ST/SA	mudflats; freshwater and salt marshes	4 miles west of route; Livermore area (nesting colony)
<u><i>Buteo swainsonii</i></u>	Swainson's hawk	C3e/ST/SA	various; tall trees next to open grassland or fields	1-3 miles southwest of east end of route; southwestern Stockton area
<u><i>Agelaius tricolor</i></u>	tricolored blackbird	C2/-SA	freshwater marsh; slow moving water	several miles south of route; San Joaquin River
<u><i>Accipiter cooperi</i></u>	Couper's hawk	-/SSC, SA	breeds in riparian and oak forests adjacent to water	many miles south of route; occurs in the region

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TABLE 1 (continued)

<u>Scientific Name</u>	<u>Common Name</u>	<u>Status/ Fed/State/Other</u>	<u>Habitat Affinity Information</u>	<u>Local Distribution</u>
<u>Accipiter gentilis</u>	northern goshawk	-/SSC,SA	various	not known from the region; uncommon winter migrant
<u>Accipiter striatus</u>	sharp-shinned hawk	-/SSC,SA	grassland; open fields	several miles south of route; southern Livermore
<u>Accipiter cooperii</u>	golden eagle	-/SSC,SA	various; rolling foothills of the Coast Range	many miles south of route; southwest Livermore; un- common resident and migrant in the region
<u>Buteo borealis</u>	ferruginous hawk	-/SSC,SA	grassland	not known from the region; uncommon winter migrant
<u>Circus cyaneus</u>	northern harrier	-/SSC, SA	riparian woodland	migrant and winter resident in the region
<u>Aluco gularis</u>	burrowing owl	-/SSC, SA	open fields	adjacent to route; northeast Livermore area (burrowing sites)
<u>Falco mexicanus</u>	prairie falcon	-/SSC, SA	grassland; fields	1.5 miles east of Vasco Road; Brushing Peak; uncommon resident in the region (breeding sites)

TABLE 1 (continued)

<u>Scientific Name</u>	<u>Common Name</u>	<u>Status' Fed/State/Other</u>	<u>Habitat Affinity Information</u>	<u>Local Distribution</u>
REPTILES:				
<u>Masticophis lateralis</u> <u>surzeanicus</u>	Alameda whipsnake	C2/ST/SA	various inner coast range plant communities, especially chaparral	adjacent to route; 3 miles west of Alamo
<u>Thamnophis couchii</u> <u>sierrae</u>	giant garter snake	C2/ST/SA	freshwater marsh; slow moving water; even irrigation canals	3 to 4 miles northeast of route; Stockton
<u>Clemmys marmorata</u> <u>marmorata</u>	northwestern pond turtle	C3e/ISSC, SA	ponded water	not known from the study area; occurs in the region
AMPHIBIANS:				
<u>Ambystoma tigrinum</u> <u>californense</u>	California tiger salamander	C2/ISSC, SA	grassland; breeds in temporary rain pools	adjacent to route, Vasco Road area
<u>Rana aurora</u> <u>draytoni</u>	California red-legged frog	C2/ISSC, SA	ponded water	less than 1 mile northwest of route; Berkeley Hills
INSECTS:				
<u>Democerus californicus</u> <u>dimorphus</u>	Valley elderberry longhorn beetle	FT/SA	elderberry trees	several miles south of route; Middle River
<u>Euphydryas edithae</u> <u>lavensis</u>	bay checkerspot butterfly	FT/SA	grassland	2 miles southeast of route, Berkeley Hills
<u>Hydrophilum rickheckeri</u>	Rickhecker's water scavenger beetle	C2/SA	creeks; vernal pools; ponded water	occurs in San Francisco Bay area

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TABLE 1 (continued)

Scientific Name	Common Name	Status' Fed/State/Other	Habitat Affinity Information	Local Distribution
<i>Hydrobia curvipes</i>	curve-footed hygrotus diving beetle	C2/-SA	slow streams and creeks; seeps; ponded water	known only from a pond in Oakley, many miles north of route
<i>Lebanus stanina</i>	San Francisco forktail damselfly	C2/-SA	freshwater marsh; open water	known from wetlands fringing the Bay Area.
<i>Lebia modesta</i>	molestan blister beetle	C2/-SA	grassland	3 to 4 miles northwest of route, Brentwood area
INVERTEBRATES: <i>Helminthobrya nickliniana bickleri</i>	none	C2/-SA	grassland; ruderal; rock piles	east Oakland area, several miles north of route
<i>Haplocrema duranti</i>	Duranti snail	-/SA	oak woodlands; riparian woodland	adjacent to route; Lafayette and Moraga

1 Status:

Federal (USFWS, 1989, 1990a, 1990b)

- FE = Federally listed, endangered
- FT = Federally listed, threatened
- C1 = Enough data are on file to support federal listing
- C2 = Threat and/or distribution data are insufficient to support federal listing
- C3c = Too widespread and/or not threatened

State of California (CDFG, 1989; 1990a)

- SE = State listed, endangered
- ST = State listed, threatened

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TABLE 1 (concluded)

