Draft Initial Study/Proposed Negative Declaration

Central Valley Independent Network Fiber Optic Communications Network Project

Prepared for:

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

AECOM

April 2011

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Prepared by:

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Contact:

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April 2011

Notice of Intent (NOI) to Adopt a Negative Declaration (ND) for the Central Valley Independent Network Fiber Optic Communications Network Project

The California Public Utilities Commission (CPUC) finds that this project could not have a significant effect on the environment. This finding is based on the criteria established in California Environmental Quality Act (CEQA) Guidelines Sections 15064 (Determining Significant Effects), 15065 (Mandatory Findings of Significance) and 15070 (Decision to Prepare a Negative Declaration), and the findings presented in the attached Initial Study Environmental Checklist.

Project Location: The counties of Amador, Calaveras, Colusa, El Dorado, Fresno, Kern, Kings, Madera, Merced, Nevada, Placer, San Joaquin, Stanislaus, Sutter, Tulare, Tuolumne and Yuba.

Project Description: As authorized under the American Recovery and Reinvestment Act (ARRA), the National Telecommunications and Information Administration (NTIA) is administering grant funds through the Broadband Technology Opportunities Program to expand access to broadband services in unserved and underserved areas of the United States and to expand the broadband infrastructure. The Central Valley Independent Network (CVIN), in partnership with the Corporation for Education Network Initiatives in California (CENIC), has applied to NTIA for ARRA funding to plan, install, operate and maintain a fiber optic communications network in portions of California (proposed project). The proposed network would cross 17 California counties, in portions of the northern Sacramento Valley, Sierra Nevada foothills, and the northern and southern San Joaquin Valley. The proposed network would also accommodate several other planned future connections: statewide interconnection of major public safety answering points, a statewide public safety network, and connection of health facilities within the proposed project's 17-county service area through the future California Telehealth Network. The proposed project involves developing approximately 817 miles of fiber-based infrastructure. Approximately 723 miles of the proposed route would require new construction; for the remainder of the route, approximately 94 miles of new fiber optic cable would be installed in existing conduits.

Public Comment Period and Availability of Documents: The Initial Study and NOI to Adopt the ND was released for public review on April 27, 2011 and the 30 day public review period for this NOI will close May 26, 2011. The Initial Study will be available for review at the main libraries in each of the 17 counties and on the CPUC project website: http://www.cpuc.ca.gov/Environment/info/esa/cvin/cvinbroadband.pdf. Copies of the Initial Study on CD may be requested by phone or by e-mail (see below). The CPUC also has a limited number of copies of the complete Initial Study document available for public review upon request at the CPUC offices at 505 Van Ness Avenue, San Francisco, CA 94102. Written comments on the Initial Study and NOI must be received no later than 5 pm on May 26, 2011; please be sure to include your name, address, and telephone number. Written comments on the Initial Study and NOI should be sent to:

Andrew Barnsdale c/o
AECOM
2020 L Street, Suite 400
Sacramento California 95811
Attn: CVIN Project
Phone: (415) 703 3221
Email: Andrew.barnsdale@cpuc.ca.gov

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ACRONYMS AND OTHER ABBREVIATIONS

AB	Assembly bill
AB 32 Scoping Plan	*Climate Change Scoping Plan*
ADRP	archaeological data recovery program
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
AMP	archaeological monitoring plan
APCD	air pollution control district
AQMD	air quality management district
ARB	California Air Resources Board
ARPA	Archaeological Resources Protection Act
ARRA	American Recovery and Reinvestment Act
BAAQMD	Bay Area Air Quality Management District
Basin Plan	*Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*
BLM	U.S. Bureau of Land Management
BMP	best management practice
°C	degrees Celsius
C/O&M	Certified/Operation & Maintenance
CAA	Clean Air Act
CAAA	Clean Air Act Amendments of 1990
CAAQS	California ambient air quality standards
Caltrans	California Department of Transportation
CASF	California Advanced Services Fund
CASQA	California Stormwater Quality Association
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDMG	California Division of Mines and Geology
CENIC	Corporation for Education Network Initiatives in California
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COE	county office of education

CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CSU	California State University
CTR	California Toxics Rule
CVIN	Central Valley Independent Network
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
Delta	Sacramento–San Joaquin Delta
DFG	California Department of Fish and Game
DPH	California Department of Public Health
DTSC	California Department of Toxic Substances Control
DWQ	Division of Water Quality
DWR	California Department of Water Resources
EDD	California Employment Development Department
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
°F	degrees Fahrenheit
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FRAP	Fire and Resource Assessment Program
FRAQMD	Feather River Air Quality Management District
FRM	Federal Reference Method
FTA	Federal Transit Administration
GAP	California Gap Analysis Project
GE	Ethernet
GHG	greenhouse gas
GIS	geographic information system
GPS	Global Positioning System
GWP	global warming potential
HAP	hazardous air pollutant
HSC	California Health and Safety Code
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
IS	initial study

lb/day	pounds per day
L_{eq}	equivalent noise level
LOS	Level of Service
MCL	maximum contaminant level
MMT	million metric ton
MRP	Monitoring and Reporting Plan
MRZ	Mineral Resource Zone
MT	metric ton
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NAIP	National Agriculture Imagery Program
NAL	Numeric Action Level
ND	negative declaration
NEHRPA	National Earthquake Hazards Reduction Program Act
NEL	Numeric Effluent Limitation
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NOI	Notice of Intent
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NTIA	National Telecommunications and Information Administration
NTR	National Toxics Rule
O&M	operation and maintenance
PM_{10}	respirable particulate matter
$PM_{2.5}$	fine particulate matter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1969
ppb	part per billion
ppm	part per million
PPV	peak particle velocity
PRC	California Public Resources Code
ROG	reactive organic gas
RWQCB	regional water quality control board

SB	Senate bill
SCAQMD	South Coast Air Quality Management District
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SJVAB	San Joaquin Valley Air Basin
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SR	state route
SRRE	Source Reduction and Recycling Element
State Parks	California Department of Parks and Recreation
SVAB	Sacramento Valley Air Basin
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TMDL	total maximum daily load
TPY	tons per year
UCMP	University of California, Berkeley Museum of Paleontology
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	vibration decibels
VDE	visible dust emissions
VRM	Visual Resource Management
WDR	Waste Discharge Requirement

1 INTRODUCTION

1.1 OVERVIEW

As authorized under the American Recovery and Reinvestment Act (ARRA), the National Telecommunications and Information Administration (NTIA) is administering grant funds through the Broadband Technology Opportunities Program to expand access to broadband services in unserved and underserved areas of the United States and to expand the broadband infrastructure.

Central Valley Independent Network (CVIN), in partnership with the Corporation for Education Network Initiatives in California (CENIC), has applied to NTIA for ARRA funding to plan and install a fiber optic communications network in portions of California (proposed project). The proposed network would cross 17 California counties, in portions of the northern Sacramento Valley, Sierra Nevada foothills, and the northern and southern San Joaquin Valley. The proposed project involves developing approximately 817 miles of fiber-based infrastructure. Approximately 723 miles of the proposed route would require new construction; for the remainder of the route, approximately 94 miles of new fiber optic cable would be installed in existing conduits.

Because the proposed fiber optic communications network project would use federal funds and would also require grant approval by the California Public Utilities Commission (CPUC), it is subject to environmental review under both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). CPUC's decision to grant or deny grant funding under the California Advanced Services Fund (CASF) triggers the requirement for environmental review under CEQA. This document is the Initial Study and Notice of Intent to Adopt a Negative Declaration (IS/ND) for the proposed project. This IS/ND has been prepared in accordance with CEQA (Section 21000 et seq. of the California Public Resources Code [PRC]) and the State CEQA Guidelines (Title 14, Section 15000 et seq. of the California Code of Regulations [14 CCR 15000 et seq.]). An environmental assessment is being prepared under NEPA, concurrently with this IS/ND. In addition to environmental review under NEPA and CEQA, other federal, state, regional, and local permits and approvals are required.

1.1.1 SCOPE OF THE ENVIRONMENTAL ANALYSIS

CPUC, as the lead state agency for compliance with CEQA, must comply with the environmental review process in accordance with CEQA and the State CEQA Guidelines. All environmental issues identified in Appendix G of the State CEQA Guidelines are discussed in this IS/ND. Environmental protection measures to protect sensitive environmental resources (see Subsection 2.6) have been incorporated into the project and will be made conditions of project approval by the CPUC (under CEQA) and NTIA (under the concurrent but separate NEPA process). Because these measures would be incorporated into project design, construction and operation, impacts to sensitive environmental resources would be avoided or reduced to less-than-significant levels.

1.1.2 LEAD AND RESPONSIBLE AGENCIES

As described under Section 1.1, "Overview" above, the proposed project would require grant approval by the CPUC. As a result, the CPUC is the lead agency for the purposes of complying with CEQA. Therefore, CPUC has prepared this IS and Notice to Adopt (NOI) a ND to provide the public and responsible and trustee agencies with information about the potential environmental effects of the proposed project. The CPUC, as the lead agency for CEQA compliance, will certify the IS/ND as adequate in accordance with the requirements of CEQA. Following certification, the CPUC will use this IS/ND to modify, approve, or deny approval of the proposed project.

The proposed fiber optic communications network would cross many jurisdictions, and would require approvals and permits from various federal, state, regional, and local agencies. The proposed project is also subject to various federal and state environmental regulations (see the "Regulatory Setting" section in each of the respective

discussions of environmental issues in Chapter 3, "Environmental Checklist Form"). Below is a list of identified responsible and trustee agencies.

The proposed fiber optic communications network would cross many jurisdictions, and would require approvals and permits from various federal, state, regional, and local agencies. The proposed project is also subject to various federal and state environmental regulations (see the "Regulatory Setting" section in each of the respective discussions of environmental issues in Chapter 3, "Environmental Checklist Form"). Below is a list of identified responsible and trustee agencies.

RESPONSIBLE AGENCIES

- U.S. Fish and Wildlife Service (USFWS)
- U.S. Bureau of Land Management (BLM)
- U.S. Army Corps of Engineers (USACE)
- California Department of Transportation (Caltrans)
- California Office of Historic Preservation
- California State Water Resources Control Board (SWRCB)
- Central Valley Regional Water Quality Control Board (CVRWQCB)
- Air pollution control and air quality management districts
  - Amador County Air Pollution Control District (APCD)Calaveras County APCD
  - Colusa County APCD
  - El Dorado County APCD
  - Feather River Air Quality Management District (FRAQMD)
  - Northern Sierra Air Quality Management District (AQMD)
  - Placer County APCD
  - San Joaquin Valley APCD
  - Tuolumne County APCD

TRUSTEE AGENCIES

- California Department of Fish and Game (DFG)
- California State Lands Commission

COUNTIES AND INCORPORATED CITIES

Counties

- Amador County
- Calaveras County
- Colusa County
- El Dorado County
- Fresno County
- Kern County
- Kings County
- Madera County
- Merced County
- Nevada County
- Placer County
- San Joaquin County
- Stanislaus County
- Sutter County
- Tulare County
- Tuolumne County
- Yuba County

Incorporated Cities

- Angels Camp
- Atwater
- Auburn
- Bakersfield
- Ceres
- Clovis
- Colusa
- Corcoran
- Delano
- Dinuba
- Escalon
- Exeter
- Farmersville
- Fresno
- Hughson
- Grass Valley
- Hanford
- Jackson
- Kerman
- Lemoore
- Lindsay
- Madera
- Marysville
- Merced
- Modesto
- Nevada City
- Orange Cove
- Placerville
- Plymouth
- Porterville
- Reedley
- Sonora
- Stockton
- Tulare
- Turlock
- Visalia
- Yuba City

1.1.3 PURPOSE AND INTENDED USES OF THIS DOCUMENT

The purpose of this document is to present to decision makers and the public the environmental impacts of implementing the proposed project. The environmental regulatory framework as it pertains to the proposed project is provided in Section 1.4.

1.2 PROJECT BACKGROUND AND HISTORY

1.2.1 BROADBAND TECHNOLOGY OPPORTUNITIES PROGRAM GRANTS AND RELATIONSHIP TO THE AMERICAN RECOVERY AND REINVESTMENT ACT

NTIA and the U.S. Department of Agriculture's Rural Utilities Service are administering a nearly $7 billion ARRA initiative to expand access to and adoption of broadband services in the United States. NTIA is using approximately $4 billion of that funding for the Broadband Technology Opportunities Program, which provides

grants to support the deployment of broadband infrastructure, enhance and expand public computer centers, and encourage sustainable adoption of broadband service. The ARRA award period for the proposed project concludes in July 2013, and the funding is subject to completion of the draft environmental assessment and adoption of a finding of no significant impact under NEPA and completion of this IS and adoption of the proposed negative declaration under CEQA.

1.2.2 CENTRAL VALLEY INDEPENDENT NETWORK

CVIN was formed in 1995 and is a joint enterprise composed of several independent telephone companies: Sebastian, Ponderosa, Sierra, Calaveras, Volcano, Ducor, Cal-Ore, and Siskiyou. CVIN members serve more than 7,000 square miles, providing more than 63,000 access lines and 1,700 miles of fiber network.

1.2.3 CORPORATION FOR EDUCATIONAL NETWORK INITIATIVES IN CALIFORNIA

CENIC is a nonprofit corporation governed by its members, which include the University of California, California State University, California community colleges, the K-12 system, and private universities. The corporation provides cost-effective high-bandwidth networking services to its members. CENIC currently owns and operates a network consisting of more than 2,900 miles of fiber network extending from the Mexican border to Corning, California, and into Arizona, in addition to other circuits leased from other telecommunications carriers.

1.3 PROJECT OBJECTIVES

The objectives of the proposed project are to:

- directly connect numerous underserved primary anchor institutions to high-speed broadband infrastructure;
- provide upgradable and expandable high-speed broadband capacity in the proposed service areas with speeds of 1 gigabit Ethernet (GE) to 10 GE, upgradable to 40 GE in the near future;
- provide a wireless broadband network in unserved and underserved rural areas of Fresno, Tulare, Kings, and Kern Counties;
- enable an increase in telecommuting, with resulting decrease in vehicle miles traveled;
- provide a broadband infrastructure to support future statewide interconnection of major public safety answering points and to support a future statewide public safety network; and
- enable connection of health facilities in the 17-county service area through the California Telehealth Network.

1.4 SCOPE AND FOCUS OF THIS INITIAL STUDY/NEGATIVE DECLARATION

Fiber optic installation projects located strictly in urban areas, installation projects involving placement of fiber only within existing conduits, and projects involving use of existing fiber without the need for any construction or fiber placement are typically qualified for a categorical exemption under CEQA because of the negligible potential for impacts on sensitive environmental resources.

The proposed project involves fiber optic installation in a combination of urban and in nonurban areas. In both areas, the project would include installation of fiber using construction and installation of new conduits, use of existing conduits in areas where available, and use of existing fiber where available. Although there is negligible potential for impacts on sensitive environmental resources associated with placing fiber in existing conduits or use of existing fiber, these aspects of the project have nevertheless been included in the environmental analyses

presented in this IS/ND. The non-construction elements of the proposed project have been included in the analyses because it is possible that activities such as blowing fiber into existing conduit, which requires the use of vehicles and air compressors, when combined with construction activities (associated with conduit installation) could together result in potential construction-related environmental impacts on air quality, noise, and traffic.

The environmental analyses presented in this document address the entire project and have not excluded portions of the project in urban areas or portions that involve only blowing fiber into existing conduits or use of existing fiber even though these types of activities, undertaken individually, may normally be qualified for a categorical exemption under CEQA. All of the components of the proposed project constitute part of the larger project and are, therefore, included in this IS/ND.

1.5 ORGANIZATION OF THIS DOCUMENT

This IS/ND is divided into the following five chapters:

Chapter 1, "Introduction," discusses the purpose, background, and objectives of the proposed project; summarizes the proposed project's environmental regulatory framework; and describes the organization of this document.

Chapter 2, "Project Description," contains a detailed description of the proposed project's location, proposed facilities, and construction methods. Included in the project description are environmental protection measures, which have been incorporated into project design and will be adopted by the CPUC and NTIA as conditions of approval.

Chapter 3, "Environmental Checklist Form," describes the environmental and regulatory settings for each environmental topic, the assumptions and methods used in the impact analysis, and the thresholds used to determine the significance of the proposed project's impacts; identifies the potential environmental impacts of the proposed project for each environmental topic; and specifies how implementation of the environmental protection measures, where necessary, would result in the avoidance, minimization, or reduction of each potential impact.

Chapter 4, "References," lists the references used in preparation of this IS/ND.

Chapter 5, "List of Preparers," identifies the preparers of this IS/ND.

Technical Appendices contain technical data and information to support the conclusions and findings in the IS/ND.

2 PROJECT DESCRIPTION

2.1 INTRODUCTION

CVIN and CENIC are proposing to build, operate, and maintain a fiber optic communications network in the northern Sacramento Valley, northern Sierra Nevada foothills, and northern and southern San Joaquin Valley. The proposed network would provide high-speed broadband access capabilities for 17 California counties: Amador, Calaveras, Colusa, El Dorado, Fresno, Kern, Kings, Madera, Merced, Nevada, Placer, San Joaquin, Stanislaus, Sutter, Tulare, Tuolumne, and Yuba. The proposed network would also accommodate several other planned future connections: statewide interconnection of major public safety answering points, a statewide public safety network, and connection of health facilities within the proposed project's 17-county service area through the future California Telehealth Network.

The proposed project involves developing approximately 817 miles of fiber-based infrastructure. Approximately 723 miles of the proposed route would require new construction; for the remainder of the route, approximately 94 miles, new fiber optic cable would be installed into existing conduits.

2.2 REGIONAL LOCATION

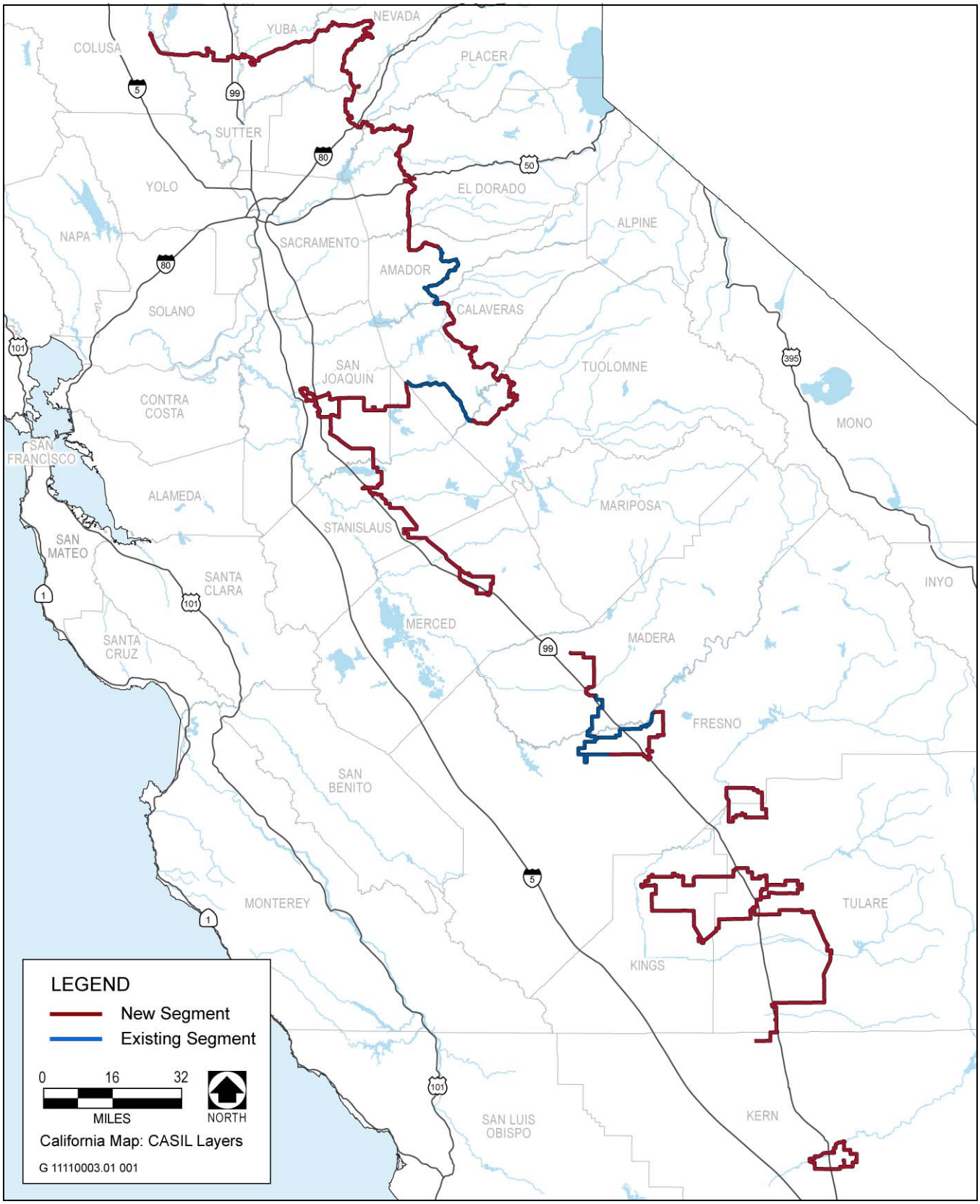
The proposed project would be located mainly in the northern Sacramento Valley, the northern Sierra Nevada foothills, and the northern and southern San Joaquin Valley in northern and central California (Exhibit 2-1). The proposed construction route would pass through each of the 17 counties described below. Typically the shortest and most direct route would be followed, along urban and rural county-owned and maintained roads; the proposed route would connect with anchor and client institutions (see Section 2.4.1, "Existing Facilities and Connection to Existing Facilities," below for further information), especially educational facilities.

2.3 PROJECT LOCATION

As described above, the proposed fiber route would traverse 17 California counties in the northern Sacramento Valley, northern Sierra Nevada foothills, and northern and southern San Joaquin Valley, California (Exhibit 2-1). Detailed route maps are provided in Appendix A. The following sections describe the proposed route in four geographic areas: northern Sacramento Valley, Sierra Nevada foothills, northern San Joaquin Valley, and southern San Joaquin Valley.

2.3.1 NORTHERN SACRAMENTO VALLEY

In the northern Sacramento Valley, the westernmost anchor facility to which the proposed project would be attached is the Colusa County Office of Education (COE), located in the city of Colusa. From the Colusa COE, the proposed route follows the southeast alignment of State Route (SR) 20 (also known as the Colusa Highway) until it reaches the town of Meridian in Sutter County. From Meridian, the proposed route continues for approximately 25 miles until it reaches the town of Sutter, then loops through the town and connects to Sutter Union High School (including a cabinet facility) before continuing on to Yuba City. In Yuba City, a connection is made to the Sutter COE Nos. 1 and 2 and the County Library; then the proposed route continues east (crossing the Feather River) into Marysville and connects to the Yuba County Library COE Nos. 1 and 2 and the Caltrans building, before continuing into the town of Linda to connect to Yuba Community College. From there, the proposed route heads northeast (north of Beale Air Force Base), and then continues northeast adjacent to the Hammonton-Smartville Road, south of Smartville.



Source: Adapted by AECOM in 2010

Regional Map **Exhibit 2-1**

2.3.2 SIERRA NEVADA FOOTHILLS

In the Sierra Nevada foothills, the proposed route trends northeast before crossing SR 20 again, where it continues on Mooney Flat Road past Lake Wildwood, joins onto Pleasant Valley/Wildwood Heights Road, then heads east to connect with the Nevada COE in Nevada City (where a cabinet would be installed). The proposed route then turns south on Ridge Road into a loop in Grass Valley, and then south briefly on SR 174, then continues southwest on McCourtney Road. Next, the proposed route continues southwest on Lime Kiln and Duggans Roads until it reaches a cabinet site at the Nevada COE No. 2 off of Magnolia Road, just north of Lake of the Pines. The proposed route also makes connections with the Placer COE and the Placer County Library in Auburn before winding east in the foothills along El Dorado Street/SR 49. From there, the proposed route crosses the Middle Fork of the American River near the Auburn State Recreation Area and passes into El Dorado County, then jogs south along Coloma Road/SR 49 into the town of Cool.

From Cool, the proposed route heads east along SR 193, past the towns of Greenwood and Georgetown, then south along Marshall Road past Garden Valley to Coloma. The proposed route then winds southward through El Dorado County, making connections to the El Dorado COE and El Dorado County Library. From El Dorado, the proposed route continues generally southeast along Missouri Flat Road through the town of Diamond Springs, where it runs adjacent to Pleasant Valley Road/SR 49; then it continues adjacent to Bucks Bar Road, continuing generally southeast. The proposed route passes near the town of Somerset, then continues south adjacent to Mt. Aukum Road, passes near Aukum and River Pines, and switches to Plymouth Shenandoah Road heading south (near Plymouth) before heading east along Fiddletown Road through Fiddletown. The proposed route connects with existing fiber just east of Fiddletown in Amador County.

The existing fiber runs between the towns of Volcano and Pine Grove, and the city of Jackson. A small amount of fiber would be constructed in Jackson to connect existing fiber to the Amador COE and Amador County Library. The route of existing fiber extends south across the Mokelumne River; the new fiber construction route is proposed to connect with the existing fiber in the town of Mokelumne Hill. From there, along Hawver Road and Gold Strike Road, the proposed route continues south into the town of San Andreas, where it connects to the Calaveras County Library and a new cabinet site. The proposed route continues through the town of Angels Camp, where a new cabinet site is established and the route connects to the Calaveras COE. The proposed route continues east through the town of Vallecito along Parrot Ferry Road, crosses the Stanislaus River, passes through the town of Columbia, and connects to Columbia College. The proposed route then continues along Sawmill Flat Road/SR 49 into the town of Sonora, connecting to the Tuolumne COE and Tuolumne County Library, then continues southwest on County Road E15 and SRs 120 and 108 past Jamestown to connect with existing fiber near Tulloch Lake.

2.3.3 SAN JOAQUIN VALLEY

From Tulloch Lake, the proposed route connects at the western end of existing fiber in San Joaquin County at the intersection of Rock Creek and Milton Roads and heads south, then west through Farmington before connecting to the San Joaquin COE and San Joaquin County Library. The proposed route then heads south on Yosemite Avenue/SR 120, then east through Escalon, south past Denair, and into Modesto and Stanislaus County. In Modesto, the proposed route connects with the Stanislaus COE and Stanislaus County Library. The route heads east into Empire before turning south, then turns again to head southeast on Santa Fe Avenue through Hughson, Denair, and into Turlock, where it connects with California State University (CSU), Stanislaus. From CSU Stanislaus, the proposed route heads southeast along County Road 37 past Ballico, crosses the Stanislaus River, and passes through the town of Winton; the route then loops in Atwater and Merced, forming connections between existing cellular towers, new cabinet sites, Merced College, the Merced COE, and the Merced County Library. In Madera County, at an existing WilTel site at the intersection of Avenue 24 and Santa Fe Avenue, the proposed route makes a new connection with existing fiber and heads east for approximately 5.5 miles, then heads south along Road 28½ into Madera to connect with the Madera COE and Madera County Library. The proposed route connects to existing fiber near the intersection of Avenue 14 and Road 29 just east of Madera then

reconnects to the existing fiber in Fresno. The new fiber in Fresno is proposed to provide connections between the existing fiber, CSU Fresno, the Fresno COE, Fresno County Library, and the State Center Community College District.

Southeast of Fresno, straddling Fresno and Tulare Counties, a new ring would be constructed to connect Reedley College in Reedley and the communities of Orange Cove, Orosi, and Dinuba. Straddling Kings and Tulare Counties, a ring of new fiber would be constructed to connect the Tulare COE, Tulare County Library, Kings COE, and Kings County Library. The proposed route would also include the towns of Farmersville, Goshen, Home Garden, Hanford, Lemoore, Corcoran, Cairns Corner, Exeter, and various cellular towers in and around those towns. From Tulare, the proposed route heads east into the town of Lindsay, then south through the town of Strathmore and into Porterville, where it connects to the Porterville Library and Porterville College; south of Porterville the proposed route connects to existing fiber. The proposed route reconnects at the southern end of the existing fiber route adjacent to Avenue 56 at the Friant-Kern Canal and heads west into Earlimart to connect to Earlimart Elementary School and the Tulare COE hub. From Earlimart, the proposed route heads south along Avenue 32/Road 144 through Delano, where the route heads west and terminates its alignment in Tulare County at the intersection of Corcoran Road and Garces Highway.

The southernmost ring of fiber would be constructed in Kern County in the city of Bakersfield. The ring would connect the Kern Community College District, Kern COE, Kern County Library, CSU Bakersfield, and the Kern County Office of Public Safety, and would provide connections to some rural areas in southeast Bakersfield. The proposed route runs east-west along SR 58 across Keyandee and loops south to cross through or close to the communities of Gosford, Vernola, and Wible Orchard along White Lane/East White Lane. The proposed route also extends north to south along SR 184 near to Mayfair, Lonsmith, Algoso, and Magunden.

2.4 DESCRIPTION OF THE PROPOSED PROJECT

The proposed project involves developing approximately 817 miles of fiber-based infrastructure (Exhibit 2-1 and Appendix A). Approximately 723 miles of the proposed route would require new construction; for the remainder of the route, approximately 94 miles of new fiber optic cable would be installed in existing conduits. This infrastructure would be linked to CENIC's existing statewide backbone infrastructure, providing users in the proposed service area access to robust, state-of-the-art broadband services. The exact route is subject to minor modifications based on preferences identified by local jurisdictions and locations of sensitive environmental resources.

2.4.1 EXISTING FACILITIES AND CONNECTION TO EXISTING FACILITIES

Proposed new facilities would be connected to CENIC's existing network at seven locations between Colusa County in the north and Bakersfield in the south (Appendix A). Connection to anchor client institutions would be provided at up to 60 locations. In addition, connections would be made to several existing cellular towers in rural portions of Fresno, Tulare, Kings, and Kern Counties. Centralized network management facilities would be located at existing CENIC and CVIN network operations centers; the CENIC and CVIN facilities would each be capable of jointly or individually managing facilities across the entire network should either facility become unavailable as a result of unforeseen circumstances or disasters.

In addition to the direct links to CENIC's statewide backbone infrastructure and use of existing conduits and existing fiber, the proposed project would connect to client institutions and to existing cellular towers, as described below.

ANCHOR AND CLIENT INSTITUTIONS

Interconnection points along the proposed route would be provided at intervals of approximately 40–50 miles. These interconnection points would allow services to be extended to anchor and client institutions such as county

offices of education, community colleges, CSU campuses, libraries, hospitals, public safety institutions, and other future customers.

CELLULAR TRANSMISSION TOWERS

Fixed WIMAX wireless access would be provided to unserved and underserved rural areas of Fresno, Tulare, Kings, and Kern Counties, delivering 180 million bits per second of capacity through fiber connection to up to 19 existing cellular towers (shown in Appendix A). Existing towers would be connected to the proposed (primary fiber) route by a 1-GE fiber line.

2.4.2 PROPOSED FACILITIES

NEW FIBER CONDUIT

Approximately 723 miles of new fiber conduit would be installed along road rights-of-way and an additional 94 miles of new fiber would be installed in existing conduit and would not involve ground disturbance. In the new conduit construction, two conduits with microducts would be installed approximately 48 inches below the ground surface. The conduits would be 1.25-inch-diameter and 2-inch standard dimension ratio polyethylene pipe. Access to the new conduits would be provided by installing access boxes (vaults) at intervals of not more than 3,000 feet along the proposed route. Each access box would be either 36 inches by 60 inches or 24 inches by 36 inches, would have a traffic-bearing cover, and would extend to 48 inches below the existing ground surface.

CABINETS

Connections to anchor and client institutions would be accomplished by installing cabinets on the outside of institution buildings and connecting the cabinets to the primary fiber line. Cabinet would be placed in a 10-foot by 12-foot fenced area within developed portions of the institution's property. Each cabinet facility would be powered by on-site available commercial electricity, with a hydrogen fuel cell providing backup power. No backup generators would be used. Photographs of typical cabinet facilities are included in Appendix A.

Future system upgrades would be accomplished by adding or replacing cards at cabinets to meet future capacity requirements. Cabinets have been designed to accommodate the future addition of card shelves.

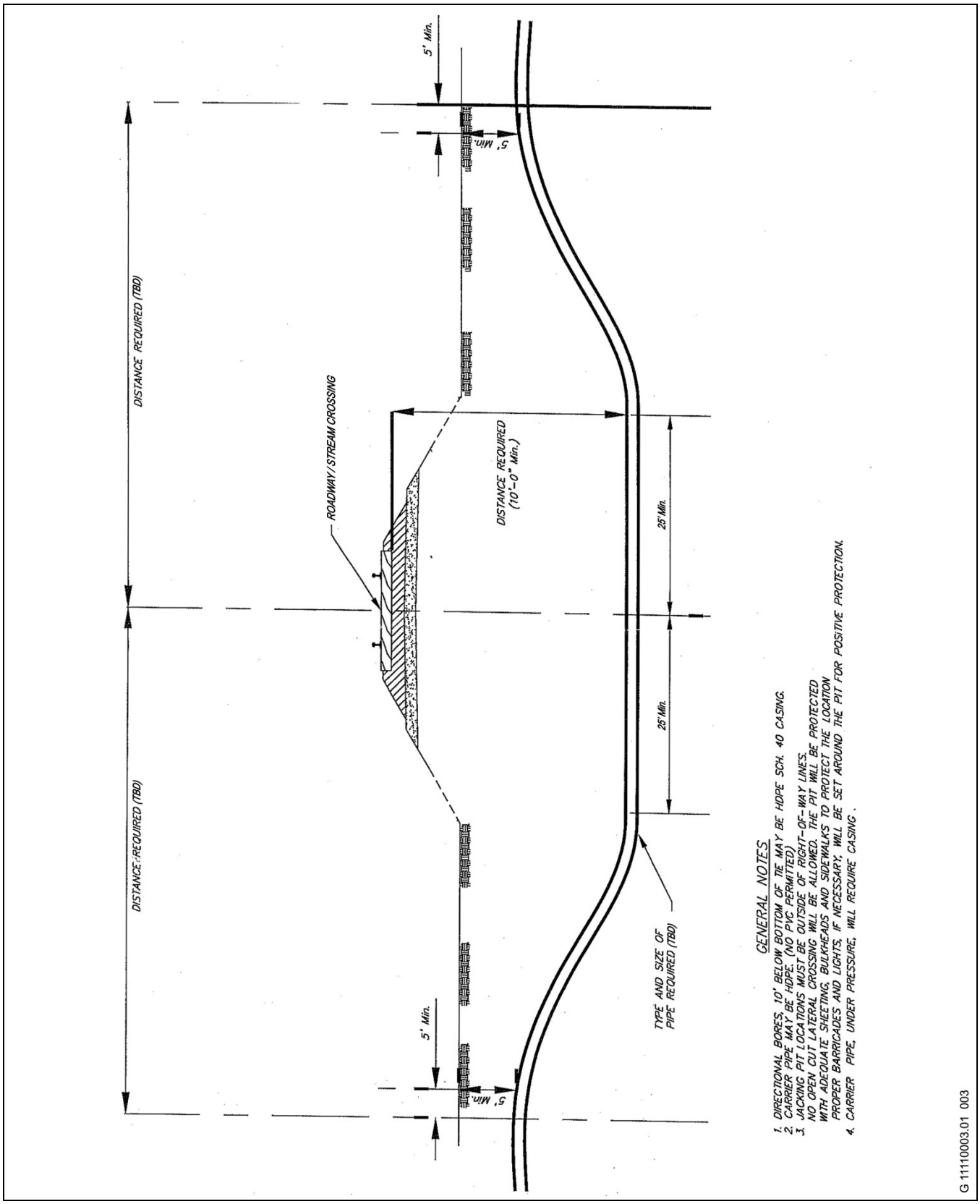
Proposed cabinet locations are shown in Table 2-1 and on the proposed route maps included as Appendix A.

2.5 DESCRIPTION OF PROPOSED CONSTRUCTION METHODS

2.5.1 CONDUIT INSTALLATION IN URBAN AREAS

Within urban areas, the conduit would be installed primarily through directional drilling (boring) (Exhibit 2-2), with drilling access points spaced intermittently. Midblock locations under existing sidewalks would be the preferred locations for access boxes. Typically, conduits would be installed from 4 feet up to 12 feet under street intersections to avoid concentrations of other existing utilities. Under some circumstances or to accommodate a local jurisdiction's preference, the conduit may be installed by cutting pavement, excavating a narrow trench, and backfilling and repaving the cut pavement.

In areas where existing conduit would be used to install new fiber optic lines, microducts and fiber would be air-jetted or blown into the existing conduit at existing access locations. Installation of fiber into existing conduits using these methods would not require any new ground disturbance—only access to existing buried boxes—and would require two vehicles and an air compressor.



Source: Data provided by CVIN in 2010

Typical Directional Drilling **Exhibit 2-2**

Table 2-1
Proposed Cabinet Sites

County	General Location
Amador	None
Bakersfield	1 at the Kern County Office of Public Safety at the intersection of Panorama Drive and Mt. Vernon Avenue
	1 near CSU Bakersfield
Calaveras	1 at the Calaveras COE on South Main Street
Dinuba-Reedley	1 near Reedley College on North Reed Avenue
El Dorado	1 next to the El Dorado COE on Green Valley Road
Fresno	1 near the CSU Fresno near East Barstow and Campus Drive
Madera	1 near the Madera COE near the intersection of Road 28 and East Olive Avenue
Merced	1 near the Merced COE near the intersection of Arbor Lane/Canal Street and West Main Street
Nevada	1 at the Nevada County Library near SR 49
	1 at the Nevada COE near Magnolia Road and Combie Road
Placer	1 at the Placer COE near Nevada Street and Enterprise
Tulare-Kings County	1 at the College of the Sequoias at SR 198 and South Woodland Street
Tuolumne	1 at Columbia College near the intersection of Forest Park Drive and Sawmill Flat Road
Yuba	1 at Yuba College on North Beale Road

Notes: CSU = California State University; COE = County Office of Education; SR = State Route
Source: Data provided by CVIN in 2011

2.5.2 CONDUIT INSTALLATION IN NONURBAN AREAS

In nonurban areas, the conduits would typically be installed using a plowing technique, in which a vibratory cable plow incises the soil to a depth of 48 inches below the ground surface and the conduits are placed in the incised slit at the same time. To accomplish this, as the single-tine vibratory cable plow parts the soil to lay the conduit, the conduits are laid down through a shaft attached to the plow, and then the soil reconsolidates immediately behind the plow. Plowing is generally performed using a tracked vehicle approximately 8 to 9 feet wide, typically a Caterpillar D5. Disturbance associated with plowing would occur entirely within the road right-of-way and would not exceed a 15 foot wide linear progression.

In areas where conditions are unsuitable for plowing (for example, if the soil matrix is characterized by a high density of rocks greater than six inches in diameter, or where existing underground infrastructure prohibits plowing) trenching would be needed to install the conduits. To create the conduit trench, a backhoe or other equipment is used to open a trench ranging in width from 9 to 18 inches wide and 48 inches deep. The conduit would be placed at the bottom of the trench, and the trench would be backfilled and compacted using trenching spoils, imported fill material or sand slurry as required. The trench is typically refilled the same day that it is created, and if a trench is left open at the end of the workday it is covered in accordance with standard best management practices.