Other: SSC = California Department of Fish and Game "Species of Special Concern"
 SA = (Jennings, 1983; Rensen, 1978; Williams, 1986)
 Species not protected by USFWS, CDFG or BLM, but considered sensitive by the California Natural
 Diversity Data Base and on their list of "Special Animals" (CNDDB, 1990c)

* Based upon computer search and map overlays compiled by the California Natural Diversity Data Base (CNDDB, 1990a,b)

* Possibly extirpated in the region - based upon CNDDB

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Swainson's hawk

The Swainson's hawk (Buteo swainsonii) nests in the San Joaquin Valley, primarily from Merced County and north. Nesting by this species has been recorded from the southern delta area and west of Stockton. The nearest reported sighting of Swainson's hawk is in the vicinity of San Joaquin River and French Camp Slough, just south of Highway 4 (CNDDB, 1990a). In the San Joaquin Valley, Swainson's hawk nests primarily in valley oak and cottonwood trees, usually within one mile of riparian zones (Bloom, 1979). This species may nest in tall trees adjacent to Highway 4 and forage over nearby open areas.

Bald eagle

The bald eagle (Haliaeetus leucocephalus) is formally listed as endangered by the federal government (USFWS) as well as the State of California. It is a widespread, but uncommon migrant over much of California and is known to forage over large, open bodies of water. It has been observed many miles south of the study area in 1986 and 1987 (Lenihan and DiDonato, 1987). Reservoir sites in the region (such as San Leandro Reservoir) provide good foraging habitat for the bald eagle. Bald eagle use would be confined to migration over the study area to appropriate foraging habitat.

Alameda whipsnake

The Alameda whipsnake (Masticophis lateralis euryxanthus) is a federal candidate, Category 2 taxon and listed as threatened by the State of California. There are several records of the snake in the study area, particularly in the Berkeley Hills (CNDDB, 1990b). The species typically occupies chaparral habitats and has recognized affinities to foothill areas, but also occurs within the lower reaches of mountain ranges in mixed woodlands and pine forests (Stebbins, 1985).

Giant garter snake

The giant garter snake (Thamnophis couchii gigas) is primarily associated with freshwater marsh and low gradient stream habitats (CDFG, 1987a). Periodic inundation of habitat areas is necessary to provide forage fish. However, temporary water such as drainage canals and irrigation ditches also represent habitat for this aquatic snake, albeit of relatively low quality. This species was observed in 1976 in the Stockton Diverting Canal, several miles east of the study area (CNDDB, 1990b). Although it is not known from the study area, it may occur in low numbers (if at all) in some of the irrigation ditches in the area.

Bay checkerspot butterfly

The bay checkerspot (Euphydryas editha bayensis) is a federally threatened species. Larvae feed on Plantago erecta in the early spring and Orthocarpus in late spring, in grassland habitats. Its historic range included the Berkeley Hills and Black Hills, but has become

extirpated from all known sites in both Alameda and Contra Cost counties. Its current range is the West and South Bay Area, at Stanford and Morgan Hill.

Valley elderberry longhorn beetle

The valley elderberry longhorn beetle (Desmocerus californicus dimorphus) is known from the Central Valley. This beetle only occurs on elderberry (Sambucus mexicana) trees. Although it has not been recorded from the region, it may occur on elderberry plants in the study area.

4.1.2 Federal Candidate Species

Federal candidates for listing which have the potential to occur in the study area include tricolored blackbird, California tiger salamander, red-legged frog, San Francisco forktail damselfly, Ricksecker's water scavenger beetle, curve-footed hygrotus diving beetle, molestan blister beetle and Helminthoglypta nickliniana bridgesi.

Tricolored blackbird

The tricolored blackbird (Agelaius tricolor) is a candidate, Category 2 taxon. It breeds in extensive freshwater marsh habitats and/or moist habitats occupied by non-native weedy plants (such as thistles and mustards) (CNDDDB, 1990a). Two documented occurrences are known from the Livermore Valley, several miles south of the study area (Dames & Moore, 1990c). It is also known from the southern delta area, several miles from the route (CNDDDB, 1990a).

California tiger salamander

The California tiger salamander (Ambystoma tigrinum californiense) is a federal candidate, Category 2 taxon (USFWS), and a Species of Special Concern in California. There are several records of California tiger salamanders in the study area (CNDDDB, 1990b). They have been observed in the northern Livermore area, in the vicinity of Vasco and Raymond roads in 1970. They have also been observed adjacent to the route in the Canada De Los Vaqueros area, off Vasco Road and in Kellogg Creek. The current known range of the California tiger salamander is limited to foothill habitats on the east and western sides of the Central Valley. The taxon is presumably found wherever there are vernal pools and/or slow-moving streams that dry significantly during summer months. Quiet pools are required for breeding. Adult salamanders leave underground burrows (generally ground squirrel or gopher burrows), migrate overland to ponds and streams to lay their eggs.

California red-legged frog

The California red-legged frog (Rana aurora draytoni) has been documented near the study area at the western base of the Berkeley Hills (CNDDDB, 1990b) and several miles south of the study area in the vicinity of the proposed Los Vaqueros Reservoir and in southeastern Livermore (Dames & Moore, 1990c). The red-legged frog occurs in shallow ponds and sluggish streams and may occur in the study area.