Plowing within the right-of-way is the preferred method of construction, where practicable and feasible, because it results in the least soil disturbance. However, in areas where the right-of-way is very narrow or where sensitive

biological or cultural resources must be avoided, trenches can be cut in the roadway and the conduits installed below the pavement. In such circumstances, the trench would be backfilled with slurry to ensure proper compaction and pavement integrity.

The location of conduit installation in road rights-of-way would be adjusted to avoid any direct impacts to sensitive resources and to minimize potential indirect impacts. The exact placement of conduits would be informed by the results of biological and cultural resource surveys, to be completed by summer 2011, and would be ultimately be determined based on several factors: presence and location of sensitive environmental resources such as habitat for special-status species, wetlands, drainages, and cultural resources; locations of existing buried utilities; constructability; and the preference of jurisdictional agencies. Minor route modifications could be made based on these factors.

2.5.2.1 CONDUIT INSTALLATION AT WATERWAYS AND RAILROAD CROSSINGS

The proposed route crosses a number of rivers and canals, including in the southern San Joaquin Valley region, where the route intersects several large irrigation canals. For these large streams or canals the conduit may be installed on bridges for the purposes of avoidance of sensitive environmental resources. The aerial stringing may be accomplished with conduit attachment to bridges using a 4 to 6-inch galvanized iron pipe attached beneath or to the side of the bridge, depending on the age and condition of the bridge and the preferences of agency with jurisdiction over the bridge. If existing utility poles are available in the immediate vicinity of the proposed route these may also be used for aerial stringing. Directional drilling beneath canals or streams may also be used to avoid sensitive resources. Directional drilling operations would typically range from 25 to 1,500 feet in length. The depth of the bore would be at least 15 feet below the sensitive resource being avoided, including streambed alluvium, and this depth may increase based on site-specific conditions and on recommendations from regulatory agencies. Stream crossing origination and completion points would be a minimum of 100 feet from the edge of the stream, or at a distance approved by the appropriate regulatory agency. Equipment used for directional drilling would vary based on the particular needs of the site and the contractor's preferences, but generally would include a drilling rig with fluid management systems and a drill pipe.

Several railroads would also be crossed by the proposed route. Where the route would cross railroad alignments, directional drilling would occur below the railroad tracks, at a minimum of 18 feet below the base of the centerline of the tracks. Directional drilling would originate and terminate in the rights-of-way of public roads outside of the railroad right-of-way. The proposed route also crosses several major state highways (SR 41, SR 99, SR 198). In each case, the state highways would be crossed either by completing directional drilling under the roadway or by attaching conduits to the bridge over the roadway. The method used would depend on the bridge's age and condition, and if within Caltrans jurisdiction, on Caltrans preferences. Where vaults would be placed within Caltrans rights-of-way, approval and installation procedures specified in the Caltrans *Draft Vault Criteria and Encroachment Permit General Provisions* will be followed. The draft criteria are presented in Section 3.2, "Agriculture and Forestry Resources."

In most cases where the proposed route would cross streams and rivers (such as the Sacramento River, Feather River, Yuba River, North Fork American River, South Fork American River, North Fork Cosumnes River, Middle Fork Cosumnes River, South Fork Cosumnes River, Stanislaus River, Calaveras River, Dry Creek [near Modesto], Merced River, and the Fresno River) directional drilling below the stream would occur if aerial stringing of conduit was not an option.

2.5.3 CONSTRUCTION SEQUENCING

Construction would occur in 30 separate segments (Table 2-2), some of which would be constructed simultaneously. Dependent on field conditions, construction is anticipated to progress at a rate of approximately

Table 2-2
Anticipated Fiber Optic Cable Installation Construction Segment Schedule

Section	Miles	Segment Number	Segment	Route Miles	Engineering Start	Engineering Completion	Construction Start	Construction Completion	Engineering Days	Construction Footage	Construction Days	Feet per Day	Boxes
1	151.19	3	Ducor Overblow	16.80	2/28/11	3/8/11	7/27/11	8/10/11	8	88,704	15	6,000	N/A
1		14	Porterville-Tulare	31.70	2/28/11	7/4/11	9/26/11	6/30/12	126	166,848	278	600	67
1		22	Sandrini-Earlimart	25.80	2/28/11	6/11/11	9/26/11	3/25/12	103	136,224	182	750	54
1		6	Bakersfield	39.42	2/28/11	8/11/11	10/27/11	10/23/12	165	217,642	363	600	87
1		23	Dinuba-Reedley	37.47	2/28/11	7/27/11	10/27/11	7/16/12	149	197,314	263	750	79
2	130.89	30	Tulare-Waukena	14.20	2/28/11	4/25/11	9/9/11	12/17/11	57	74,976	100	750	30
2		12	Hanford-Visalia	36.80	2/28/11	7/7/11	9/26/11	7/6/12	129	170,544	284	600	68
2		13	Visalia-Tulare	33.13	2/28/11	7/27/11	10/27/11	9/18/12	149	196,733	328	600	79
2		15	Waukena-Lemoore	46.76	2/28/11	9/2/11	12/19/11	11/10/12	186	245,520	327	750	98
3	145.96	1	Fresno Overblow	54.69	2/28/11	4/4/11	7/27/11	9/27/11	35	373,085	62	6,000	N/A
3		10	Madera	19.60	2/28/11	5/17/11	9/9/11	2/28/12	78	103,488	172	600	41
3		5	Fresno	33.27	2/28/11	6/13/11	9/26/11	5/15/12	106	139,445	232	600	56
3		11	Merced	38.40	2/28/11	8/1/11	10/27/11	9/29/12	154	203,280	339	600	81
4	109.36	7	Stockton	17.08	2/28/11	5/9/11	7/27/11	12/29/11	71	93,403	156	600	37
4		8	Turlock	11.50	2/28/11	4/15/11	7/27/11	11/5/11	46	60,720	101	600	24
4		9	Modesto Urban	13.45	2/28/11	4/22/11	7/27/11	11/22/11	54	71,016	118	600	28
4		18	Modesto Rural	18.93	2/28/11	5/14/11	7/27/11	12/7/11	76	99,950	133	750	40
4		17	Stockton South	26.00	2/28/11	6/12/11	9/26/11	3/27/12	104	137,280	183	750	55
4		16	Stockton-Milton	22.40	2/28/11	8/7/11	10/27/11	8/4/12	160	211,728	282	750	85
5	129.91	2	Calaveras Overblow	22.50	2/28/11	3/11/11	7/27/11	8/15/11	11	118,800	20	6,000	N/A
5		4	Jackson Aerial Fiber	0.52	2/28/11	3/4/11	7/27/11	8/1/11	4	2,746	5	500	1
5		21	Red Mule North	13.50	2/28/11	4/23/11	9/9/11	12/13/11	54	71,280	95	750	29
5		24	Placer	24.08	2/28/11	6/3/11	9/26/11	3/12/12	96	126,562	169	750	51
5		19	Tuolumne	30.41	2/28/11	7/8/11	10/27/11	6/13/12	131	172,550	230	750	69
5		20	Calaveras E	38.90	2/28/11	8/2/11	12/19/11	9/17/12	156	205,392	274	750	82
6	149.34	28	Yuba	23.55	2/28/11	6/7/11	9/9/11	3/2/12	100	131,789	176	750	53
6		26	El Dorado S	15.40	2/28/11	4/30/11	9/26/11	1/12/12	62	81,312	108	750	33
6		29	Sutter+Colusa	30.32	2/28/11	7/8/11	9/26/11	7/10/12	131	172,867	288	600	69
6		25	El Dorado N	32.40	2/28/11	7/21/11	10/27/11	7/6/12	144	189,922	253	750	76
6		27	Nevada	47.67	2/28/11	9/24/11	12/19/11	12/19/12	208	274,982	367	750	110

Source: Data provided by CVIN in 2010

600 to 750 feet per day where linear features (i.e., new fiber optic line) are being constructed. Any individual segment might have multiple separate construction crews working at any given time, with plowing, trenching, and directional drilling occurring at the same time in different locations of the same segment.

All construction activity conducted along roads and highways would employ standard traffic control measures in accordance with the Caltrans *Manual of Traffic Controls for Construction and Maintenance Work Zones*.

2.5.4 CONSTRUCTION SCHEDULE

If the proposed project is funded and approved, construction is anticipated to begin in the summer of 2011, assuming receipt of all environmental clearances, approvals, permits, and authorizations. Some segments of the route would be constructed concurrently, and others would be constructed consecutively. The entire construction phase is expected to be completed in approximately 14 months, by 2013, in order to receive federal funding. The anticipated construction schedule is included in Table 2-2.

2.5.5 CONSTRUCTION VEHICLES AND EQUIPMENT

The types of construction vehicles and equipment that would be used during construction vary depending on the type of installation being conducted at any specific location. In general, there would be five different construction activity types that would be conducted along each segment. The types of equipment that would be used include pickup/utility trucks, cable plows, trenchers, excavators with a rock saw or rock breaker, dump trucks, backhoes, boring rigs, and bucket trucks (for aerial installation). The following identifies the currently anticipated equipment for each construction activity type:

- Trenching
  - 3 pick-up/utility trucks
  - 2 cable plows
  - 2 trenchers
  - 2 excavators/rock saw/crusher
  - 2 dump trucks
  - 3 backhoes

- Directional Drilling
  - 2 pick-up/utility trucks
  - 1 boring rig
  - 3 backhoes

- Fiber Blowing
  - 2 pick-up/utility trucks
  - 1 air compressor
  - 3 backhoes

- Aerial Fiber Installation
  - 1 pick-up/utility truck
  - 1 bucket truck

- Fiber Splicing
  - 1 pick-up/utility truck

2.5.6 CONSTRUCTION STAGING AND EQUIPMENT LAY-DOWN AREAS

Staging areas would be established within the road rights-of-way or other disturbed areas along the proposed construction route, and would not exceed an area great than 200 feet by 200 feet. If it is not possible to locate staging areas in the rights-of-way due to narrow roads or other constraints the contractor would locate staging areas and equipment lay-down areas and storage areas in paved or graveled yards or other disturbed areas as close to the construction areas as possible. The exact locations of construction staging areas and equipment lay-down areas have not been determined. Locations would be selected by individual construction companies that would be awarded contracts for construction of individual segments.

Although the exact locations of the construction staging areas and equipment lay-down areas have not been determined, the proposed study area as indicated on Exhibits A-1 through A-17 in Appendix A delineate the areas from which the specific locations of lay-down and staging areas would be selected. Section 2.6, "Environmental Protection Measures," describes the protocols that would be used in siting staging and equipment lay-down areas to ensure sensitive environmental resources are avoided and protected.

2.6 ENVIRONMENTAL PROTECTION MEASURES

2.6.1 INTRODUCTION

Measures to protect sensitive environmental resources have been incorporated into the project and will be made conditions of approval of the project by CPUC (under CEQA) and NTIA (under the concurrent but separate NEPA process). These environmental protection measures are described below. Because these measures would be incorporated into the project, adverse impacts related to aesthetics, air quality, biological resources, cultural resources, geology and soils, greenhouse gas (GHG) emissions, hazards and hazardous materials, hydrology and water quality, noise, transportation/traffic, and utilities and service systems would be avoided or reduced to a less-than-significant level.

2.6.2 GENERAL PROTECTION MEASURES

In addition to the resource-specific environmental protection measures described below, the following general protection measures shall apply to all project-related construction activities. CVIN shall implement all environmental protection measures. During construction, CVIN, with CPUC oversight, shall be monitor and verify that all potential direct and indirect impacts of the project are avoided, minimized, or reduced to less-than-significant levels. All monitoring and verification results shall be compiled into a Monitoring and Reporting Plan (MRP) that incorporates all environmental protection measures and submitted to the CPUC for compliance with and adherence to the adopted Conditions of Approval.

Environmental Protection Measure 1: Restrict Construction Activities to Disturbed Areas.

All construction activities conducted by CVIN and its contractors shall take place within the disturbed road right-of-way or in areas that have been surveyed by a qualified biologist and qualified cultural resource specialist and have been found to be devoid of sensitive resources. Staging and equipment lay-down areas shall be established only on disturbed areas and shall be located on private lands in existing contractor yards; existing commercial areas used for storing and maintaining equipment; previously cleared, graded, or paved areas; portions of the construction right-of-way; or level areas where grading and vegetation clearing are not required.

Environmental Protection Measure 2: Comply With All Applicable Laws, Ordinances, Regulations, and Policies.

Prior to project construction, CVIN shall consult with all appropriate jurisdictions to ensure consistency with applicable federal, state, regional, and local (city and/or county) regulations, law, policies, and ordinances relevant

to construction and operation of the proposed project. Construction and operation of the project shall comply with all applicable laws, regulations, policies, and ordinances.

Environmental Protection Measure 3: Monitor and Report on Environmental Protection Measure Compliance during Construction:

CVIN shall develop and implement an MRP that identifies monitoring and reporting procedures for all environmental protection measures included in the CPUC Conditions of Approval for the project. The MRP shall include accurate and up-to-date maps depicting the location of sensitive biological or cultural resources that require avoidance or other protection measures during construction. The MRP shall also include a detailed discussion of how all environmental protection measures described in this IS/ND shall be implemented and shall describe a mechanism for verifying and reporting on compliance to the appropriate agency or local jurisdiction. Prior to commencement of construction, CVIN shall submit the MRP to the CPUC for review and approval.

2.6.3 RESOURCE-SPECIFIC PROTECTION MEASURES

AESTHETICS

The following environmental protection measure completely avoids or reduces to a less-than-significant level aesthetics impacts described in Section 3.1:

Environmental Protection Measure 3.1-1: Implement Environmental Protection Measure 3.5-1 for Attaching Conduit to Historic Bridges, and If Rerouting or Directional Drilling (Boring) Is Infeasible, Paint Conduits Attached to Historic Bridges and Nonhistoric Bridges Crossing Scenic Waterways the Same Color as the Bridge.

CVIN shall implement Environmental Protection Measure 3.5-1, "Implement Specific Measures for Full Avoidance of Adverse Effects on Each Cultural Resource Potentially Eligible for Listing in the National Register of Historic Places or the California Register of Historical Resources," for attaching conduit to historic bridges. However, if rerouting or directional drilling (boring) is infeasible, or if the conduit would be attached to a nonhistoric bridge crossing any scenic waterway, the conduits shall be painted to match the color of the bridge.

AGRICULTURE AND FORESTRY RESOURCES

No resource-specific environmental protection measures have been identified for agricultural and forestry resources. Implementation of Environmental Protection Measure 1, "Restrict Construction Activities to Disturbed Areas" and Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies," would ensure that no significant impacts on agriculture and forestry resources, as described in Section 3.2, would result with implementation of the proposed project.

AIR QUALITY

The following environmental protection measures completely avoid or reduce to a less-than-significant level air quality impacts described in Section 3.3:

Environmental Protection Measure 3.3-1: Implement All Applicable Emissions Control Measures for Construction Equipment Operating within the San Joaquin Valley.

CVIN and its construction contractors shall implement all applicable emissions control measures for construction equipment, as required by law, whenever such equipment is operating within the San Joaquin Valley. The measures to be implemented shall include but not be limited to the following required control measures:

- Use alternative-fueled or catalyst-equipped diesel construction equipment.

- Minimize idling time (e.g., 10-minute maximum).
- Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use.
- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing construction activity during the peak hour of vehicular traffic on adjacent roadways.
- Implement activity management (e.g., rescheduling activities to reduce temporary and short-term effects). No more than one crew of each type of construction activity (trenching, drilling, fiber blowing, etc.) shall occur at the same time on a particular construction segment.
- Use the newest equipment available to try and maintain a Tier 1 fleet equipment average.
- Maintain records of any equipment operating within the San Joaquin Valley APCD. These records, to be maintained by the construction contractors, shall include equipment number and weekly hours of operation within the district. At the completion of proposed project construction, the total annual emissions for the project shall be calculated by or to the satisfaction of the San Joaquin Valley APCD and CVIN shall pay the applicable air quality mitigation fees.

Environmental Protection Measure 3.3-2: Implement All Applicable Dust Control Measures, as Required by the San Joaquin Valley Air Pollution Control District.

CVIN and its construction contractors shall comply with the San Joaquin Valley APCD's Regulation VIII, "Fugitive Dust PM_{10} Prohibitions," and implement all applicable control measures, as required by law. Regulation VIII contains but is not limited to the following required control measures:

- Prewater site sufficient to limit visible dust emissions (VDE) to 20% opacity.
- Phase work to reduce the amount of disturbed surface area at any one time.
- During active operations, apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity.
- During active operations, construct and maintain wind barriers sufficient to limit VDE to 20% opacity.
- During active operations, apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20% opacity and meet the conditions of a stabilized unpaved road surface.
- When handling bulk materials, apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity.
- When handling bulk material, construct and maintain wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity.
- When storing bulk materials, comply with the conditions for a stabilized surface as listed above.
- When storing bulk materials, cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action.

- When storing bulk materials, construct and maintain wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. If using fences or wind barriers, apply water or chemical/organic stabilizers/suppressants to limit VDE to 20% opacity or use a three-sided structure with a height at least equal to the height of the storage pile and with less than 50% porosity.

- Load all haul trucks such that the freeboard is not less than 6 inches when material is transported across any paved public access road sufficient to limit VDE to 20% opacity.

- Apply water to the top of the load sufficient to limit VDE to 20% opacity.

- Cover haul trucks with a tarp or other suitable cover.

- Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site.

- Prevent carryout and trackout, or immediately remove carryout and trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site.

- Clean up carryout and trackout by either manually sweeping and picking it up; operating a rotary brush or broom accompanied or preceded by sufficient wetting to limit VDE to 20% opacity; operating a PM_{10}-efficient street sweeper that has a pickup efficiency of at least 80%; or flushing with water, if curbs or gutters are not present, and where the use of water would not result as a source of trackout material or result in adverse effects on stormwater drainage systems or violate any National Pollutant Discharge Elimination System (NPDES) permit program.

Environmental Protection Measure 3.3-3: Reduce Emissions of Naturally Occurring Asbestos Dust.

CVIN and/or its construction contractor(s) shall implement the following measures during construction within one-half mile of state-identified naturally occurring asbestos (NOA) areas:

- It is assumed that any segment crossing within one-half mile of a state-identified NOA area is operating in serpentine, or ultramafic rock. Therefore, CVIN and/or its contractor(s) shall comply with all requirements outlined in the California Air Resources Board (ARB) Asbestos Air Toxic Control Measures for Construction, Grading, Quarrying, and Surface Mining Operations to reduce potential effects from exposure to NOA to the maximum extent feasible. These requirements shall include:

    - preparation and implementation of an asbestos dust mitigation plan, which must be approved by the local air district before construction begins, and must be implemented at the beginning of construction and grading activities and maintained throughout such activities; and

    - implementation of an asbestos health and safety program (as required under Title 8, Section 1529, "Asbestos," of the CCR [i.e., 8 CCR Section 1529]).

- The asbestos dust mitigation plan, per 17 CCR Sections 93105(e) (2) and 93105(e) (4), shall specify dust mitigation practices that are sufficient to ensure that no equipment or operation emits dust that is visible crossing property lines. The plan also shall include track-out prevention and control measures, control measures for disturbed surface area and storage piles that would remain inactive for more than 7 days, postconstruction stabilization, and asbestos monitoring, if required. Examples of these may include but shall not be limited to surface wetting, surface covering, surface crusting, application of chemical dust suppressants or stabilizers, installation of wind barriers, construction area speed limits, truck spillage controls, and establishment of vegetative covers. In addition, the asbestos dust mitigation plan shall include recordkeeping and reporting requirements that document the results of any air monitoring, geologic evaluation, and asbestos bulk sampling.