San Francisco forktail damselfly

The San Francisco forktail damselfly (Ischnura gemina) is associated with small seepages, shallow ponds and sluggish streams in the San Francisco Bay Area. Populations are distributed from northwestern portions of Marin County south to the vicinity of San Jose. Most extant populations are known from wetland sites fringing the San Francisco Bay. Some new populations have been discovered in recent years, but the extinction rate of known populations is apparently high, and many sites are threatened by pollution, development and wetland alterations (Hafernack, 1990). Potential habitat may exist in the western end of the route, near Alameda.

Ricksecker's water scavenger beetle

The historic distribution of Ricksecker's water scavenger beetle (Hydrochara rickseckeri) includes five populations in Alameda, San Mateo, Marin and Sonoma counties, although no known extant populations exist today. Little is known of the specific habitat requirements of this taxon, thus it is difficult to accurately predict the occurrence of suitable habitat in the study area (Hafernack, 1990).

Curved-foot hygrotus diving beetle

The curved-footed hygrotus diving beetle (Hygrotus curvipes) is a very rare beetle, known from only two sites within Alameda and Contra Costa counties. Its current known range is between Oakley and Altamont Pass. Typically, the species occupies small mineralized ponds, alkali vernal pools, and intermittent streams, although a few adults have been collected from agricultural canals and flowing streams. All known sites supporting this invertebrate are threatened by housing and reservoir development and/or pollution and filling of its habitat (Hafernack, 1990).

Molestan blister beetle

Several species of blister beetles were once widely distributed in the southern Central Valley of California. Adult Molestan blister beetles (Lytta molesta) have been collected from lupine, stork's bill filaree and clover plants (Hafernack, 1990). The range of molestan blister beetle is now highly restricted due to conversion of most of their historical habitat to agricultural fields. Its current distribution is in the Central Valley from Contra Costa County to Kern and Tulare counties (CNDDDB, 1990b). The only recorded occurrence of this beetle in the region is about three miles northwest of the route, in Brentwood.

Helminthoglypta nickliniana bridgesi

This snail is known from Perkins Canyon, on the east slope of Mt. Diablo and also from the Berkeley Hills area. Both occurrences are several miles north of the route. It occurs in rock piles, but may also be found in colonies under grass and weeds on open hillsides (CNDDDB, 1990b).

4.1.3 Other Sensitive Species

The remaining sensitive wildlife in the region are considered species of special concern and/or are included on the CNDDDB's list of special animals. Those species with the potential to occur in the study area are described below.

Berkeley kangaroo rat

The Berkeley kangaroo rat (Dipodomys heermanni berkeleyensis) has been recorded from the Berkeley Hills area, about four miles north of the route (CNDDDB, 1990b). It is also known from Mt. Diablo and the Livermore Valley and its range is throughout the mountain ranges east of San Francisco to west of the San Joaquin Valley (Williams, 1986). Its habitat consists of grassland and open spaces in chaparral and even backdune scrub vegetation.

Golden eagle

Golden eagles (Aquila chrysaetos) were observed in the southwestern Livermore area in 1990, many miles away from the study area (Dames & Moore, 1990c). The golden eagle is a known resident raptor of the Livermore vicinity. Nest sites have been monitored in recent years and confirmed breeding success has been documented (Lenihan and Didonato, 1987). Areas within the study area may provide important foraging and roosting habitat.

Northern harrier

Northern harrier (Circus cyaneus) has not been recorded from the study area. It is considered a likely migrant through the lands along the route, however it is not considered a resident in the vicinity (Lenihan and Didonato, 1987). The northern harrier nests on the ground and may utilize adjacent lands as foraging habitats during migration.

Sharp-shinned hawk and Cooper's hawk

Both raptors (Accipiter cooperi and A. striatus) are scattered throughout much of California, and both are considered residents of the Livermore vicinity (Dames & Moore, 1990c; EIP, 1989; Lenihan and Didonato, 1987). These birds nest in tall trees adjacent to wetlands. Foraging usually occurs over open woodlands, grasslands, and riparian corridors.

Prairie falcon

The prairie falcon (Falco mexicanus) has been documented as an uncommon resident many miles south of the route (Lenihan and Didonato, 1987). A successful breeding pair of prairie falcons has been documented about 1.5 miles east of Vasco Road, at Brushing Peak (CNDDDB, 1990b). These falcons forage over open grassland areas, and may use lands within the study area to obtain prey. Although an uncommon bird, this falcon is considered a likely resident of the vicinity.

Burrowing owl

There are many records of burrowing owls (Athene cuniculara) adjacent to the route (CNDDDB, 1990b). Several sightings of owls or their burrows have been recorded along Diagnino Road (at Raymond Road) and south of Byron Hot Springs. The burrowing owl typically occurs in grassland habitats and commonly nests in man made banks and rodent burrows. California ground squirrel colonies provide high quality nesting habitats.

Durants snail

Durants snail (Haplotrema duranti) has been observed in drainages adjacent to the route, in Moraga and Lafayette (CNDDDB, 1990b). Its habitat is dense oak and riparian woodlands, under moist leaves and in rock piles.

4.2 PLANT SPECIES

Eighteen plant species are considered sensitive and declining in the region (Table 2). Those species which are known to occur adjacent to the route, or for which habitat may occur within the study area, are described below.

4.2.1 Listed Species

Five of the sensitive plant species are listed by state and/or federal governments. Four of these species have the potential to occur in the study area, and include: Ferris' bird's-beak, large-flowered fiddleneck, Alameda manzanita, and Mason's lilaeopsis.

Ferris' bird's-beak

This bird's-beak (Cordylanthus palmatus) is listed as an endangered species by the state and federal government. In addition, it is recognized as a rare and endangered taxon in California and elsewhere (CNPS 1B). This plant occupies alkaline grassland, valley sink scrub and vernal pool. An extant population occurs less than 0.25 miles south of the route, at the junction of Vasco and Raymond roads (CNDDDB, 1990b).

Large-flowered fiddleneck

This fiddleneck (Amsinckia grandiflora) is listed as an endangered species by the federal and state government. In addition it is recognized by the CNPS as a species that is rare or endangered in California and elsewhere (CNPS 1B). The historic range of this taxon included populations scattered through three counties, Alameda, Contra Costa and San Joaquin. The single remaining known extant population occurs on properties owned by the Lawrence Livermore Nuclear Laboratory. Its habitat is grassland and oak savannah vegetation below 1200 feet, and could potentially occur in the vicinity of Canada de los Vaqueros in the study area.

TABLE 2

SENSITIVE PLANT SPECIES KNOWN FROM THE REGION OF
TO THE US SPRINT FIBER OPTIC CABLE ROUTE FROM OAKLAND TO STOCKTON

<u>Scientific Name</u>	<u>Common Name</u>	<u>Status/ Fed/State/CNPS</u>	<u>Habitat</u>	<u>Local Distribution</u>
<u>Coryphanthus palmatus</u>	Fernis' bird's-beak	FE/SE/IB	alkali grassland; vernal pool	less than 1/4 mile south of route; north of Livermore
<u>Amsinckia grandiflora</u>	large-flowered fiddleneck	FE/SE/IB	grassland; oak savannah; below 1200 ft.	only known from 2 extant occurrences, at Lawrence Livermore Lab, several miles south of route
<u>Arctostaphylos pallida</u>	Alameda manzanita	C1/SE/IB	chaparral; dry, sandy and stony ridges; below 2200 ft.	adjacent to route; Berkeley Hills
<u>Clarkia franciscana</u>	Presidio clarkia	C1/SE/IB	coastal sage scrub; grassland; on serpentine	1 to 2 miles south of route; Berkeley Hills
<u>Lilaeopsis masonii</u>	Mason's lilacopsis	C2/SR/IB	freshwater marsh; mudflats; brackish marsh	1 to 5 miles north and south of route; west of Stockton
<u>Coryphanthus mollis</u> asp. <u>hispidus</u>	hispid bird's-beak	C2/IB	alkali grassland; vernal pool	less than 1/4 mile south of route; north of Livermore

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TABLE 2 (continued)

<u>Scientific Name</u>	<u>Common Name</u>	<u>Status</u> <u>Fed/State/CNPS</u>	<u>Habitat</u>	<u>Local Distribution</u>
<u>Eschscholzia</u> <u>rhombipetala</u>	diamond-petaled California poppy	C2/-1B	grassland	3 to 4 miles southeast of route; Byron Hills ^{3,4}
<u>Helianthella</u> <u>castanea</u>	Diablo rock-rose	C2/-1B	chaparral; oak savannah; 500- 4000 ft.	1.5 to 4 miles north of route; Lafayette and Mt. Diablo area
<u>Hesperolimon</u> <u>brownii</u>	Brewer's dwarf flax	C2/-1B	grassland; chaparral; 400-3500 ft.	3 to 4 miles north of route; Mt. Diablo
<u>Hibiscus</u> <u>californicus</u>	California hibiscus	C2/-1B	freshwater marsh	adjacent to and in the vicinity of route; Delta area
<u>Leschenia</u> <u>conjugata</u>	Contra Costa goldfields	C2/-1B	grassland; vernal pool; up to 700 ft.	2 to 4 miles southeast of route; Byron area ³
<u>Lathyrus</u> <u>isersonii</u> ssp. <u>isersonii</u>	delta tulle pea	C2/-1B	freshwater marsh; brackish marsh	2 to 4 miles north of route; Delta area
<u>Trifolium</u> <u>amosium</u>	showy Indian clover	C2/-1A	grassland; swales	several miles southeast of the route; thought to be extinct ³
<u>Tropidocarpum</u> <u>capense</u>	caper-fruited trepidocarpum	C2/-1A	alkali grassland; below 500 ft.	adjacent to 4 miles southeast of route; Byron area ^{3,4}

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TABLE 2 (continued)

Scientific Name	Common Name	Status ¹ Fed/State/CNPS	Habitat	Local Distribution ²
<u>Arctostaphylos</u> <u>auriculata</u>	Mt. Diablo manzanita	C3c/-/1B	chaparral	2 to 4 miles north of route; Mt. Diablo
<u>Delphinium recurvatum</u>	recurved larkspur	-/-/1B	grassland; alkali grassland; salt- bush scrub	1.5 to 3 miles southeast of route; Byron area
<u>Balsamorhiza macrolepis</u> var. <u>macrolepis</u>	balsamroot	-/-/3	grassland; oak woodland; up to 2000 ft	several miles south of route; Livermore