The asbestos health and safety program shall be implemented if permissible exposure limits for airborne asbestos are found to be exceeded within the project area. Implementation shall include applicable construction employee protection measures as defined under 8 CCR Section 1529(g) and any additional measures required by the California Occupational Safety and Health Administration to reduce exposure of construction employees to airborne asbestos.

BIOLOGICAL RESOURCES

The following environmental protection measures completely avoid or reduce to a less-than-significant level biological resources impacts described in Section 3.4:

Environmental Protection Measure 3.4-1: Restrict Project Activity to Highly Disturbed Areas That Do Not Support Sensitive Biological Resources.

All project activity shall occur as close as is practical to the edge of the paved road surface, or within the paved road where necessary if impacts to sensitive biological resources cannot otherwise be avoided. For the purpose of this analysis, sensitive biological resources include waters of the State or of the United States, and riparian and aquatic vegetation associated with these waters; native plant communities; special-status plant and wildlife species listed in Table 3.4-2 or habitat for these species; and nesting migratory birds. No project activity shall be allowed outside of the graded and routinely maintained road right-of-way unless the area has been confirmed by an agency-approved, qualified biologist as devoid of any sensitive biological resources and the potential for direct and indirect impacts on sensitive biological resources has been determined to be negligible. To ensure that sensitive environmental resources are adequately protected or are avoided, the locations of staging areas shall be established in consultation with agency-approved, qualified biologists and shall be subject to all environmental protection measures identified in this IS/ND.

Environmental Protection Measure 3.4-2: Monitor and Report on Implementation of Environmental Protection Measures for Biological Resources.

The MRP shall describe in detail the implementation and monitoring of all biological resource environmental protection measures that are part of the CPUC Conditions of Approval. The MRP shall also include maps at an appropriate scale depicting all sensitive biological resources occurring within 250 feet of the route alignment (i.e., 500-foot wide swath with the fiber optic cable route as the centerline); a discussion of the qualifications, authority, and duties of the qualified biologists who shall serve as agency-approved biological monitors during construction; a discussion of the avoidance and minimization approaches required for protection of sensitive biological resources; and all terms and conditions required by local, state, or federal agencies to satisfy applicable laws, ordinances, regulations, and policies relating to protection of biological resources.

The MRP shall describe the best management practices and environmental protection measures to be implemented to avoid impacts to biological resources. The avoidance measures may include, but are not limited to, adjusting the location or timing of construction, implementing alternative cable installation methods such as directional drilling, stringing cables on bridges or power lines, or installing cables underneath pavement. The MRP's avoidance and minimization measures shall achieve the performance standard of no significant impacts to sensitive biological resources. Specifically, with implementation of the environmental protection measures described in this IS/ND, construction activities shall have no direct impacts and negligible indirect impacts to:

- upland habitats such as annual grassland, woodlands (blue oak, blue oak-foothill pine, montane hardwood, montane hardwood conifer, ponderosa pine and Sierran mixed conifer), elderberry savanna, serpentine or gabbro plant communities, or Ione chaparral;

- riparian and aquatic habitat such as riparian woodland, vernal pools and vernal pool grassland, seasonal freshwater marsh, stockponds, irrigation canals, and alkali wetlands;

- any of the special-status species listed in Table 3.4-1 or habitat for these species, or
- nesting migratory birds.

Environmental Protection Measure 3.4-3: Identify Environmentally Sensitive Areas on Construction Plans and Specifications.

Construction plans and specifications for each segment of the fiber optic route shall identify the location of sensitive biological resources as Environmentally Sensitive Areas (ESAs). If sensitive biological resources occur within the roadway right-of-way and could potentially be impacted by construction activities, orange construction fencing shall be installed around the ESAs in addition to identifying these areas on plans and specifications. The locations of ESA fencing shall be established in the field by the agency-approved biologist. If the agency-approved biologist has determined that indirect construction impacts could occur to sensitive biological resources near but not within the right-of-way, ESA fencing shall be established to protect the area deemed necessary by the agency-approved biologist to avoid such indirect impacts. Surface-disturbing activities shall not begin until the ESAs are delineated on the ground with the fencing, and the fencing shall remain in place for the duration of construction within each segment. No vehicles, heavy equipment, vegetation removal, storage of material, or surface-disturbing activities or other construction shall be permitted within the ESAs.

Environmental Protection Measures 3.4-4: Biological Monitors Shall Supervise All Construction Activities within 250 Feet of Sensitive Biological Resources.

Prior to site-mobilization and construction CVIN shall submit to the California Department of Fish and Game (DFG) and U.S. Fish and Wildlife Service (USFWS) for review and approval the resumes of biologists who shall serve as biological monitors for the project. An agency-approved biologist shall be present at the construction site during any construction activities occurring within 250 feet of sensitive biological resources. An agency-approved biologist shall monitor site mobilization and construction related ground disturbance such as plowing, trenching or directional drilling, and shall work with the CVIN's construction/operation manager to ensure conformance with environmental protection measures for biological resources. The agency-approved biologists shall maintain a log of daily monitoring notes that can be summarized and transmitted to USFWS and DFG upon request.

Environmental Protection Measure 3.4-5: Develop and Implement a Worker Environmental Awareness Program for Protection of Biological Resources.

CVIN shall develop and implement a Worker Environmental Awareness Program to educate workers about the sensitive biological resources occurring in and near the project area. All field staff, including employees, contractors, and subcontractors who work on the project site during construction and operation, shall be required to participate in the Worker Environmental Awareness Program prior to beginning work on the project. The Worker Environmental Awareness Program shall be specific to the appropriate segment of the route, and shall inform workers about the locations and types of sensitive biological resources potentially occurring in or near the route, and about the protection measures that must be implemented to avoid impacts to these resources.

Environmental Protection Measure 3.4-6: Implement all Terms and Conditions of Agreements and Permits

CVIN shall consult all appropriate local, state and federal agencies, including DFG, USFWS, U.S. Army Corps of Engineers (USACE), and Regional Water Quality Control Board (RWQCB) to determine which agreements, permits and certifications might be required for project construction. These permits may include a USACE Section 404 Nationwide Permit and Section 10 Rivers and Harbors Act Permit, Central Valley RWQCB Section 401 Water Quality Certification, and DFG Section 1602 Streambed Alteration Agreement. The Conditions of Approval and MRP shall incorporate all terms and conditions required by local, state and federal permits, certifications or agreements.

Environmental Protection Measure 3.4-7: Avoid Effects on Aquatic Habitat, including Wetlands and Waters of the State and United States.

In addition to the environmental protection measures discussed in Section 2.6., "Hazards and Hazardous Materials," Section 3.9.1 "Storm Water Pollution Prevention Plans," Section 3.9-2, "Inadvertent Release (Frac-out) Contingency Plan for Directional Drilling," and Section 3.8-1 "Prepare and Implement a Spill Prevention Plan," the following measures shall be incorporated into the proposed project to avoid direct and indirect impacts to waterways.

- The project shall be designed and constructed to achieve no net loss of area, functions or values of aquatic habitat, including wetlands and waters of the State and United States.

- At ephemeral drainages where bore pit excavations are dug into a soil or rock surface, the bore pit excavations shall be located at least 20 feet from boundary of jurisdictional waters of the State or of the United States. DFG may establish a greater setback at certain drainages if site conditions warrant, as described in any Streambed Alteration Agreement issued for this project. A lesser setback may be approved by the agency-approved biologist and DFG if it can be demonstrated that the bore pit would be excavated in competent ground with no material risk of caving that could disturb jurisdictional waters, and that other appropriate precautions are also in place to prevent surface disturbance to the drainage and to downstream water quality.

- Where grading or excavation work occurs within 20 feet of jurisdictional waters of the State or of the United States, grading and excavation work shall be monitored full-time by an agency-approved biologist to assure that there is no surface disturbance to jurisdictional waters or impacts to downstream water quality. DFG may establish additional conditions to protect waters of the State and water quality, as described in any Streambed Alteration Agreement issued for this project.

- All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The agency-approved biologist shall be informed of any hazardous spills immediately as directed in Section 2.6, "Spill Prevention Plan." Hazardous spills shall be cleaned up immediately and the contaminated soil properly disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.

- Because fuels, lubricants, and solvents may be stored in staging areas, all staging areas shall be located at least 150 feet away from streams, drainages and wetlands.

- Standard erosion control measures shall be implemented for all phases of construction where sediment run-off from exposed slopes threatens to enter waterways. Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream. All disturbed soils and roads within the project site shall be stabilized to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) with slopes toward drainages shall be stabilized to reduce erosion potential.

- Silt fencing shall be installed between construction activities and any drainages before construction activities commencing within 250 feet of aquatic habitat, including vernal pool grasslands, and shall remain in place until construction is completed within each segment. The agency-approved biologist shall inspect the placement of silt fencing and ESA fencing prior to ground-disturbing activities within 250 feet of aquatic habitat.

CULTURAL RESOURCES

The following environmental protection measures completely avoid or reduce to a less-than-significant level cultural resources impacts described in Section 3.5:

Environmental Protection Measure 3.5-1: Implement Specific Measures for Full Avoidance of Adverse Effects on Each Cultural Resource Potentially Eligible for Listing in the National Register of Historic Places or the California Register of Historical Resources.

Specific avoidance methods that were developed by a qualified archaeologist who meets the requirements of the *Secretary of the Interior's Standards for Archaeology and Historic Preservation* and which are identified in the cultural resources inventory report for the proposed project shall be implemented during project final design and during construction. The identified specific measures shall result in full avoidance of adverse impacts on each cultural resource that is potentially eligible for listing in the NRHP or the CRHR. Identified measures include delineation of a specific rerouted alignment that avoids surface and subsurface manifestations of cultural resource sites; identification of specific sides of roads or other specified installation locations, and identification of specific lengths and depths for directional drilling (boring) underneath cultural resource sites. In situations where a historical bridge cannot be avoided by use of directional drilling below the bridge, the conduit shall be attached to the underside of the bridge, provided that the conduit is not visible from the top or sides of the bridge. The avoidance strategies shall be reviewed and approved by NTIA; CPUC; federal, state, and local jurisdictions where subject cultural resources are identified; and the State Historic Preservation Officer (SHPO). All recommended measures shall be implemented by CVIN.

Environmental Protection Measure 3.5-2: Design Cabinet Facilities to Avoid Adverse Effects on the Historical Setting.

Specific avoidance methods for each historical building that is potentially eligible for listing in the NRHP or the CRHR shall be developed by a qualified architectural historian who meets the requirements of the *Secretary of the Interior's Standards for Architectural Historian* for the proposed project shall be implemented during project final design and during construction. The identified specific measures shall result in full avoidance of adverse impacts on each historical building that is potentially eligible for listing in the NRHP or the CRHR and that is located adjacent to proposed cabinet locations Recommended measures may include the use of visual screening such as vegetation or placement of cabinets in low-visibility areas or other techniques to avoid or reduce the visual impact of the cabinet. Such measures need to be identified only where cabinets would be installed adjacent to buildings that are listed in or are potentially eligible for listing in the NRHP or the CRHR and where the cabinet installation would result in substantial adverse impacts on the historical setting of the building.

Recommended avoidance strategies shall be documented in the cultural resources inventory report currently being prepared. The avoidance strategies shall be reviewed and approved by NTIA; CPUC; federal, state, and local jurisdictions in which subject cultural resources are identified; and the SHPO.

Environmental Protection Measure 3.5-3: Prepare and Implement an Archaeological Monitoring Plan.

Before the start of construction under the proposed project and any ground disturbance, CVIN shall retain the services of a qualified archaeologist who meets the requirements of the *Secretary of the Interior's Standards for Archaeology and Historic Preservation* and is familiar with local conditions to prepare an archaeological monitoring plan (AMP).

The AMP shall require that a qualified archaeologist be present for all surface excavation activity that occurs in areas of potential cultural sensitivity. The AMP shall define how archaeological monitoring would be conducted and the protocol to be followed in the event that significant resources are discovered during monitoring. Areas of potential paleontological resource sensitivity shall similarly be assessed in accordance with Environmental Protection Measure 3.5-6 which also describes the procedures to be followed in the event of discovery of paleontological resources.

The AMP shall specify that before construction or ground-disturbing activities associated with the proposed project begin, all construction personnel shall be alerted to the possibility of buried cultural resources anywhere along the project route. Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, human remains, paleontological resources (see Environmental Protection Measure 3.5-6 below) or

architectural remains be encountered during project construction activity, work shall be suspended within 100 feet of the excavation, until the qualified archaeologist has inspected and evaluated the discovery. NTIA and CPUC shall be notified immediately of the discovery. Once approved by NTIA and CPUC, work may proceed on other portions of the construction segment(s) while mitigation of impacts on archaeological resources is implemented. If a resource that is potentially eligible for listing in the NRHP or the CRHR is identified, the provisions of Environmental Protection Measure 3.5-1, "Implement Specific Measures for Full Avoidance of Adverse Effects on Each Cultural Resource Potentially Eligible for Listing in the National Register of Historic Places or the California Register of Historical Resources;" Environmental Protection Measure 3.5-3, "Strictly Follow Procedures for the Discovery of Unanticipated Cultural Resources, and If Discovered, Immediately Cease Construction Activities, Notify the National Telecommunications Information Administration and California Public Utilities Commission, and Implement all Appropriate Avoidance Measures or Other Appropriate Mitigation in Consultation with the Lead Agencies and State Historic Preservation Officer" and Environmental Protection Measure 3.5-6, "Strictly Follow Procedures for the Discovery of Unanticipated Human Remains, and If Discovered, Immediately Cease Construction Activities, Notify the National Telecommunications Information Administration, California Public Utilities Commission, and the Affected County Coroner, and Implement All Appropriate Mitigation in Consultation with the Native American Heritage Commission, If the Remains are Determined to be Native American" shall be implemented.

A draft version of the AMP shall be submitted to NTIA and CPUC for review and comment. Once approved by NTIA and CPUC, a final version of the report shall be submitted to NTIA and CPUC. CVIN shall adhere to and implement all recommendations included in the AMP.

Environmental Protection Measure 3.5-4: Strictly Follow Procedures for the Discovery of Unanticipated Cultural Resources, and If Discovered, Immediately Cease Construction Activities, Notify the National Telecommunications Information Administration and California Public Utilities Commission, and Implement all Appropriate Avoidance Measures or Other Appropriate Mitigation in Consultation with the Lead Agencies and State Historic Preservation Officer.

If any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, all work within 100 feet of the resources shall be halted and CVIN shall notify NTIA and CPUC and shall consult with a qualified archaeologist to assess the significance of the find. If any find is determined to be significant, representatives of CVIN, NTIA, CPUC, and the archaeologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation, with the ultimate determination to be made by NTIA and CPUC in consultation with the SHPO. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by an archaeologist according to current professional standards, as necessary.

In considering any suggested mitigation proposed by the archaeologist to mitigate impacts on historical resources or unique archaeological resources, NTIA and CPUC shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) shall be implemented in consultation with the SHPO. Work may proceed on other parts of the construction segment(s) while mitigation for historical resources or unique archaeological resources is carried out.

If NTIA and CPUC, in consultation with the archaeologist, determine that a significant archaeological resource is present and that the resource could be adversely affected by the proposed project, NTIA and CPUC shall require CVIN to:

- redesign the project to avoid any adverse impact on the significant archaeological resource, if feasible; or
- implement an archeological data recovery program (ADRP) (unless the archaeologist determines that the archeological resource is of greater interpretive use than research significance and that interpretive use of the

resource is feasible). If the circumstances warrant an ADRP, such a program shall be conducted. The archaeologist, NTIA, and CPUC shall meet and consult to determine the scope of the ADRP. The archaeologist shall prepare a draft plan describing the ADRP that shall be submitted to NTIA and CPUC for review and approval and for use in consultation with the SHPO. The plan shall identify how the ADRP would preserve the significant information the archaeological resource is expected to contain. That is, the plan describing the ADRP shall identify the scientific/historical research questions that are applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, shall be limited to the portions of the historical property that could be adversely affected by the proposed project.

Environmental Protection Measure 3.5-5: Strictly Follow Procedures for the Discovery of Unanticipated Human Remains, and If Discovered, Immediately Cease Construction Activities, Notify the National Telecommunications Information Administration, California Public Utilities Commission, and the Affected County Coroner, and Implement All Appropriate Mitigation in Consultation with the Native American Heritage Commission, If the Remains are Determined to be Native American.

If human remains are discovered during any phase of construction, work within 100 feet of the remains shall be suspended immediately and NTIA, CPUC, and the coroner for the county in which the remains are discovered shall be immediately notified. If the remains are determined by the County Coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. CVIN shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. CPUC shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in the State CEQA Guidelines (14 CCR Section 15064.5[e]; California PRC Section 5097.98). CVIN shall implement approved mitigation, which shall be verified by CPUC before construction activities may resume at the site where the remains were discovered.

If human remains of Native American origin are discovered on federal land during ground-disturbing activities, compliance with the Native American Graves Protection and Repatriation Act is required. This law specifies the procedures that agencies must follow when burials of Native American origin are discovered on federal land (43 Code of Federal Regulations [CFR] Part 10). These regulations include the following provisions, which shall be implemented by CVIN and by the federal agency with direct jurisdiction over the land (such as BLM) if human remains are discovered during construction activities:

- Notify the applicable county coroner or the sheriff.
- Notify the responsible federal agency, in writing.
- Cease all activity in the area of the discovery and protect the human remains.

Upon notification that the human remains have been discovered on federal land, the responsible federal agency shall:

- certify receipt of the notification,
- take steps to secure and protect the human remains,
- notify the Native American tribe or tribes likely to be culturally affiliated with the discovered human remains within one working day, and
- initiate consultation with the Native American tribe or tribes in accordance with regulations described in 43 CFR 10.5.

Environmental Protection Measure 3.5-6: Perform a Site-Specific Paleontological Resources Inventory and Assessment by Rock Unit and Conduct Construction Worker Personnel Education and Full-Time Monitoring in Paleontologically Sensitive Areas.

Before the start of earthmoving activities, CVIN shall retain the services of a qualified professional paleontologist (i.e., with at least a B.S. in Geology and an M.S. or higher in Paleontology, plus at least 2 years of field experience) who shall prepare a paleontological resources inventory and assessment by rock unit. This report shall include the following components:

- A report of any fossils observed during a reconnaissance-level field survey. (At CVIN's discretion, rather than having a separate field reconnaissance visit solely to evaluate paleontological resources, CVIN may retain the qualified professional archaeologist surveying for cultural resources to simultaneously conduct the survey for paleontological resources. If this option is selected, the archaeologist shall provide the results of the reconnaissance survey to the paleontologist retained by CVIN for inclusion in the paleontological resources inventory and assessment by rock unit.)

- The results of a records search of appropriate paleontological databases (at a minimum, the database at the University of California, Berkeley Museum of Paleontology [UCMP]) to determine whether any previously recorded fossil localities are located within or immediately adjacent to the proposed infrastructure facilities.

- A complete listing of all geologic formations within the alignment of the proposed infrastructure.

- A determination as to whether the geologic formations are of high or low paleontological sensitivity, and a discussion supporting the reasons why the sensitivity determinations were made.

Before the start of earthmoving activities within any geologic formations determined to be paleontologically sensitive, the qualified professional paleontologist retained by CVIN shall train all construction personnel involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered.