¹ Status:

Federal (USFWS, 1989, 1990a; 1990b)

FE = Federally listed, endangered

C1 =

Enough data are on file to support federal listing

C2 =

Threat and/or distribution data are insufficient to support federal listing

C3c =

Too widespread and/or not threatened

State of California (CDFG, 1989, 1990)

SE = State listed, endangered

SR = State listed, rare

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TABLE 2 (concluded)

California Native Plant Society (CNPS)(Smith & Berg, 1983):

- 1A = Plants presumed extinct in California
- 1B = Plants rare, threatened or endangered in California and elsewhere
- 3 = Plants about which we need more information - a review list

* Based upon computer search and map overlap compiled by the California Natural Diversity Data Base (CNDDB, 1990a,b)

* Possibly extirpated in the region - based upon CNPS

* Possibly extirpated in the region - based upon CNDDB

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Alameda manzanita

Alameda manzanita (Arctostaphylos pallida) is a state listed endangered species and is also a Category 2 candidate for listing by the federal government. Historically, this taxa was known to occur in the Berkeley Hills, and in other hills of Alameda and Contra Costa counties. However, it is now restricted to only a few sites in Huckleberry Regional Preserved and adjacent hills (CDFG, 1987b, 1990b). Alameda manzanita grows on bare, sterile mineral soils in the chaparral plant community, on dry sandy and stony ridges, below 2200 feet in elevation (CDFG, 1987b; Munz and Keck, 1968). There have been several recorded sightings from the vicinity of the route in the Huckleberry Regional Preserve (CNDDDB, 1990b), and could potentially occur immediately adjacent to the route in this area.

Mason's lilaeopsis

Mason's lilaeopsis (Lilaeopsis masonii) is considered rare in the state of California and is also a Category 2 candidate for listing by the federal government. Its distribution extends from Napa County to San Joaquin County and there are less than fifty recorded occurrences (CDFG, 1990b). This semi-aquatic species is found on saturated clay soils along the channels and sloughs of the Sacramento-San Joaquin Delta. It may occur adjacent to the route in freshwater marsh habitat.

4.2.2 Federal Candidate Species

Federal candidates for listing which may occur in the study area include hispid bird's-beak, Diablo rock-rose, Brewer's dwarf flax, California hibiscus, Contra Costa goldfields, delta tule pea, caper-fruited tropidocarpum and Mt. Diablo manzanita.

Hispid bird's-beak

Hispid bird's-beak (Cordylanthus mollis ssp. hispidus) is listed by the CNPS as rare and endangered in California and elsewhere (CNPS 1B). The distribution includes five California coastal as well as inland counties. Along the coast, it occupies saltmarsh habitats, while inland it occupies alkaline grassland sites. It is known from the study area, near the junction of Vasco and Raymond roads, in the alkali grassland and vernal pool plant communities. Potential habitat for this taxon occurs within the northern Livermore and Canada de los Vaqueros vicinity in the study area and along the coast in Alameda and adjacent counties.

Diablo rock-rose

Diablo rock-rose (Helianthella castanea) occupies grasslands as well as openings within foothill woodland and chamise chaparral plant communities. Within the study area, Diablo rock-rose has been recorded from the Black Hills range and in the Rheem Valley. The occurrence in Rheem Valley is about 1.5 miles northwest of the route, associated with black sage, chamise and coast live oak (CNDDDB, 1990b). Observations of recent population decline have spurred

propagation and reintroduction of this species within Mt. Diablo State Park (Dames & Moore, 1990c).

Brewer's dwarf flax

Brewer's dwarf flax (Hesperolinon breweri) is an annual species which occupies grasslands and grassy openings within the chaparral plant community, on serpentine soils (Munz and Keck, 1968). It has been recorded from the Black Hills range and Canada de los Vaqueros in the study area (CNDDDB, 1990b). The nearest occurrence to the route is at the head of Marsh Creek near Mt. Diablo, about three miles north of the route.

California hibiscus

California hibiscus (Hibiscus californicus) is a showy annual species that occurs on moist banks in the freshwater marsh plant community in the Sacramento-San Joaquin Delta area. It has been recorded immediately adjacent to the route, along the Old River at the Highway 4 bridge (CNDDDB, 1990a). It was searched for in the vicinity of the cable boring activities during biological field surveys conducted in April and July 1990, but was not found.

Delta tule pea

Delta tule pea (Lathyrus jepsonii ssp. jepsonii) occur in brackish marshes, within dense stands of tules and rushes. It has been recorded from the Sacramento-San Joaquin Delta area in freshwater marsh vegetation. The nearest record from the study area is about 2 miles north of the route, in the Middle River (CNDDDB, 1990a).

Caper-fruited tropidocarpum

Caper-fruited tropidocarpum (Tropidocarpum capparideum) is a federal candidate, Category 2 taxon, and listed by the CNPS as a species likely extinct within California (CNPS 1A). It has been recorded from the Byron area adjacent to the route, but was not found again during 1978 and 1979 field surveys (CNDDDB, 1990b). It occupied alkaline grassland habitats. All known populations of this species are believed extirpated. Recent investigations in the field have failed to locate extant populations, although in some cases, native habitat is still present (Taylor and Davilla, 1985).

Mt. Diablo manzanita

Mt. Diablo manzanita (Arctostaphylos auriculata) is considered too widespread and/or not threatened enough to become listed by the federal government, but is considered rare enough by the CNPS to be included on List 1B. It occurs on sandy soils in the chaparral plant community in the Black Hills, associated with buck brush, scrub oak and chamise. The nearest record of Mt. Diablo manzanita is two miles north of the route (CNDDDB, 1990b).

4.2.3 Other Sensitive Species

The remaining sensitive plant species in the region are considered rare by the CNPS. Balsamroot is on the CNPS's review list because it has been poorly surveyed and its distribution and abundance is uncertain.

Balsamroot

The balsamroot (Balsamorhiza macrolepis var. macrolepis) is known from six counties in northern California extending from Santa Clara County on the south, north to Tehama County. This plant is a perennial herb that occupies grassy slopes and open woodland communities. The only known occurrence in the region is several miles south, in the Livermore area, within Arroyo Mochon. It was last observed at this location during the in 1930's and has not been relocated since (Dames & Moore, 1990c). One extant occurrence of this taxon within Alameda County (within the vicinity of Hayward) has been documented in the recent past. This population occurs on serpentine rock with grassland associates.

Recurved larkspur

Recurved larkspur (Delphinium recurvatum) is listed by the CNPS as a taxon rare and endangered in California and elsewhere (CNPS 1B). It occurs in alkali grassland and saltbush scrub vegetation in throughout the Central Valley. The nearest record to the route is about 1.5 miles to the southeast, near Byron Hot Springs (CNDDDB, 1990b).

4.3 PLANT COMMUNITIES

Six natural plant communities are considered sensitive and declining in the region by the CNDDDB. Many of these communities also contain sensitive or regionally rare plant species. The local distribution and associated plant species for each of these communities are described on Table 3.

TABLE 3

SENSITIVE PLANT COMMUNITIES KNOWN FROM THE REGION OF
THE US SPRINT FIBER OPTIC CABLE ROUTE FROM OAKLAND TO STOCKTON

<u>Community Name</u>	<u>Other Community Names</u>	<u>Associated Plant Species</u>	<u>Local Distribution</u>
Alkali Meadow	Alkali Grassland; Alkali Seep	<u>Distichlis spicata</u> , <u>Sporobolus airoides</u> , <u>Lasthenia chrysomata</u> , <u>Vulpia megalura</u> , <u>Spergularia macrotheca</u>	adjacent to and up to 2 miles southeast of route; Byron area and Canada de Los Vaqueros
Cismontane Alkali Marsh	Alkali Marsh	<u>Anemopsis californica</u> , <u>Carex spp.</u> , <u>Elymus triticoides</u> , <u>Distichlis spicata</u> , <u>Juncus spp.</u> , <u>Salicornia virginica</u> , <u>Typha spp.</u>	adjacent to route, Byron area and Canada de Los Vaqueros
Northern Claypan Vernal Pool	Vernal Pool	<u>Allocarya spp.</u> , <u>Downingia spp.</u> , <u>Eryngium spp.</u> , <u>Lasthenia spp.</u> , <u>Myosurus minimus</u> , <u>Veronica sp.</u>	¼ mile north of route; Canada de Los Vaqueros
Valley Needlegrass Grassland	Native Grassland; Native Bunchgrass Prairie	<u>Stipa curvum</u> , <u>Stipa pulchra</u> , <u>Avena barbata</u> , <u>Achillea sp.</u> , <u>Bromus spp.</u> , <u>Chlorogalum pommeridianum</u> , <u>Orthocarpus spp.</u>	½ to 3 miles west and east of route; Canada de Los Vaqueros and Byron area
Valley Sink Scrub	Great Valley Chenopod Scrub	<u>Frankenia grandiflora</u> , <u>Lasthenia sp.</u> , <u>Hordeum geniculata</u> , <u>Cordylanthus mollis</u> var. <u>hispidus</u> , <u>Cordylanthus palmatus</u>	¼ to ½ miles south of route; Byron area

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TABLE 3 (concluded)

<u>Community Name</u>	<u>Other Community Names</u>	<u>Associated Plant Species</u>	<u>Local Distribution¹</u>
Coastal and Valley Freshwater Marsh	Freshwater Marsh	<u>Eleocharis</u> spp., <u>Hydrocotyle verticillata</u> , <u>Scirpus</u> spp., <u>Sparganium eurycarpum</u> , <u>Typha</u> spp.	1 + mile north of route; Middle River; delta area

¹ Based upon computer search and map overlays compiled by the California Natural Diversity Data Base (CNDDB, 1990a,b).

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5.0 SENSITIVE AREAS NEAR THE CABLE ROUTE

Sensitive elements occur in the study area along the entire route, however, certain areas contain higher concentrations of many different sensitive elements. This is usually because these areas contain undeveloped, natural land and area often geographically isolated. The sensitive areas along the route are described below.