CVIN shall conduct full-time monitoring during earthmoving activities in the paleontologically sensitive rock formations identified during the field reconnaissance and documented in the report. (At CVIN's discretion, rather than having both a paleontologist and an archaeologist present in locations that require monitoring, CVIN may have a qualified archaeologist monitor for both resources simultaneously.)

Environmental Protection Measure 3.5-7: Stop Work If Paleontological Resources are Encountered and Prepare and Implement a Recovery Plan.

If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify CVIN, NTIA, CPUC, BLM (if on BLM lands), and the planning department of the relevant county or city where the work is occurring. CVIN shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1996). The recovery plan may include but is not limited to a site-specific field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the lead agencies to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

GEOLOGY AND SOILS

The following environmental protection measure completely avoids or reduces to a less-than-significant level geology and soils impacts described in Section 3.6:

Environmental Protection Measure 3.9-1: Prepare and Implement Storm Water Pollution Prevention Plans.

See the text of this environmental protection measure in Section 2.6, "Hydrology and Water Quality."

GREENHOUSE GAS EMISSIONS

The following environmental protection measure completely avoids or reduces to a less-than-significant level GHG emissions impacts described in Section 3.7:

Environmental Protection Measure 3.7-1: Reduce Greenhouse Gas Emissions from Construction Equipment.

CVIN and its construction contractors shall implement the following control measures, as required by law:

- Improve fuel efficiency from construction equipment:
  - Minimize idling time by either shutting equipment off when not in use or reducing idling time to no more than 3 minutes. (A 5-minute limit is required by the state airborne toxics control measure [13 CCR Sections 2449(d)(3) and 2485].) Post clear signage at site entrances that explains this requirement to workers.
  - Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
  - Train equipment operators in proper use of equipment.
  - Use properly sized equipment for tasks.
  - Use equipment with new technologies (repowered engines, electric drive trains).
- Use trucks equipped with on-road engines for on-site material hauling (if determined to be less emissive than the off-road engines).
- Use alternative fuels such as propane or solar, or electrical power, for generators at construction sites.
- Use an ARB-approved low-carbon fuel for construction equipment. (Oxides of nitrogen [NO_X] emissions from the use of low-carbon fuel must be reviewed and increases mitigated.)
- Minimize the amount of concrete for paved surfaces or use a low-carbon concrete option.
- Use SmartWay certified trucks for deliveries and equipment transport.
- Develop a plan to efficiently use water for adequate dust control.

HAZARDS AND HAZARDOUS MATERIALS

The following environmental protection measures completely avoid or reduce to a less-than-significant level hazards and hazardous materials impacts described in Section 3.8:

Environmental Protection Measure 3.8-1: Prepare and Implement a Spill Prevention Plan.

CVIN shall prepare a spill prevention plan to be implemented in each staging area. Construction contractors and workers shall receive written instructions and training on the plan, which is intended to reduce the potential risk of

accidental spills in construction areas along the proposed route and at cabinet sites. The spill prevention plan for each staging area shall include the following:

- Requirements pertaining to periodic maintenance and refueling of equipment used for construction. The following specific requirements shall be included in the spill preparation plan:
    - To reduce the potential for contamination by spills, no refueling, storage, servicing, or maintenance of equipment shall take place within 150 feet of drainages, sensitive waterways, or other sensitive environmental resources.
    - No construction equipment shall be refueled or serviced without absorbent material or drip pans underneath to contain spilled fuel.
    - Any fluids drained from the machinery during servicing shall be collected in leakproof containers and taken to an appropriate disposal or recycling facility.
    - Under no circumstances shall contaminated soils be added to a spoils pile.
    - All equipment wash-down activities shall be conducted at least 150 feet away from sensitive environmental resources.
- A hazardous substance control and emergency response plan addressing preparations for quick and safe cleanup of accidental spills. The plan shall prescribe procedures for handling hazardous materials to reduce the potential for a spill during construction and shall include an emergency response program. The plan shall identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, would be permitted.
- An environmental training and monitoring program to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and applicable Best Management Practices (BMPs), to all construction and operations personnel. A monitoring program shall be implemented to ensure that the plans are followed during construction.

Environmental Protection Measure 3.8-2: Conduct Construction Soil Sampling and Testing If Soil Contamination Is Suspected.

Soil sampling shall be conducted in the project footprint, as needed, before construction begins. Soil information shall be provided to construction crews to inform them about soil conditions and potential hazards. If hazardous substances are unexpectedly encountered during trenching, grading, or excavating work, work shall be stopped until the material is properly characterized and appropriate measures are taken to protect human health and the environment. If excavation of hazardous materials is required, the materials shall be handled, transported, and disposed of in accordance with federal, state, and local regulations.

Environmental Protection Measure 3.8-3: Conduct Groundwater Sampling and Testing If Suspected Contaminated Groundwater Is Encountered during Construction.

If suspected contaminated groundwater is encountered in the construction areas, samples shall be collected and submitted for analysis of petroleum hydrocarbons, metals, volatile organic compounds, and semivolatile organic compounds. If necessary, groundwater shall be collected during construction, contained, and disposed of in accordance with all applicable regulations.

Environmental Protection Measure 3.8-4: Prepare a Health and Safety Plan.

CVIN shall prepare a health and safety plan that addresses emergency medical services to be provided in case of an emergency. The plan shall list procedures, specific emergency response, and evacuation measures to be followed during emergencies. This manual shall be distributed by the construction contractors to all workers before the start of construction and during operation of the proposed project. Maps describing locations of towers, poles, and access roads shall be provided to emergency personnel to ensure proper emergency response to all parts of the proposed route and cabinet sites.

Environmental Protection Measure 3.8-5: Develop and Implement a Fire Risk Management Plan.

A fire risk management plan shall be implemented that addresses fire-suppression equipment and procedures to be used during construction and training of construction and maintenance crews. Additionally, fire suppression equipment and materials shall be kept adjacent to all work areas and in staging areas, and shall be clearly marked. Detailed information for responding to fires shall be provided in the proposed project's fire risk management plan. Information contained in the plan and locations of fire suppression materials and equipment shall be included as part of the employee environmental training addressed in Environmental Protection Measure 3.8-1, "Prepare and Implement a Spill Prevention Plan."

HYDROLOGY AND WATER QUALITY

The following environmental protection measures completely avoid or reduce to a less-than-significant level hydrology and water quality impacts described in Section 3.9:

Environmental Protection Measure 3.9-1: Prepare and Implement Storm Water Pollution Prevention Plans.

Storm water pollution prevention plans (SWPPPs) shall be prepared and implemented to protect water quality. The SWPPPs shall identify and specify the activities that might cause discharge of construction-related contaminants, including sediment, to major and localized receiving waters (e.g., culverts, ditches, swales) during storms, and the BMPs that would be employed to control pollutant discharges. The SWPPPs shall include a sediment and erosion control plan that complies with county and city grading and excavation requirements. The plan's BMPs shall include measures to control erosion, stream sedimentation, dust, and soil mass movement, and design provisions for stormwater management systems to prevent the degradation of water quality related to stormwater runoff and soil erosion from the proposed project and minimize increases in turbidity in receiving waters.

BMP designations shall be based on those used by the California Stormwater Quality Association handbook of construction BMPs (CASQA 2009). BMPs may include but shall not be limited to:

- **Scheduling—**Proper scheduling shall be used to assist in identifying ways to minimize disturbed areas, thus allowing for a reduction in the active project area requiring protection and minimizing the length of time that disturbed soils are exposed to erosive processes.

- **Preservation of Existing Vegetation—**Existing vegetation shall be preserved to the maximum extent practicable to facilitate protection of surfaces from erosion and provide sediment control benefits. Sensitive areas such as those defined in Section 3.4, "Biological Resources," shall also be clearly identified on construction drawings and protected.

- **Hydraulic Mulch, Straw Mulch, and Wood Mulching—**Various mulches shall be used for temporary soil stabilization on surfaces with little or no slope.

- **Geotextiles, Plastic Covers, and Erosion Control Blankets/Mats—**Geotextiles, plastic covers, and erosion control blankets/mats shall be used for erosion control on flat or, usually, sloped surfaces, channels, and stockpiles.

- **Silt Fence—**A silt fence consisting of fabric shall be used as a temporary sediment barrier to retain sediment from small disturbed areas by reducing the velocity of sheet flows.

- **Gravel Bag Berm and Sand/Gravel Bag Barrier—**A gravel bag berm and sand/gravel bag barrier (gravel-filled fabric bags) shall be used as a temporary sediment barrier to retain sediment from small disturbed areas by reducing the velocity of sheet flows.

- **Storm Drain Inlet Protection—**Inlet protection devices shall be used to detain or filter sediment-laden runoff to facilitate the removal of sediment from waters before discharge.

- **Stabilized Construction Entrance/Exit—**A graveled area or pad shall be built at any point where vehicles enter and leave a construction site. This BMP shall provide a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, to control erosion from surface runoff, and to help control dust.

- **Runoff Control Measures—**Runoff control measures shall be implemented as necessary during construction. Measures may include graded surfaces to redirect sheet flow, diversion dikes, or berms that force sheet flow around a protected area, and stormwater conveyances (swales, channels, gutters, drains, sewers) that intercept, collect, and redirect runoff. Diversions can be either temporary or permanent. Construction of temporary diversions involves excavating a channel and placing the spoil in a dike on the downgradient side of the channel, and placing gravel in a ridge below an excavated swale. Permanent diversions, constructed of more permanent materials, may be used to divide a site into specific drainage areas, sized to capture and carry flows from a storm event of a specific magnitude. A water bar is a specific kind of runoff diversion that is constructed diagonally at intervals across a linear sloping surface such as a road or right-of-way that is subject to erosion. Water bars are meant to interrupt accumulation of erosive volumes of water through their periodic placement down the slope, and divert the resulting segments of flow into adjacent undisturbed areas for dissipation.

- **Groundwater Extracted during Construction—**Dewatering shall be discharged to land if feasible. If land disposal is not feasible, the construction contractor(s) shall obtain an NPDES permit for construction dewatering activity and comply with all associated requirements, including maximum sediment loads and prohibition of toxic substance discharges.

- **Personnel Training Requirements and Procedures—**Construction personnel shall be trained to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPPs.

- **Appropriate Personnel—**The individuals responsible for supervisory duties related to SWPPP implementation and BMP maintenance shall be specifically designated by CVIN and/or its construction contractors.

All construction contractors shall retain a copy of the approved SWPPPs on the construction site. Clearing and grading shall be limited to the minimum necessary to complete the proposed project and shall be confined to the established rights-of-way of roads and state highways. Boundaries of clearing shall be clearly marked. Under the sediment and erosion control plan, the project area shall be stabilized when construction is complete, and postconstruction BMPs and monitoring shall be implemented to ensure that sediment from disturbed areas would not mobilize. Before allowing construction to begin, CVIN shall verify that a notice of intent and SWPPPs have been filed. CVIN or its designated agent shall routinely inspect the active project site to verify that the BMPs specified in the SWPPPs were properly implemented and maintained. Inspection reports shall be included in

project files. Project staff and contractors shall immediately stop any activities that resulted in noncompliance and shall implement appropriate corrective actions.

Environmental Protection Measure 3.9-2: Prepare and Implement an Inadvertent Release (Frac-out) Contingency Plan for Directional Drilling (Boring) under Sensitive Drainages and Waterways.

At all streams that provide important habitat, contribute to water quality, or support sensitive or listed aquatic species, the conduit shall be installed by either conducting directional drilling under the drainage or attaching the conduit to a bridge crossing the drainage.

CVIN shall prepare and implement an inadvertent release (frac-out) contingency plan that describes the procedures to be used and equipment and supplies that shall be available on-site during directional drilling at drainages or other sensitive wetlands. The primary purpose of the inadvertent release (frac-out) contingency plan is to identify methods and procedures to be used to prevent, limit, and contain seepage of bentonite (a fine nontoxic clay used to lubricate the bore during directional drilling) or other similar material into waters or wetlands. Each construction contractor undertaking directional drilling under streams and wetlands shall become familiar with and implement the inadvertent release (frac-out) contingency plan.

The inadvertent release (frac-out) contingency plan shall be prepared and implemented before any directional drilling occurs. The plan shall include measures to:

- minimize the potential for a frac-out;
- provide for the timely detection of frac-outs;
- protect areas that are considered environmentally sensitive (streams, wetlands, other biological resources, cultural resources); and
- ensure an organized, timely, and "minimum-effect" response in the event of a frac-out and release of drilling mud.

The plan shall require that a geotechnical engineer or qualified geologist make recommendations regarding the suitability of the formations to be bored to minimize the potential for frac-out conditions. The frac-out plan shall be submitted by CVIN to CPUC for review and approval, and shall be maintained on-site during drilling activities. Spill cleanup material shall be maintained with the drilling crews.

LAND USE AND PLANNING

No resource-specific environmental protection measures have been developed for land use and planning. Implementation of Environmental Protection Measure 1, "Restrict Construction Activities to Disturbed Areas" and Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies," are required for land use and planning to ensure that no significant impacts would result with implementation of the proposed project, as described in Section 3.10.

MINERAL RESOURCES

No resource-specific environmental protection measures have been identified for mineral resources. Implementation of Environmental Protection Measure 1, "Restrict Construction Activities to Disturbed Areas" is required for mineral resources to ensure that no significant impacts would result with implementation of the proposed project, as described in Section 3.11.

NOISE

The following environmental protection measure completely avoids or reduces to a less-than-significant level noise impacts described in Section 3.12:

Environmental Protection Measure 3.12-1: Reduce Noise Levels from On-Site Construction Equipment.

CVIN and/or its construction contractor(s) shall implement the following environmental protection measures during construction to reduce temporary, short-term noise levels from on-site construction equipment:

- Construction equipment shall be properly maintained and equipped with noise control, such as mufflers, in accordance with manufacturers' specifications.
- Construction activities shall be limited to the hours outlined in Table 3.12-1 in Section 3.12, "Noise;" or for those jurisdictions that do not currently have an adopted restriction governing construction operations, activities shall be limited to 7 a.m. to 7 p.m. Monday through Friday and 8 a.m. to 5 p.m. Saturday, during which such activities are exempt from noise levels identified in applicable standards. Emergency work to protect life or property is exempt from these hourly limits and applicable noise standards.
- If construction activities must run past exempted hours, any nearby sensitive receptors (located less than 1,300 feet from those activities) shall be given at least 48 hours notice of such activities by CVIN or its contractor(s). Before initiating construction activities during exempted hours, CVIN or its contractor(s) shall prepare a plan demonstrating how appropriate noise-reducing measures (such as erecting temporary sound barriers) would be implemented to maintain the applicable noise level standards. The plan shall be submitted to the governing agency of the area (such as the local county or city) for review and approval, and shall be implemented during all construction activities occurring outside of exempted hours.
- Construction equipment shall be arranged to minimize travel adjacent to noise-sensitive receptors and turned off during prolonged periods of nonuse.
- A disturbance coordinator shall be designated and the person's telephone number shall be conspicuously posted around the project site and supplied to noise-sensitive receptors. The disturbance coordinator shall receive all public complaints and be responsible for determining the cause of the complaint and implementing any feasible measures to alleviate the problem.
- Construction equipment shall be staged and construction employee parking shall be located in designated areas only.

POPULATION AND HOUSING

No environmental protection measures are required for population and housing because no impacts would result with implementation of the proposed project, as described in Section 3.13.

PUBLIC SERVICES

No environmental protection measures are required for public services because no impacts would result with implementation of the proposed project, as described in Section 3.14.

RECREATION

No resource-specific environmental protection measures have been identified for recreation. Implementation of Environmental Protection Measure 1, "Restrict Construction Activities to Disturbed Areas" and Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies," are required

for recreation to ensure that no significant impacts would result with implementation of the proposed project, as described in Section 3.15.

TRANSPORTATION/TRAFFIC

The following environmental protection measures completely avoid or reduce to a less-than-significant level transportation/traffic impacts described in Section 3.16:

Environmental Protection Measure 3.16-1: Prepare and Implement Traffic Control Plans.

The construction contractor(s), in coordination with local traffic regulatory agencies, the California Highway Patrol, Caltrans, and local emergency services, shall develop and implement a traffic control plan for project construction to reduce the effects of construction on roadway and highway systems throughout the construction period. The traffic control plans shall contain elements on detour routing, flagging, and measures to ensure emergency access through the construction area and to adjacent properties. Proposed lane closures during the a.m. and p.m. peak hours shall be minimized. Lane closures shall be limited to the immediate vicinity of the open trench. Pedestrian and bicycle access shall be rerouted around project sites at all times. During construction, the construction sites shall be secured to prevent pedestrian and bicyclists from entering the sites.

The traffic control plans shall be submitted for approval to the appropriate traffic regulatory agency, NTIA, and CPUC at least 60 days before construction, for each road encroachment where trenching or other work within roadways would be conducted. Traffic control plans shall be prepared and implemented for construction activities that would directly or indirectly disturb the local traffic flow at each roadway encroachment location.

Environmental Protection Measure 3.16-2: Notify Property Owners Concerning Blocked Driveways, Limit Hours of Disruption of Driveways, or Compensate Property Owners.

Access to all private roadways and driveways shall not be disrupted for more than 4 hours at a time. CVIN shall notify property owners of the roadways and driveways proposed to be blocked by construction activities at least 2 weeks before and again 48 hours before the access disruption. CVIN shall also provide alternate access or other compensation to private residences that are disrupted for more than 4 hours at a time, in accordance with an agreement developed between CVIN and the property owner.

Environmental Protection Measure 3.16-3: Reduce Potential Roadway Damage Resulting from Construction.

To reduce potential roadway damage effects, CVIN shall implement the following measures:

- Record views of the roadway and access roads on videotape before and after construction to document the existing and restored roadways.
- Make temporary repairs from roadway damage as necessary during construction.
- Repair any damaged roadway to its original condition immediately after construction has been completed.
- Coordinate with Caltrans or the local traffic regulatory agency, as applicable, to determine appropriate routes for truck travel before beginning construction.
- Coordinate with the local traffic regulatory agency regarding planned improvements near the facility to limit interference with the implementation of roadway improvements or trenching in nearly completed facilities before beginning construction.

UTILITIES AND SERVICE SYSTEMS

The following environmental protection measure completely avoids or reduces to a less-than-significant level utilities and service impacts described in Section 3.17:

Environmental Protection Measure 3.17-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage.

Before the start of construction, CVIN and its construction contractors shall implement the following measures:

- Notify appropriate agencies of any potential interruptions in service.
- Through field surveys and use of the Underground Service Alert services, verify the locations of buried utility lines in the area of construction. Clearly mark these locations on the construction specifications in advance of any drilling or trenching.
- Prepare an accidental-damage response plan that includes the chain-of-command rules for notifying authorities, a list of the appropriate actions and responsibilities to ensure the safety of workers and the public, and training of workers on appropriate actions and responsibilities in response to accidental damage to utility lines.

3 ENVIRONMENTAL CHECKLIST FORM

1. **Project title:** Central Valley Independent Network Fiber Optic Communications Network Project

2. **Lead agency name and address:**

   California Public Utilities Commission
   505 Van Ness Avenue
   San Francisco, CA 94102

3. **Contact person and phone number:**

   Andrew Barnsdale
   Transmission & Environmental Permitting
   (415) 703-3221

4. **Project location:** Amador, Calaveras, Colusa, El Dorado, Fresno, Kern, Kings, Madera, Merced, Nevada, Placer, San Joaquin, Stanislaus, Sutter, Tulare, Tuolumne, and Yuba Counties

5. **Project sponsor's name and address:**

   Central Valley Independent Network
   855 M Street, Suite 1120
   Fresno, CA 93723

   Corporation for Education Network Initiatives in California
   16700 Valley View Avenue #400
   La Mirada, CA 90638

6. **General plan designation:** See Section 3.10, "Land Use and Planning," of this initial study. The proposed project would traverse 17 California counties in the northern Sacramento Valley, northern Sierra Nevada foothills, and northern and southern San Joaquin Valleys.