5.1 BERKELEY HILLS

The Berkeley Hills are a northwest-southeast trending range, located between the cities of Alameda, Oakland and Berkeley and the cities of Moraga, Orinda and Walnut Creek. Most of the upper portions of the mountains are owned by various state parks and reserved, and are relatively undeveloped. The rugged, steeply sloping hills contain dense groves of redwood forests, mixed oak woodland and riparian woodland vegetation. The following sensitive wildlife and plants occur along the mountain range, and may occur adjacent to the cable route: Berkeley kangaroo rat, Alameda whipsnake, California red-legged frog, Durants snail, and Alameda manzanita.

5.2 RHEEM VALLEY

The Rheem Valley is located along the east face of the Berkeley Hills and includes the cities of Moraga and Lafayette. While there are many residential developments adjacent to the route, the surrounding rolling hills within the valley are somewhat undeveloped. Natural, undeveloped areas are dominated by oak woodland vegetation, but also contain chaparral, grassland and riparian woodland. Sensitive species in the area include Alameda whipsnake, Durants snail, and Diablo rock-rose.

5.3 MT. DIABLO

The Mt. Diablo sensitive area is actually over two miles north of the route, near Danville. Mt. Diablo is actually part of the Black Hills range, and contains many of the same sensitive elements. However, since the Mt. Diablo area is protected as a state park it is relatively pristine, it contains many sensitive species. The rugged mountains contain mostly chaparral vegetation. The following sensitive species occur at the lower elevations of the park, and may potentially occur adjacent to the route: California tiger salamander, Alameda whipsnake, Diablo rock-rose, Mt. Diablo manzanita and Brewer's dwarf flax.

5.4 BLACK HILLS

The Black Hills are a northwest-southeast trending mountain range, separating the Bay Area from the Central Valley. The gently rolling hills near the route are heavily grazed and contain mostly grassland vegetation. Relicts of oak woodlands occur adjacent the route and in some of the steeper canyons. Sensitive elements in this area which may occur adjacent to the route include Alameda whipsnake, Brewer's dwarf flax, and Valley needlegrass grassland.

5.5 NORTHERN LIVERMORE

The northern Livermore area is located within a relatively flat valley (Livermore Valley), and is surrounded by gently sloping hills. This area is mostly new residential and commercial developments mixed with older rural farm houses and pastures. Undeveloped areas and pastures contains grassland and oak savannah vegetation. Valley sink scrub, a sensitive plant community, covers a parcel about 300 acres in size just south of the route (CNDDDB, 1990b). Sensitive species associated with the valley sink scrub plant community include burrowing owl, hispid bird's-beak, and Ferris' bird's-beak. San Joaquin kit fox, California tiger salamander and burrowing owl occur throughout the northern Livermore area any may also occur in the study area.

5.6 CANADA DE LOS VAQUEROS

The northern end of Canada de los Vaqueros is located in the study area, along Vasco Road. It is a small mountain range comprised of gently to moderately rolling hills, covered primarily with grassland and oak savannah vegetation. Canada de los Vaqueros contains a future reservoir site, known as the Vaqueros Site and the Lawrence Livermore Lab site, both located several miles south of the route. There have been many biological surveys conducted in this area resulting in the documentation of the only known population of large-flowered fiddleneck. Other sensitive elements which may occur in the study area include California tiger salamander, molestan blister beetle, caper-fruited tropidocarpum, recurved larkspur, valley needlegrass grassland, valley sink scrub, northern claypan vernal pool, and alkali meadow.

5.7 SOUTHERN DELTA AREA

The southern delta area extends from the community of Byron to Stockton. The southwestern portion of this area gradually ascends into the Canada de los Vaqueros are, and includes Byron Hot Springs. The southern delta area consists of a broad, flat valley, interlaced with many rivers and sloughs, at the southern end of the Sacramento-San Joaquin Delta area. Most of this area has been channelized and filled for agriculture. Remnants of freshwater marsh and other wetland vegetation types are scattered throughout the area. Many of the islands within Middle River contain sensitive species that occur within the sensitive coastal and valley freshwater marsh plant community. Sensitive species in the area include California black rail, tricolored blackbird, Swainson's hawk, valley elderberry longhorn beetle, Mason's lilaeopsis, California hibiscus, and delta tule pea. Most of these species are not expected to occur directly adjacent to the route due to agricultural disturbances.

6.0 POTENTIAL IMPACTS

The proposed fiber optic cable route will be located along existing roads between Oakland and Stockton, California. The roads vary from urban expressways to narrow rural roads. Vehicular traffic is high, especially during commuting hours, resulting in an existing threat to wildlife which use the area, including sensitive species. Consequently, the route would generally be avoided by wildlife. The shoulders where the cable will be buried typically consist of gravel or dirt that is highly disturbed. These areas generally contain compacted fill. As such, the exact disturbance zone for the cable has no biological resource value.

With the exception of the three river crossings, the cable will be restricted to paved road beds or shoulders devoid of native habitat. All installation equipment will remain on paved surfaces. Hence, there will be no removal of natural vegetation, no wildlife habitat loss, and no loss of sensitive wildlife, plants or plant communities. Construction activities will cause an increase in noise that could displace sensitive and other wildlife from adjacent habitats. However, this would be a temporary and localized impact.