7. **Zoning:** See Section 3.10, "Land Use and Planning," of this initial study. The proposed project would traverse 17 California counties in the northern Sacramento Valley, northern Sierra Nevada foothills, and northern and southern San Joaquin Valley.

8. **Description of project:** See Chapter 2, "Project Description," of this initial study.

9. **Surrounding land uses and setting: briefly describe the project's surroundings:** Urban, rural residential, industrial, commercial, and public use. See Section 3.10, "Land Use and Planning," of this initial study.

10. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):** See Chapter 1, "Introduction," of this initial study.

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

X We find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

We find that although the proposed project COULD have a significant effect on the environment, there WILL NOT be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

We find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

We find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Signature	Date

3.1 AESTHETICS

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I.	**Aesthetics. Would the project:**				
	a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
	b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
	c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
	d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

This section describes the aesthetic resources within or adjacent to the footprint of the proposed route and the potential impacts of the proposed project on those resources. Aesthetic resources are the natural and human-built features of a landscape that can be seen from viewpoints available to the public. Aesthetic resources are defined generally in terms of the proposed project's physical characteristics. The analysis focuses on any adverse changes to aesthetic resources. The study area for aesthetic resources is defined as the area in which resources that can be directly and indirectly affected by the construction and operation of the proposed project (i.e., client institutions, new fiber conduits, cabinets, and connections to existing cellular transmission towers). The distance range of about 0.25 mile from the proposed route and facilities for scenic viewing points is the area where change in landscape features would be most noticeable to viewers and where newly introduced features could begin to dominate the visual character of the landscape.

The main viewer group with views of project facilities would be motorists that would have fleeting glimpses of the proposed route while traveling along public roads and state highways. Residences are another viewer group along portions of the proposed route. The proposed route crosses natural open space areas, along existing roadways, that can be considered scenic by sensitive viewer groups or part of the route may be a state-designated scenic highway or local scenic roadway. No cabinets or other supporting facilities would be constructed within natural open space areas or scenic highways. The only new construction in these areas would be installation of new fiber conduit.

3.1.1 ENVIRONMENTAL SETTING

REGIONAL LANDSCAPE FEATURES

Each of the four regions mentioned in Chapter 2, "Project Description," includes a number of distinct types of landscapes spread over a large geographic area, many of which are common among the regions. Categories of typical landscape types are used to describe the aesthetic resources in the study area. The categories provide the baseline for existing conditions against which the analysis of potential impacts is evaluated for the proposed project.

The landscape categories discussed for the purposes of this analysis are urban suburban, traditional small urban community, rural agriculture, and natural open space and recreation.

Urban Suburban

This category consists of suburban areas of low-density development, modern single-family homes, setback yards, and tree and ornamental landscaping located around more densely developed metropolitan areas. This category also includes commercial; retail; office structures; institutional uses such as schools, libraries, and hospitals; and infrastructure such as roads, highways, overpasses, underpasses, rail lines, and utilities. Examples of this category are located in the cities of Yuba City, Marysville, Auburn, Stockton, Modesto, Turlock, Merced, Fresno, and Bakersfield.

Traditional Small Urban Community

This category is characterized by long-established rural communities—older buildings and historic architecture two to three stories high, with mature street trees—along existing highways or rail corridors. This category comprises historic or early post–World War II residential neighborhoods characterized by small to midsized houses on small lots with narrow streets and alleys and retail, commercial, and institutional mixed uses along arterial streets. Examples of this category are located in the cities of Colusa, Sutter, Linda, Colfax, Jackson, San Andreas, Sonora, Jamestown, Escalon, Denair, Atwater, Reedley, Dinuba, Visalia, Tulare, and Delano.

Rural Agricultural

Broad, open agricultural fields with or without fences; barns, silos, and other farm structures; and farm equipment, isolated farmhouses, and low-density rural commercial strips typify this category. The horizontal topography is characterized by crop fields, farm roads, fence and pole lines, and wind breaks punctuated by barns, houses, sheds, water towers, and other agriculture-related structures. This landscape is typical of unincorporated areas within the northern Sacramento Valley, northern San Joaquin Valley, and southern San Joaquin Valley regions.

Natural Open Space and Recreation

Undeveloped natural areas such as wildlife refuges, forested mountains, mountain lakes and streams, rolling hills with woodlands and grasslands, or forested ridges and valleys with lush vegetation form the dominant visual features of these landscapes. These landscapes are typically scenic with high aesthetic qualities. Examples of this category are located in the Sierra Nevada, the Sierra Nevada foothills, and the wildlife areas managed by the U.S. Fish and Wildlife Service (USFWS).

SCENIC HIGHWAYS

The study area contains a number of eligible State Scenic Highways. (See "Regulatory Setting," below, for a description of the California Scenic Highway Program.) No officially designated State Scenic Highways are near the proposed route. The following eligible State Scenic Highways would be directly and indirectly affected by the proposed project by construction either within, crossing, or adjacent to state highway rights-of-way:

- SR 4—Tuolumne County;
- SR 20—Nevada County;
- SR 49—Nevada, Placer, El Dorado, Amador, Calaveras, and Tuolumne Counties;
- SR 108—Tuolumne County;
- SR 174—Nevada County; and
- SR 198—Tulare County.

WILD AND SCENIC RIVERS

As discussed in Section 3.9, "Hydrology and Water Quality," the Tuolumne, Merced, and North Fork American Rivers are designated wild and scenic rivers in the project study area. The intersections of the aforementioned rivers and the proposed route occur in Tuolumne, Merced, and Sacramento Counties, respectively.

AESTHETIC RESOURCES BY REGION

Northern Sacramento Valley

In the northern Sacramento Valley of northern California, the proposed route stretches east-west, beginning in the city of Colusa in Colusa County and ending at the town of Smartsville in Yuba County. Landscape types in this region include traditional small urban communities, agricultural land, and natural open space landscape. This portion of the proposed route is mostly flat and travels to the south of the Sutter Buttes and to the north of Beale Air Force Base. A portion of the proposed route in Colusa County follows the Sacramento River. The proposed route also crosses over Butte Slough, the Feather River, the Yuba River, and numerous creeks and other drainages. The most dominant views from this region include expansive farmland, river views, views of the Sutter Buttes, and distant views of the Coast Ranges and the Sierra Nevada.

One California Department of Parks and Recreation (State Parks) property, the Colusa–Sacramento River State Recreation Area, is within this region. This park offers views of the Sacramento River and includes campsites, picnic sites, and a launch ramp for small boats.

Sierra Nevada Foothills

This region of the proposed route in northern California is generally oriented north-south within the Sierra Nevada foothills, stretching just to the north of the city of Colfax in Placer County in the north and ending at the foot of the Sierra Nevada foothills in eastern Stanislaus County. The predominant landscape feature in this region is forested land, with some traditional small urban communities and rural residences sprinkled along the proposed route. The elevation in this region ranges from about 1,000 to 5,000 feet above sea level. This portion of the proposed route crosses a number of waterways, including the North and South Forks of the American River, the Mokelumne River, the Stanislaus River and its tributaries, and numerous creeks and other drainages. The most notable views from along the proposed route within the Sierra Nevada foothills are of forested areas, natural open space, rivers and lakes, hills and mountains, and views of the Sacramento and San Joaquin Valleys described below.

In the Sierra Nevada foothills region, the proposed route would cross three State Parks properties: the Empire Mine State Historic Park, which is southeast of Grass Valley in Placer County; the Marshall Gold Discovery State Park, which is just north of Placerville in El Dorado County; and the Columbia Historic State Park, which is in the community of Columbia in Tuolumne County. Visitors to Empire Mine State Historic Park have views of forested hills and historic-era buildings aboveground and deep mineshafts underground. Views from Marshall Gold Discovery State Park include the American River, the river canyon where gold was discovered by James E. Marshall, and oak woodlands. Columbia Historic State Park is a historic district. Views from this historic park include preserved Gold Rush–era shops, restaurants, two hotels, and forested hills.

The Sierra Nevada foothills region is the only region along the proposed route that contains properties managed by BLM. (See "Regulatory Setting," below, for a description of BLM's responsibilities and regulations regarding aesthetic resources.) The proposed route would cross a total of 12 BLM properties. Seven BLM properties are in El Dorado County, three are in Amador County, and two are in Calaveras County. These BLM properties are within rights-of-way that pass through forested rolling hills, either in remote areas or near rural residences. Views from these properties include adjacent forestland, canyons, and winding roadways.

Northern San Joaquin Valley

The proposed route in the northern San Joaquin Valley region of central California begins at the foot of the Sierra Nevada foothills in eastern Stanislaus County, passes through the cities of Stockton and Modesto, and ends in Merced County. Landscape features in this portion of the proposed route include urban suburban, traditional small urban community, and rural agriculture. Waterways crossed by the proposed route in this region include the Stanislaus and Merced Rivers and numerous drainages. Views from this region are from a relatively flat area; thus, the most prominent visual features include expansive farmland, rivers, the Sierra Nevada to the east, and the Coast Ranges to the west, which includes Mount Diablo.

Southern San Joaquin Valley

The proposed route in the southern San Joaquin Valley is configured as a ring that centers at SR 99 northwest of Fresno. The elevation of land in this region is mostly flat. Landscape types in this region include urban suburban, traditional small urban community, and rural agricultural. Because the region is mostly flat, the most prominent views from this area are of expansive farmland, rivers, the Coast Ranges to the west, and the Sierra Nevada to the east, including Mount Whitney.

LIGHT AND GLARE

Light and glare along the proposed route is limited. The predominant sources of light and glare along the proposed route are from adjacent uses in more urbanized areas and from vehicles. The majority of nighttime lighting originates from street lighting, vehicle headlights, and outdoor security lighting. Glare along the proposed route is reflected during the daytime from vehicle windshields, glass on building fronts, and water bodies. Portions of the proposed route that traverse through undeveloped land have limited or no sources of light and glare in the vicinity. The predominant land uses include agriculture and activities associated with parkland.

3.1.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

U.S. Bureau of Land Management Visual Resource Management System

BLM oversees 264 million acres of public lands containing many outstanding scenic landscapes and is responsible for managing these public lands for multiple uses. Part of BLM's responsibility is to ensure that the scenic values of these public lands are considered before allowing uses that may have negative visual impacts. BLM accomplishes this through its Visual Resource Management (VRM) system. The VRM system involves inventorying scenic values and establishing management objectives for those values through the resource management planning process, and evaluating proposed activities to determine whether they conform with management objectives. BLM's VRM system includes the following direction (BLM 2010a):

- Different levels of scenic values require different levels of management. For example, management of an area with high scenic value might be focused on preserving the existing character of the landscape, and management of an area with little scenic value might allow for major modifications to the landscape. Determining how an area should be managed first requires an assessment of the area's scenic values.

- Assessing scenic values and determining visual impacts can be a subjective process. Objectivity and consistency can be greatly increased by using the basic design elements of form, line, color, and texture, which have often been used to describe and evaluate landscapes, to also describe proposed projects. Projects that repeat these design elements are usually in harmony with their surroundings; those that do not repeat these elements create contrast. By adjusting project designs so the elements are repeated, visual impacts can be minimized.

BLM's VRM system provides a way to identify and evaluate scenic values to determine the appropriate levels of management. It also provides a way to analyze potential visual impacts and apply visual design techniques to ensure that surface-disturbing activities harmonize with their surroundings. This regulation would apply to the proposed project because the proposed route crosses BLM lands and could affect visual resources.

WILD AND SCENIC RIVERS ACT

The National Wild and Scenic Rivers System was created by Congress in 1968 to designate and preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Wild and Scenic Rivers Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. The act encourages river management that crosses political boundaries and promotes public participation in developing goals to protect rivers. Rivers may be designated by Congress or, if certain requirements are met, the Secretary of the Interior. Each river is administered by either a federal or state agency. Designated segments need not include the entire river and may include tributaries. For federally administered rivers, the designated boundaries generally average one-quarter mile on either bank in the lower 48 states and one-half mile on rivers outside national parks in Alaska to protect river-related values. This act would apply to the proposed project because the proposed route would intersect and cross several known scenic rivers.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Scenic Highway Program

Caltrans manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to designated highways.

The California Scenic Highway Program was established by the California Legislature through Senate Bill (SB) 1467 in 1963. The applicable city or a county adopts a "Scenic Corridor Protection Program" for designated State Scenic Highways. This program requires land use and density of development to be regulated, land and site planning to be detailed, outdoor advertising to be controlled (including a ban on billboards), and design and appearance of structures and equipment to be given careful attention (Caltrans 2010). In addition, Caltrans design standards would apply to proposed improvements within a state highway. This Caltrans program would apply to the proposed project because the proposed route would occur on numerous state highways.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

ANALYSIS METHODOLOGY

Aesthetic impacts of the proposed project were evaluated for both construction and operation of the proposed project. Note that an assessment of aesthetic quality is a subjective matter, and viewers can disagree as to whether alteration in the visual character and appearance of a disturbed area would result in a significant, potentially significant, less than significant, or beneficial impact or would have no impact.

3.1.3 DISCUSSION

a) Have a substantial adverse effect on a scenic vista?

Less-Than-Significant Impact. Scenic vistas are areas visible from a particular vantage point, typically at higher elevations, that provide views of high visual quality. As discussed above under "Environmental Setting," elevations in the Sierra Nevada foothill region range from 1,000 to 5,000 feet above sea level. This region offers scenic views of forested areas, natural open space, rivers and lakes, hills and mountains, and long-range views of the Sacramento and San Joaquin Valleys. Thus, the proposed route could contain or cross through numerous scenic vistas.

Implementing the proposed project would not introduce any large-scale structures that would block scenic views from the proposed route rights-of-way. New and replacement fiber would be mostly underground, with the exception of fiber that could be attached to the underside of existing bridges. All conduit would be placed in existing disturbed roads and state highway rights-of-way. Areas disturbed within the existing road rights-of-way would be returned to their pre-project condition. Thus, new and replacement fiber would not permanently affect scenic vistas along the proposed route. Although there would be a temporary change that could affect a scenic vista during construction, the effects would not be considered adverse because construction would occur at a rate of 600–750 feet per day, which would result in a limited, temporary visual change related to construction activities. Staging and equipment lay-down areas would also result in a limited visual change and, as noted above in Section 2.5.6, would be established only in disturbed areas located on: private lands in existing contractor yards; existing commercial areas used for storing and maintaining equipment; previously cleared, graded, or paved areas; portions of the construction right-of-way; or level areas devoid of vegetation. In many instances, the sensitive viewers would be those traveling on roads and state highways. Views of the construction area would be fleeting and would last for a few seconds to a few minutes. For stationary sensitive viewers (i.e., residents), views could be disrupted for a few days.

New cabinets would be small and would be constructed at client institutions, which are developed properties that do not qualify as scenic vistas. Photographs of typical cabinet facilities are included in Appendix A.

For the reasons discussed above, the proposed project would have a less-than-significant impact on scenic vistas. No mitigation is required.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less-Than-Significant Impact. The study area contains a number of scenic resources such as scenic vistas containing trees, rock outcroppings, historic properties, waterways, and eligible State Scenic Highways. Trees and prominent rocks, such as rock outcroppings, would not be affected as part of the proposed project because the conduit would be placed in existing disturbed roads and state highway rights-of-way. These rights-of-way have been cleared of such resources. Cabinets would be installed at in previously developed portions of existing client institutions; therefore, trees and rock outcroppings would not be affected by installing cabinets.

As discussed above under "Environmental Setting," six eligible State Scenic Highways in seven counties would be affected by the proposed project by construction either within, crossing, or adjacent to the state highway rights-of-way. These segments are mostly located in Sierra Nevada foothill counties, plus one segment in the southern San Joaquin Valley region near the foot of the Sierra Nevada. These segments eligible to be State Scenic Highways are characterized by rolling hills at higher elevations with short-range views of forested areas and long-range views toward the west of the valley floor below. As detailed in discussion a) above, the proposed project would not introduce any permanent large-scale structures that would block scenic views from the proposed route rights-of-way, which includes eligible State Scenic Highways along the proposed route. Additionally, all

construction would take place in maintained and disturbed road rights-of-way that are clear of natural vegetation, trees, and rock outcroppings. Thus, trees, rock outcroppings, and scenic highways would not be affected.

As described in Section 3.5, "Cultural Resources," historical buildings at cabinet locations and historical bridges where the conduit may be attached would potentially be affected. The proposed route also crosses a number of waterways that could be considered or are designated as scenic, such as the Sacramento, Feather, American, Tuolumne, and Merced Rivers. New fiber could be attached to the underside of existing bridges that cross over these scenic waterways. The introduction or replacement of conduits along these bridges could detract from the high-quality scenic views of the waterways from nearby vantage points.

Incorporation of Environmental Protection Measure 3.1-1, "Implement Environmental Protection Measure 3.5-1 for Attaching Conduit to Historic Bridges, and if Rerouting or Directional Drilling (Boring) Is Infeasible, Paint Conduits Attached to Historic Bridges and Nonhistoric Bridges Crossing Scenic Waterways the Same Color as the Bridge," as part of the project and as a condition of project approval would either avoid or reduce to a less-than-significant level the potential aesthetic impacts on scenic waterways, historic bridges, and historical buildings adjacent to cabinet locations by ensuring that the visual character of the waterway, bridge, or building in question is not altered by implementation of the proposed project. Environmental Protection Measure 3.5-1, "Implement Specific Measures for Full Avoidance of Adverse Effects on Each Cultural Resource Potentially Eligible for Listing in the National Register of Historic Places or the California Register of Historical Resources," recommends measures to identify a specific rerouted alignment or directional drilling (boring) that avoids affecting a historic bridge. In situations where a historic bridge cannot be avoided by using directional drilling below the bridge, the conduit may be attached to the underside of the bridge, provided that the conduit is not visible from the top or sides of the bridge and that the conduit be the same color as the bridge thereby reducing the potential aesthetic impact to such an extent that the existing visual character of the bridge is largely unaltered. Incorporation of Environmental Protection Measure 3.1-1 as part of the project and as a condition of project approval would fully avoid or reduce any impacts to scenic resource because the sensitive segments of the proposed route would either be avoided or blend in with existing resources; therefore, this impact would be less than significant. No mitigation is required.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less-Than-Significant Impact. The proposed route traverses a variety of landscape categories, including urban suburban, traditional small urban community, rural agriculture, and natural open space and recreational areas. However, new and replacement fiber would be installed underground and would not permanently change the visual quality and character along the majority of the proposed route.

Construction under the proposed project would occur in 30 separate segments, some of which would be constructed simultaneously over a period of approximately 14 months. Any individual segment could have up to three separate construction crews working at any given time, with plowing, trenching, directional drilling, installation of new fiber conduits and cabinets, and connections to client institutions and cellular transmission towers occurring at the same time in different locations of the same segment. Project construction would occur at a pace of 600 to 750 feet per day. These construction activities and construction equipment, as well as equipment and materials in staging and equipment lay-down areas, would be visible from residences, businesses, vehicles traveling on roadways, educational facilities, and recreational users within parks and waterways along the proposed route. Vehicles and boaters passing the proposed route would have fleeting glimpses of the areas affected, and the overall character of areas next to roadways and waterways would not be substantially changed. Residences, businesses, educational facilities, and recreational users within parks, however, would remain near localized construction, staging, and equipment lay-down areas along the proposed route for longer periods than vehicles and boaters; thus, the visual quality would be slightly degraded for those viewer groups while they are in the area during construction.