The two regeneration stations will be constructed above-ground. They will include two unmanned concrete structures (about 8' x 11', and 8'6" high), each located on a site about 40' x 40' in size. The structures will be painted in beige and brown tones to blend with the surrounding environment and the ground surface will be gravel coated. A chain link fence will surround each site. No landscaping is planned. The regeneration sites will be designed to blend in with the existing land use and visual settings at their respective sites.

The eastern regeneration site is located along the south side of Highway 4, near the community of Helt. This site is characterized by agricultural fields and contain no natural vegetation. It is located within the southern delta area of the route, but is not located near any drainages which could support any of the sensitive elements described in this report.

The western regeneration site is located about three miles west of the community of Byron. This site consists of a graded, disturbed area adjacent to a sand quarry. It does not support any of the sensitive elements described in this report.

No significant impacts will occur to biological resources at the crossings because only ruderal habitats will be disturbed, not aquatic or wetland habitats.

7.0 RECOMMENDATIONS

In order to reduce disturbances to nocturnal wildlife adjacent to the route, construction activities should be restricted to daylight hours. Encroachment by vehicles, equipment, or personnel into natural habitats along the route should be avoided.

8.0 REFERENCES

- Bloom, P.H.. 1979. The status of the Swainson's hawk in California. State of California, The Resources Agency, Department of Fish and Game, Non-game Heritage Program, Sacramento, California.
- California Department of Fish and Game (CDFG). 1987a. Five Year status report on Thamnophis couchi gigas. Non-game Heritage Program, Sacramento, California.
- CDFG. 1987b. Five year status report on Arctostaphylos pallida. Non-game Heritage Program, Sacramento, California.
- CDFG. 1989. Designated endangered, threatened, or rare plants. Non-game Heritage Program. List of January. Sacramento, California.
- CDFG. 1990a. List of state and federal endangered and threatened animals of California. List of January. Sacramento, California.
- CDFG. 1990b. 1989 Annual report on the status of California's state listed threatened and endangered plants and animals. Non-game Heritage Program, Sacramento, California.
- California Natural Diversity Data Base (CNDDDB). 1990a. Computer search for the following 7.5 minute quadrangles: Oakland East, Woodward Island, Holt, Stockton West, Clifton Court Forebay, Union Island. 2
- CNDDDB. 1990b. Computer search and map overlays for the following 7.5 minute quadrangles: Oakland West, Walnut Creek, Las Trampas Ridge, Diablo, Tassajara, Livermore, Altamont, Byron Hot Springs, Brentwood, Stockton East, Clayton. 20 September.
- CNDDDB. 1990c. List of "Special Animals". California Department of Fish and Game. List of April.
- Dames & Moore. 1990a. Natural environment study, Route 12 Expressway, City of Suisun, Solano County. Prepared for Caltrans and City of Suisun.
- Dames & Moore. 1990b. Natural environment study, Route 41 Expressway, Fresno County. Prepared for Caltrans and the Fresno County Transportation Authority.
- Dames & Moore. 1990c. Unpublished natural environment study, Highway 84, Livermore, Alameda County. Prepared for Caltrans and Alameda County.
- EIP Associates. 1989. Draft Environmental Impact Report, Ruby Hills Development, general plan amendment and 1837th zoning unit. Prepared for Alameda County Planning Department.
- Hafernick, J. E. Jr.. 1990. Letter report documenting results of entomological field surveys conducted along Highway 84, Alameda County. Prepared for Dames & Moore.

- Jennings, M.R. 1983. An annotated checklist of the amphibians and reptiles of California. California Department of Fish and Game 69(3):151-171.
- Lenihan, C. and J. E. DiDonato. 1987. Raptor populations of southern Alameda County. Predatory Bird Research Group, U.S. Santa Cruz, California. 23 pp.
- Munz, P. and D. Keck. 1968. A California flora with supplement. University of California Press, Berkeley and Los Angeles, CA.
- Smith, J.P., and K. Berg. 1988. Inventory of rare and endangered vascular plants of California (4th Edition). California Native plant Society Special publication No. 1.
- Stebbins, R. C.. 1985. A field guide to western reptiles and amphibians, 2nd, edition, revised. Houghton Mifflin, Boston, MA.
- Taylor, D. W. and W. B. Davilla. 1986. A rare plant survey of Site 300 Lawrence Livermore National Laboratory, San Joaquin County, California. Unpublished technical report. 15 pp. plus appendix.
- United States Fish and Wildlife Service (USFWS). 1989. List of Endangered and Threatened Wildlife and Plants. 50 CFR Part 17. List of March.
- USFWS. 1990a. Endangered and threatened wildlife and plants; Animal notice of review (=candidate list). List of 6 January.
- USFWS. 1990b. Endangered and threatened wildlife and plants; Review of plant taxa for listing (=candidate list). List of 21 February.
- Williams, D.F. 1986. Mammalian species of special concern in California. California Department of Fish and Game, Wildlife Management Division, Administrative Report 86-1.