The proposed project would result in new cabinet locations at client institutions. These cabinet areas would be 10-foot by 12-foot fenced areas placed within existing developed portions at client institutions along the proposed route. Adding these fenced-in cabinet locations would result in new, permanent aboveground features; however, these areas are small and would be generally consistent with existing aboveground utilities typical of educational facilities at client institutions. The effects on the visual quality of the proposed route would be limited to the construction period, resulting in a minimal temporary effect. In many instances, the sensitive viewers would be those traveling on roads and state highways. Given the pace of construction, views of the construction area would be fleeting and would last for a few seconds to a few minutes. For stationary sensitive viewers (i.e., residents), visual disruption could occur for a few days.

After completion of construction, the rights-of-way would be returned to their previous (pre-project) condition. Because these impacts would be short-term, temporary impacts, and no longer visible upon completion of construction, the proposed project would not be expected to substantially degrade the existing visual character along the proposed alignment. As such, this impact would be less than significant. No mitigation is required.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact. No lighting is proposed as part of the project during construction or operation, and no reflective materials would be used for aboveground infrastructure that could cause glare. Therefore, no impact would occur.

3.2 AGRICULTURE AND FORESTRY RESOURCES

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II.	**Agriculture and Forestry Resources.** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
	a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
	b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☒	☐
	c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☒	☐
	d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐
	e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☒	☐

This section describes agriculture and forestry resources within or adjacent to the footprint of the proposed route that could be directly or indirectly affected by the proposed project. For the purposes of this analysis, it is important to note that the proposed route would be located within the rights-of-way of existing roads and state highways, or at existing developed anchor or client institutions. These road and state highway rights-of-way are generally disturbed and numerous utilities have been previously placed within the rights-of-way. The proposed route would not be located on newly acquired or undeveloped lands. Therefore, the following discussion of the study area includes an overview of the aforementioned uses and resources, without detailed discussion of individual parcel owners or operators.

3.2.1 ENVIRONMENTAL SETTING

Agricultural Resources

Agricultural production is the dominant land use in the rural portions of both the northern Sacramento Valley (Colusa, Yuba, and Sutter Counties) and the northern and southern San Joaquin Valley (San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern Counties). Nevada, Placer, El Dorado, Amador, Calaveras, and Tuolumne Counties are dominated by the Sierra Nevada and its foothills. Agriculture, including grazing, occurs in the foothills. All 17 of the affected counties contain land under Williamson Act contracts (California State Association of Counties 2010).

The proposed project would be located within existing road and state highway rights-of-way (fiber and conduit) and on existing client institutions (cabinets). The proposed project would not affect lands under Williamson Act contracts.

Forestry Resources

Commercial timber production occurs in the higher elevations of the Sierra Nevada, including in the eastern portions of Nevada, Placer, El Dorado, Amador, Calaveras, and Tuolumne Counties. This production occurs on both private lands and on U.S. Forest Service land (Tahoe, Eldorado, and Stanislaus National Forests and a portion of Sierra National Forest). Commercial timber production also occurs in the eastern portions of Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern Counties, primarily in Sierra and Sequoia National Forests. Substantial forest resources, although no timber production, occur in Yosemite National Park, which spans the eastern portions of Tuolumne and Madera Counties, and in Kings Canyon and Sequoia National Parks, which span the eastern portions of Fresno, Tulare, and Kern Counties. The proposed route would not cross any national parks or forests.

3.2.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to agriculture and forestry resources are relevant to construction and operation under the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

No state plans, policies, regulations, or laws related to agriculture or forestry resources are relevant to construction and operation under the proposed project.

However, Caltrans has developed draft criteria for the installation of broadband communications vaults in Caltrans rights-of-way. These criteria are not an adopted policy. Caltrans *Draft Vault Criteria and Encroachment Permit General Provisions* states that vaults shall be located in compliance with the following criteria in addition to the standard general provisions requirements contained in every encroachment permit:

1. The project proponent must demonstrate that every option has been explored for placement of the vaults outside of the right-of-way before proposing installing vaults within controlled-access right-of-way.

2. The location of each vault within the right-of-way shall be approved by the District Permit Engineer or their designee.

3. Vaults must be flush with the ground.

4. Every effort must be made to place the vaults at the outside edge of the right-of-way and outside the Clear Recovery Zone. The Clear Recovery Zone is recognized as being 30' laterally away from the white edge stripe on access-controlled highways and 20' on conventional highways.

5. FHWA [Federal Highway Administration] concurrence for placing vaults within access-controlled right-of-way may need to be obtained. The Department will seek this approval.

6. Access to vaults will generally be made from outside the clear recovery zone. Also, frontage roads, local streets, etc. shall be used to the greatest extent possible for location of and access to vaults to the maximum extent possible.

7. Broadband deployment should only occur once in each highway corridor. The project proponent shall inquire about interest from others in the industry about participating in the project before construction. The goal is to meet the needs of all interested providers simultaneously instead of doing projects exclusively.

8. The project proponent shall propose the exact location of fiber and vaults for Caltrans to review. A complete encroachment permit application shall be submitted by the proponents of each project.

9. The project proponent accepts all risk associated with the placement of broadband fiber network in the right-of-way with 36" of cover over the conduit or conduits. This includes, but is not limited to, the cost to maintain and repair the conduit and fiber when damaged in any way by state forces, contractors or the public. Additionally, any secondary costs associated with lack of service shall be the cost of the project proponent. The project proponent is responsible for the repair or replacement cost for their broadband fiber network, even if the damage is caused by others due to accident or negligence.

10. For purposes of the broadband fiber network deployment project, the project proponent is understood to be the eventual permittee.

11. A limited number of dark fiber should be made available to Caltrans for future transportation-related uses.

12. Future efforts should be made to create a redundant system or network to reduce or limit the need for maintenance and repair.

The access to the vaults during construction and future use shall have no adverse effect on the safety and operation of the highway.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

3.2.3 ANALYSIS METHODOLOGY

Analysis of the potential impacts of the proposed project on agricultural and forestry resources was based on review of aerial photography. A determination was made whether the footprint of the proposed route, including equipment nodes, staging and equipment lay-down areas, and cabinets, would encroach upon agricultural or timber resources/forestland. General consideration was given to whether the proposed project, by its nature, would conflict with existing agricultural or timberland zoning.

3.2.4 DISCUSSION

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Less-Than-Significant Impact. The proposed route and cabinet sites would be located within the rights-of-way of existing roads and state highways, and on developed properties at anchor and client institutions. The study area, which includes the proposed route, the aforementioned institutions, and staging or other equipment lay-down areas, could potentially include small strips or plots of land that are designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance or zoned for agricultural use or under Williamson Act contract. Fiber and conduit installation within road and state highway rights-of-way is an allowable use. It is possible that if the staging or equipment lay-down areas were sited on private property, the construction area could encroach slightly on these lands. However, construction staging and equipment lay-down areas would not be sited on lands that are currently in agricultural production by the respective landowners. All construction, and therefore, all use of these lands would be temporary; none of these agricultural lands would be used or converted permanently. Thus, no conflict with zoning or with lands under Williamson Act contract would occur. Project operation and maintenance would not convert Important Farmland because the fiber optic conduit would be placed primarily underground (or attached to bridges and cellular towers) within existing, disturbed rights-of-way for roads and state highways and the cabinets would be located on existing client institutions. No long-term operational effect would occur. Incorporation of Environmental Protection Measure 1, "Restrict Construction Activities to Disturbed Areas" as part of the project and as a condition of project approval would minimize any potential impacts on agricultural land by ensuring staging and lay-down areas are located entirely within previously cleared or developed areas and not within actively cultivated agricultural lands. This impact would be less than significant. No mitigation is required.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

Less-Than-Significant Impact. See response to question (a), above.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

Less-Than-Significant Impact. The proposed route and cabinet sites would be located within the rights-of-way of existing roads and state highways, and on developed properties at anchor and client institutions. The study area, which includes the proposed route, the aforementioned institutions, and staging or other equipment lay-down areas, could potentially include areas adjacent to land zoned as forestland, but would not encroach on them. The proposed route would not cross any U.S. Forest Service lands. Because the proposed route would be underground, in existing road and state highway rights-of-way and because fiber and conduit installation are compatible uses within existing rights-of-way, the proposed project would not conflict with existing zoning, cause the rezoning of forestland, cause the rezoning of forest land, or convert forestland to nonforest use. All construction, and therefore, use of these lands would be temporary; no permanent conflict with existing zoning or conversion or loss of forestland would result. Project operation and maintenance would not convert forestland because the fiber optic conduit would be placed primarily underground (or attached to bridges and cellular towers) within existing, disturbed rights-of-way of roads and state highways, and the cabinets would be located on existing client institutions. Therefore, this impact would be less than significant. No mitigation is required.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

Less-Than-Significant Impact. See response to question (c), above.

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

Less-Than-Significant Impact. See response to question (a), above.

3.3 AIR QUALITY

ENVIRONMENTAL ISSUE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. Air Quality.				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

This section describes the potential direct and indirect impacts of the proposed project on air quality. For a discussion of GHG emissions and effects, refer to Section 3.7, "Greenhouse Gas Emissions." As noted in Chapter 2, "Project Description," the proposed route crosses into 17 different counties but also nine air districts, and three air basins, all of which lie within either the Central Valley of California or the Sierra Nevada foothills.

The Central Valley has been divided into two air basins: the Sacramento Valley Air Basin (SVAB) to the north and the San Joaquin Valley Air Basin (SJVAB) to the south. The dividing line between the SVAB and the SJVAB is the southern county lines for Solano and Sacramento Counties. Portions of the study area located within the Sierra Nevada foothills are within the Mountain Counties Air Basin. The physical affected environment (study area) as it relates to air quality is separated into the three air basins described above and nine air districts described below.

3.3.1 ENVIRONMENTAL SETTING

The ambient concentrations of air pollutant emissions are determined by the amount of emissions released by pollutant sources and the atmosphere's ability to transport, transform, and dilute such emissions. Natural factors that affect pollutant transport and fate include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the study area are determined by such natural factors as topography, meteorology, and climate, in addition to the types and quantities of emissions released by existing air pollutant sources.

CRITERIA POLLUTANTS

Ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable and fine particulate matter (PM_{10} and $PM_{2.5}$), and lead are all criteria air pollutants, the pollutants identified by the U.S. Environmental Protection Agency (EPA) as characterizing an area's air quality. A brief description of each criteria air pollutant (source types, health effects, and future trends) is provided below, along with the most current attainment area designations and monitoring data for the study area.

Both EPA and ARB designate areas of the state as attainment, nonattainment, or unclassified for various pollutant standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A "nonattainment" designation signifies that a pollutant concentration violated the standard, excluding those occasions when a violation was caused by an exceptional event, as identified in the criteria. An "unclassified" designation signifies that data do not support either an attainment or nonattainment status. In addition, EPA uses several classification levels to further describe the severity of nonattainment conditions for ozone and carbon monoxide. EPA assigns ozone nonattainment areas to moderate, serious, severe, or extreme air pollution categories, mandating increasingly strict control requirements for each.

Ozone is a photochemical oxidant, a substance whose oxygen combines chemically with another substance in the presence of sunlight, and the primary component of smog. Ozone is not directly emitted into the air, but is formed through complex chemical reactions between precursor emissions of reactive organic gases (ROG) and NO_X in the presence of sunlight. ROG are gaseous organic compounds that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels.

The adverse health effects associated with exposure to ozone pertain primarily to the respiratory system. Scientific evidence indicates that ambient levels of ozone affect not only sensitive receptors, such as asthmatics, children, and the elderly but healthy adults as well. Exposure to ambient levels of ozone ranging from 0.10 to 0.40 part per million (ppm) for 1–2 hours has been found to substantially alter lung functions by increasing respiratory rates and pulmonary resistance, decreasing tidal volumes, and impairing respiratory mechanics. Ambient levels of ozone above 0.12 ppm are linked to symptomatic responses that include such symptoms as throat dryness, chest tightness, headache, and nausea. In addition to the above adverse health effects, evidence also exists relating ozone exposure to an increase in the permeability of respiratory epithelia; such increased permeability leads to an increase in responsiveness of the respiratory system to challenges, and the interference or inhibition of the immune system's ability to defend against infection (Godish 2004). Ground-level ozone also damages forests, agricultural crops, and some human-made materials, such as rubber, paint, and plastics.

Particulate matter is a complex mixture of extremely small particles and liquid droplets emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and particulate matter formed in the atmosphere by condensation and/or transformation of SO_2 and ROG. Inhalable coarse particulate matter with an aerodynamic diameter of 10 microns or less, such as that found near roadways and dusty industries, is referred to as PM_{10}. Fine particulate matter ($PM_{2.5}$) includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 microns or less. Fine particulate matter can be directly emitted into the air or be formed when emissions gases react in the atmosphere (EPA 2010).

The adverse health effects associated with PM_{10} depend on the specific composition of the particulate matter. For example, health effects may be associated with adsorption of metals, polycyclic aromatic hydrocarbons, and other toxic substances onto fine particulate matter ("the piggybacking effect") or with fine dust particles of silica or asbestos. Generally, adverse health effects associated with PM_{10} may result from both short-term and long-term exposure to elevated concentrations and may include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, alterations to the immune system, carcinogenesis, and premature death (EPA 2010).

$PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and may contain substances that are particularly harmful to human health. The health effects associated with $PM_{2.5}$ are generally considered to affect the respiratory system, but exposure to particulate pollution has been shown to affect the cardiovascular system as well (EPA 2010).

The current California ambient air quality standards (CAAQS) and national ambient air quality standards (NAAQS) for criteria pollutants are listed in Table 3.3-1. (CAAQS and NAAQS are described in greater detail below under "State Plans, Policies, Regulations, and Laws" and "Federal Plans, Policies, Regulations, and Laws,"

Table 3.3-1
California Ambient Air Quality Standards and National Ambient Air Quality Standards

Pollutant	Averaging Time	California [a,b] Standards	National Standards [c]	
			Primary [b,d]	Secondary [b,e]
Ozone (O_3)	1-hour	0.09 ppm	-	Same as Primary Standard
		(180 µg/m^3)		
	8-hour	0.070 ppm	0.075 ppm	
		(137 µg/m^3)	(147 µg/m^3)	
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm	–
		(23 mg/m^3)	(40 mg/m^3)	
	8-hour	9.0 ppm	9 ppm	
		(10 mg/m^3)	(10 mg/m^3)	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm[f]	Same as Primary Standard
		(57 µg/m^3)	(100 µg/m^3)	
	1-hour	0.18 ppm	0.1 ppm[f]	–
		(339 µg/m^3)	(188 µg/m^3)	
Sulfur Dioxide (SO_2)	24-hour	0.04 ppm	–	–
		(105 µg/m^3)		
	3-hour	–	–	0.5 ppm[g]
				(1300 µg/m^3)
	1-hour	0.25 ppm	75 ppb[g]	–
		(655 µg/m^3)	(196 µg/m^3)	
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	–	Same as Primary Standard
	24-hour	50 µg/m^3	150 µg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	15 µg/m^3	Same as Primary Standard
	24-hour	–	35 µg/m^3	
Lead [h]	30-day Average	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-Month Average [i]	–	0.15 µg/m^3	
Sulfates	24-hour	25 µg/m^3	**No National Standards**	
Hydrogen Sulfide	1-hour	0.03 ppm		
		(42 µg/m^3)		
Vinyl Chloride [h]	24-hour	0.01 ppm		
		(26 µg/m^3)		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.23 per kilometer —visibility of 10 miles or more because of particles when the relative humidity is less than 70%.		

Table 3.3-1
California Ambient Air Quality Standards and National Ambient Air Quality Standards

[a] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to parts per million (ppm) by volume, or micromoles of pollutant per mole of gas.

[c] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency (EPA) for further clarification and current federal policies.

[d] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect public health.

[e] National Secondary Standards: The levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.

[f] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that EPA standards are in units of parts per billion (ppb). California standards are in units of ppm. To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

[g] On June 2, 2010, EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM have adequately permeated state monitoring networks. EPA also revoked both the existing 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of ppb. California standards are in units of ppm. To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[h] ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[i] National lead standard, rolling 3-month average: final rule signed October 15, 2008.

Sources: ARB 2010; EPA 2010

respectively.) The attainment status designations of the nine air districts through which the proposed route crosses and where client institutions are located are presented in Appendix B (ARB 2009).

TOXIC AIR CONTAMINANTS

EPA and ARB air quality regulations also address toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs). In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health effects may not be expected to occur. This contrasts with the criteria air pollutants, for which acceptable levels of exposure can be determined and for which the ambient standards have been established. Instead, EPA and ARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology for toxics (Maximum Achievable Control Technology and Best Available Control Technology, respectively) to limit emissions. These, in conjunction with additional rules set forth by the air districts, establish the regulatory framework for TACs. To date, ARB has identified more than 21 TACs and has adopted EPA's list of HAPs as TACs. Most recently, diesel particulate matter was added to the ARB list of TACs.

NATURALLY OCCURRING ASBESTOS

NOA, often found in serpentine rock formations, is present in many areas in and around the proposed route (Nevada, El Dorado, Amador, and Tuolumne Counties). When material that contains naturally occurring asbestos is disturbed, asbestos fibers may be released and become airborne, thereby creating a potential health hazard. Exposure to asbestos may result in inhalation or ingestion of asbestos fibers, which over time may result in damage to the lungs or membranes that cover the lungs, leading to illness or even death.

The California Division of Mines and Geology (now known as the California Geological Survey) has developed an enhanced 1:1,000,000-scale map that has improved the overall identification of locations of NOA near the project area. The map denotes areas of the state that are more or less likely to contain naturally occurring asbestos, based on available soil and geologic studies and some field verification. Where an area is characterized as having a lower overall probability of presence of naturally occurring asbestos, the likelihood of presence is slight, but in some instances naturally occurring asbestos might be found within such an area. Similarly, a location in the area identified as being most likely to have naturally occurring asbestos may not contain it.

This map shows areas of higher probability for asbestos-containing rock within the broad zone of faults that follow the low Sierra Nevada foothills and lie in a southeast-to-northwest band. Deposits of naturally occurring asbestos have been found in rock other than ultramafic and serpentine rock; for example, deposits have been found in metavolcanic rocks such as the Copper Hill Volcanics in the Folsom vicinity.

According to *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California* (Higgins and Clinkenbeard 2006) and *A General Location Guide for Ultramafic Rocks in California—Areas More Likely to Contain Naturally Occurring Asbestos* (CDMG 2000), the proposed route is located in areas in the Sierra Nevada foothills that may contain naturally occurring asbestos.

3.3.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Clean Air Act

At the federal level, EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

The CAA required EPA to establish NAAQS as discussed above in Table 3.3-1. The NAAQS standards are divided into primary and secondary NAAQS for the following criteria air pollutants: ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. The primary standards protect the public health and the secondary standards protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. The CAA also requires each state to prepare an air quality control plan referred to as a state implementation plan (SIP). The Federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. EPA reviews all state SIPs to determine whether they conform to the mandates of the CAA, and the amendments thereof, and whether implementation will achieve air quality goals. If EPA determines that a SIP is inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

General Conformity

The 1990 Amendment to CAA Section 176 requires EPA to promulgate rules to ensure that federal actions conform to the appropriate SIP. These rules, known as the General Conformity Rule (40 CFR 51.850–51.860 and 93.350–93.360), require any federal agency responsible for an action in a federal nonattainment/maintenance area to demonstrate conformity to the applicable SIP, by either determining that the action is exempt from the General Conformity Rule requirements or subject to a formal conformity determination.

Actions would be exempt, and thus would conform to the SIP, if an applicability analysis shows that the total direct and indirect emissions of nonattainment/maintenance pollutants from project construction and operation activities would be less than specified emission rate thresholds, known as *de minimis* levels, and that these emissions would be less than 10% of the area's annual emission budget for subject pollutants. If not determined exempt, an air quality conformity analysis would be required to determine conformity.

The General Conformity Rule is applicable only for project criteria pollutants and their precursors for which an area is designated nonattainment or that is covered by a maintenance plan. Portions of the study area are located within federal nonattainment areas for 8-hour ozone. General conformity will be evaluated as part of the separate NEPA document to be prepared for the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Clean Air Act

ARB is responsible for coordination and oversight of state and local air pollution control programs in California and for implementation of the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, requires ARB to establish CAAQS. ARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants; see Table 3.3-1. In most cases, the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained through interpretation of the health effects studies considered during the standard-setting process. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires all local air districts in the state to craft air quality plans to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts shall focus particular attention on reducing the emissions from transportation and areawide emission sources, and provides districts with the authority to regulate indirect sources.

Among ARB's other responsibilities are:

- overseeing compliance by local air districts with California and federal laws;
- approving local air quality plans and submitting SIPs to EPA;
- monitoring air quality;
- determining and updating area designations and maps; and
- setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Regional air districts have the primary responsibility for air pollution control from all sources of emissions, including emissions from motor vehicles. Air districts adopt and enforce rules and regulations to achieve CAAQS and NAAQS and enforce applicable state and federal law.

State law recognized that air pollution does not respect political boundaries, and therefore required ARB to divide California into separate air basins that each have similar geographical and meteorological conditions (California Health and Safety Code, Section 39606 [a]). Originally, air pollution was regulated separately by county APCDs.

Regional and local air districts are responsible for preparing and implementing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, and issuing permits for stationary sources of air pollution. The districts also inspect stationary sources of air pollution and respond to citizen complaints, monitor ambient air quality and meteorological conditions, and implement air quality programs and regulations.

Either all or some portion of El Dorado, Placer, Sacramento, Solano, Sutter, and Yolo Counties make up the Sacramento Federal Ozone Nonattainment Area, with the study area being located in El Dorado, Placer, and Sutter Counties. As a nonattainment area, the region is required to submit rate-of-progress milestone evaluations in accordance with the CAAA. Milestone reports were prepared for 1996, 1999, 2002, 2006, and most recently in 2008, for the 8-hour ozone standard. These milestone reports include compliance demonstrations that the requirements have been met for the Sacramento Federal Ozone Nonattainment Area.

The SJVAB failed to attain the federal 1-hour ozone standard by November 15, 1999, as required by the federal CAA. The San Joaquin Valley APCD prepared rate-of-progress reports in 2002 and 2005. In its final rule reclassifying the SJVAB to extreme nonattainment, EPA specified a due date of November 15, 2004, for the SJVAB Extreme Ozone Attainment Demonstration Plan, which the district met. In March 2010, EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan.

The air quality attainment plans and reports present comprehensive strategies to reduce emissions of ROG, NO_X, and PM_{10} from stationary, area, mobile, and indirect sources. Such strategies include the adoption of rules and regulations; enhancement of CEQA participation; implementation of a new and modified indirect-source review program; adoption of local air quality plans; and control measures for stationary, mobile, and indirect sources.

Based on the proposed alignment, additional local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

3.3.3 ANALYSIS METHODOLOGY

Temporary and short-term construction-generated emissions were modeled using construction-specific data and the SMAQMD Road Construction Emissions Model, Version 6.3.2 (SMAQMD 2009). The use of this model is accepted in most air districts in northern and central California. The model was developed to provide timelines and equipment necessary to estimate the emissions from linear projects, such as a roadway or pipeline. The design characteristics of the proposed project were input into the Road Construction Emissions Model to develop construction emission estimates. Up to three construction crews per activity type per segment could be reasonably anticipated to occur based on the length of the proposed alignment, and as such, this scenario and its associated emission levels were modeled, as shown below. The proposed project would have negligible long-term operational emissions associated with maintenance activates, which are anticipated to be minimal, so these were not evaluated as part of this analysis. Effects on air quality that would result from implementation of the proposed

project were analyzed by identifying sensitive receptors along the proposed route and evaluating whether or not the project would result in any of the situations described in the significance criteria (see CEQA environmental checklist above and the "Discussion" section below) and to what degree.

The construction period for the proposed project is anticipated to last approximately 14 months. The analysis was based on a worst-case scenario representing intensive days of construction for plowing, trenching, boring, blowing, and hanging and hook-up (attaching) activities. The worst-case emissions scenario was calculated for each proposed route segment. Segments where construction would take place concurrently within the same air district were then added together to create a baseline worst-case emissions day based on the construction schedules for that air district. This approach calculates a compounded worst-case day because it adds each segment's worst-case day to every other segment's worst-case day in each air district. It is unlikely that the worst-case day would occur in all segments on the same day; however, such a scenario may be possible and is therefore presented here for analysis purposes. In addition, the analysis assumes that the area of disturbed soil would be based on a trench width of 3 feet throughout construction for the fiber optic conduit. Complete modeling results are provided in Appendix B.

For the purposes of this analysis, each applicable air quality management or APCD may be relied upon to make the above determinations as to the intensity of adverse effects. Thus, as identified by the applicable air district, implementation of the proposed project would result in a significant impact on air quality if the thresholds identified in Table 3.3-2 would be exceeded.

Table 3.3-2
Construction Thresholds for Regional and Local Jurisdictions

Air District	County	lb/day				
		ROG	NO_X	PM_{10}	$PM_{2.5}$	BMPs
Feather River	Yuba	25	25	80	NE	No
	Sutter	25	25	80	NE	No
Northern Sierra	Nevada	136	136	136	NE	No
Colusa County[a,b]	Colusa	25	25	80	NE	No
Placer County[c]	Placer	82	82	82	NE	No
El Dorado County[d]	El Dorado	82	82	NE	NE	Yes
Calaveras County[b]	Calaveras	NE	NE	NE	NE	No
Amador County[b]	Amador	NE	NE	NE	NE	No
Tuolumne County[b]	Tuolumne	NE	NE	NE	NE	No
		TPY				
San Joaquin Valley	San Joaquin	10	10	15	NE	Yes
	Stanislaus	10	10	15	NE	Yes
	Merced	10	10	15	NE	Yes
	Madera	10	10	15	NE	Yes
	Fresno	10	10	15	NE	Yes
	Tulare	10	10	15	NE	Yes
	Kings	10	10	15	NE	Yes
	Western Kern	10	10	15	NE	Yes

Notes: BMPs = best management practices; lb/day = pounds per day; NE = none established; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gases; TPY = tons per year.

[a] Based on New Source Review triggers.

[b] Has no established CEQA thresholds.

[c] Chang, Yushou. Senior Planner. Placer County Air Pollution Control District. October 5, 2010—telephone conversation with Mike Wolf regarding Placer County thresholds of significance.

[d] Based on quarterly average.

Source: Data compiled by AECOM in 2010

3.3.4 DISCUSSION

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less-Than-Significant Impact. Air quality plans describe air pollution control strategies to be implemented by a city, county, or region. The primary purpose of an air quality plan is to maintain attainment of a CAAQS or an NAAQS or to bring an area that does not attain a CAAQS or an NAAQS into compliance with the requirements of the CAA and CCAA.

The various districts are responsible for formulating and implementing air quality plans to address several state and federal planning requirements. The air quality attainment plans and reports present comprehensive strategies to reduce emissions of ROG, NO_X, and PM_{10} from stationary, area, mobile, and indirect sources. Such strategies include the adoption of rules and regulations; enhancement of CEQA participation; adoption of local air quality plans; and implementation of control measures for stationary, mobile, and indirect sources.

The proposed project involves installing a fiber optic conduit and constructing associated facilities (cabinets) to provide high-speed Internet to anchor and client institutions in previously unserved and underserved areas throughout the northern Sacramento Valley, Sierra Nevada foothills, and the northern and southern San Joaquin Valleys. The air quality impacts of the proposed project would be primarily construction-related emissions that are temporary and short-term in nature. Long-term operational emissions would be associated with vehicle activity for maintenance and would be very infrequent because fiber optic lines require almost no maintenance. The proposed project does not include the construction of residential or commercial uses; therefore, operation under the proposed project also would not increase the population or workforce. Overall, vehicle miles traveled in the vicinity of construction or operation would not result in a net change above existing levels. It is possible that providing high-speed Internet access to these unserved and underserved areas and offering local access to high-speed Internet through anchor and client institutions would reduce travel (i.e., vehicle miles traveled) by the existing population.

Current air quality plans do not include control measures or detailed emission reduction goals that would be applicable to utility line (communications) installation projects such as the proposed project. Furthermore, as shown under item 3.3 b) below, project-related construction emissions only within the San Joaquin Valley APCD could exceed established thresholds and could be reasonably anticipated to affect air quality planning efforts. Incorporation of Environmental Protection Measure 3.3-1, "Implement All Applicable Emissions Control Measures for Construction Equipment Operating within the San Joaquin Valley," as part of the project and as a condition of project approval would require implementation of construction-related emission control measures for heavy construction equipment operating within the San Joaquin Valley and result in lesser air pollutant emissions than would otherwise occur. Environmental Protection Measure 3.3-1 only applies to construction within the northern and southern San Joaquin Valleys and is not required by the other air districts, nor is it intended to be implemented there. Therefore, because construction and operation of the proposed project would not be anticipated to substantially increase air pollutant emissions within any of the air districts that the proposed alignment crosses or enters, as explained in further detail in item 3.3 b) below, the proposed project would not interfere with the air districts' plans to achieve or maintain attainment for various air quality pollutants within their respective jurisdictions. As such, the proposed project would not obstruct implementation of applicable air quality plans, and this impact would be less than significant. No mitigation is required.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less-Than-Significant Impact. The proposed project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

According to the various air districts, implementation of the proposed project would result in adverse air quality effects if temporary, short-term construction-related or operational emissions of criteria air pollutants or precursors would exceed the thresholds of significance established by the respective air districts (construction thresholds of significance are identified in Table 3.3-2.) For those districts that do not have established thresholds of significance, the most applicable thresholds were used. Threshold applicability was determined by geographic location (i.e., in the same air basin), as well as potential to affect an air quality plan such as the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan*.

Construction activities would result in air emissions that would be "short-term" or temporary in duration. However, depending on the intensity of construction activities, project-generated air emissions could contribute to or violate an established air quality standard. Such emissions, especially fugitive dust emissions, have the potential to represent a significant impact with respect to air quality. Fugitive dust emissions are primarily associated with site preparation during construction and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles on- and off-site. ROG and NO_X are ozone precursor emissions and are primarily associated with mobile equipment exhaust.

Construction under the proposed project would result in the temporary generation of ROG, NO_X, PM_{10}, and $PM_{2.5}$ emissions. As noted in Chapter 2, "Project Description," the proposed project involves the construction of a new fiber optic conduit and associated facilities (cabinets). The equipment used to install the fiber optic conduit would vary depending on the type of operation (i.e., blowing a new fiber optic line into existing conduit requires different equipment than trenching through rock). Detailed construction activities and associated equipment lists are provided in Table 2-1 in Chapter 2, "Project Description." Off-site vehicle trips related to construction would be associated with material delivery, equipment delivery, and worker commute trips.

Table 3.3-3 presents the predicted construction emissions for the proposed project within affected air districts.

Table 3.3-3
Estimated Unmitigated Construction Emissions within Affected Air Districts

Air District	lb/day[a]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Northern Sierra	1.5	12.0	30.7	6.9
Feather River	3.0	24.0	61.4	13.8
Colusa County	1.5	12.0	30.7	6.9
Placer County	1.5	12.0	30.7	6.9
Amador County	1.7	13.1	31.7	7.0
Calaveras County	1.9	15.1	60.9	13.4
Tuolumne County	1.5	12.0	30.7	6.9
El Dorado County	3.0	24.0	61.4	13.8
		TPY		
San Joaquin Valley	4.80	**21.6**	**72.8**	16.8

Notes: lb/day = pounds per day; NO_X = oxides of nitrogen; ROG = reactive organic gases; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; TPY = tons per year.

[a] Bold indicates exceedances of applicable thresholds (thresholds presented in Table 3.3-2).

Source: Modeled by AECOM in 2010.

As shown in Tables 3.3-2 and 3.3-3, construction equipment emissions of NO_X could exceed the established threshold of 10 tons/year in the San Joaquin Valley APCD area. These emissions would have an adverse effect on the air basin attainment status and could interfere with achieving or maintaining air quality standards. Table 3.3-4 shows the project's emissions of ROG and NO_X within the San Joaquin Valley APCD area with incorporation of Environmental Protection Measure 3.3-1, "Implement All Applicable Emissions Control Measures for Construction Equipment Operating within the San Joaquin Valley."

Table 3.3-4
Estimated Regional Construction Emissions within the San Joaquin Valley APCD Area with Incorporation of Environmental Protection Measures

ROG	NO_X
1.26 tons per year	9.77 tons per year

Notes:
Reductions include a 20% reduction afforded by the required Tier 1 fleet average for the proposed project and further reduction afforded by limiting the number of crews per activity type per segment to one per day.
Source: Modeled by AECOM in 2010

Incorporation of Environmental Protection Measure 3.3-2, "Implement All Applicable Dust Control Measures, as Required by San Joaquin Valley Air Pollution Control District," as part of the project and as a condition of project approval would reduce the potential adverse effect of construction dust on nearby receptors, by requiring compliance with San Joaquin Valley APCD's Regulation VIII, "Fugitive Dust PM_{10} Prohibitions," and implementation of all required applicable control measures. As a result, project-generated construction emissions would not exceed applicable thresholds for San Joaquin Valley APCD. Furthermore, as shown above in Table 3.3-3, the criteria pollutant construction emissions of the proposed project would not exceed applicable thresholds for any of the other air districts in which the proposed project would be implemented, and thus, the impact of the proposed project with respect to construction emissions would be less than significant. No mitigation is required.

With respect to operational emissions, the proposed project would not involve the construction of uses that would generate daily vehicle trips or consume electrical or natural gas supplies. As such, potential operational emissions associated with the proposed project would be minimal and restricted to as-needed maintenance activities. As such, operation of the proposed project would not be anticipated to exceed the thresholds of significance established by any applicable air district and impacts would be less than significant. No mitigation is required.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less-Than-Significant Impact. The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the affected regions are in nonattainment. As discussed previously, potential operational emissions associated with the proposed project would be minimal and restricted to as-needed maintenance activities. The construction emissions associated with implementation of the proposed project are shown in Table 3.3-3. However, as also noted above, incorporation of Environmental Protection Measure 3.3-1, "Implement All Applicable Emissions Control Measures for Construction Equipment Operating within the San Joaquin Valley," and Environmental Protection Measure 3.3-2, "Implement All Applicable Dust Control Measures, as Required by the San Joaquin Valley Air Pollution Control District," as part of the project and as conditions of project approval would ensure that the proposed project's regional air emissions would be less than the applicable air district's air quality thresholds, which are designed to assist the region in attaining the applicable CAAQS and NAAQS, by reducing potential criteria air pollutant emissions that would otherwise occur without their incorporation into the proposed project. Therefore, the proposed project would not contribute to

cumulatively considerable air quality effects. When added to other similar existing and proposed future actions, the proposed project would not contribute to any cumulative air quality effects related to criteria pollutants for which the affected regions are in nonattainment. Therefore, this impact would be less than significant. No mitigation is required.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less-Than-Significant Impact. Implementation of the proposed project would not expose sensitive receptors to substantial concentrations of fugitive PM_{10} dust, criteria pollutants, or NOA, for the reasons described below. It should be noted, and as discussed above, the proposed project would result in minimal operational air quality emissions due to the type of use proposed, and as such, the following discussion focuses on the potential impacts to sensitive receptors that could occur during construction activities.

Fugitive PM_{10} Dust Emissions

Within San Joaquin Valley APCD's jurisdictional air basin, ground-disturbing activities (e.g., excavation) could result in high concentrations of fugitive PM_{10} dust at sensitive receptor sites, including single-family homes, schools, and libraries. San Joaquin Valley APCD requires compliance with Regulation VII, "Fugitive Dust PM_{10} Prohibitions," which are included in Environmental Protection Measure 3.3-2, "Implement All Applicable Dust Control Measures, as Required by the San Joaquin Valley Air Pollution Control District." Incorporation of the control measures outlined in Environmental Protection Measure 3.3-2 as part of the project and as a condition of project approval would reduce fugitive PM_{10} dust emissions to less-than-significant levels. No mitigation is required.

Criteria Pollutant Concentrations

Project-generated emissions of criteria air pollutants and precursors would not expose sensitive receptors to substantial criteria pollutant concentrations.

Sensitive receptors (including residences, schools, and libraries) are located near the proposed route at various locations along the right-of-way where the fiber optic conduit would be installed, and at anchor and client institutions. These sensitive receptors could be exposed to localized pollutant concentrations. Pollutants that could be generated by the proposed project during construction and could result in adverse health effects on sensitive receptors include CO, ozone precursors (i.e., ROG and NO_X), respirable particulate matter (i.e., PM_{10} and $PM_{2.5}$), TACs, and NOA.

As discussed above, emissions generated during construction under the proposed project would not substantially contribute to or result in an existing or projected violation of air quality standards. Construction-related and operational emissions would be below appropriate district significance thresholds with incorporation of environmental protection measures described above and would not be anticipated to result in a contribution to a violation of air quality standards, conflict with implementation of air quality planning efforts, or contribute to cumulative effects.

Construction activities would result in temporary, short-term emissions of particulate exhaust emissions from off-road heavy-duty diesel equipment (diesel particulate matter). Diesel particulate matter was identified as a TAC by ARB in 1998. The dose to which the receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. The risks estimated for an exposed receptor are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the proposed project.

The possible sensitive receptor exposure period for the construction is short (approximately 14 months) and mobile equipment would not operate in the immediate vicinity of any off-site sensitive receptor for an extended period of time. Therefore, the exposure period associated with the construction would be about 1% of the minimum exposure period for a health risk assessment. Thus, because off-road, heavy-duty equipment would be used for a relatively small period of time and would be temporary and intermittent in nature, and because of the highly dispersive properties of diesel particulate matter, construction-related TAC emissions would not be anticipated to expose sensitive receptors to substantial concentrations of TACs. No new stationary or area sources of TACs would be added, and the proposed project would not result in a long-term increase in vehicle activity and associated mobile-source TAC emissions. Therefore, this impact would be less than significant. No mitigation is required.

Naturally Occurring Asbestos

Some segments of the proposed route may cross areas known to contain serpentine or ultramafic rock that is common to the Sierra Nevada foothill areas. According to the California Division of Mines and Geology (now known as the California Geological Survey), NOA may be present in the construction area (CDMG 2000). If soil containing NOA is disturbed as part of construction, nearby sensitive receptors and construction contractors could be exposed to NOA. People exposed to low levels of asbestos may be at elevated risk (e.g., above background rates) of lung cancer and mesothelioma. The risk is proportional to the cumulative inhaled dose (number of fibers), and also increases with the time since first exposure. Although numerous factors influence the disease-causing potency of any given asbestos (such as fiber length and width, fiber type, and fiber chemistry), all forms are carcinogens. Because the proposed project proposes excavation of earth within known NOA areas, the proposed project could result in the exposure of sensitive receptors to unsafe levels of NOA, which could result in adverse effects. Incorporation of Environmental Protection Measure 3.3-3, "Reduce Emissions of Naturally Occurring Asbestos Dust," and Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies," as part of the project and as a condition of project approval would reduce impacts to a less-than-significant level by requiring compliance with state and local regulations applicable to NOA. Therefore, this impact would be less than significant. No mitigation is required.

e) Create objectionable odors affecting a substantial number of people?

No Impact. The proposed project does not involve creation or construction of materials or facilities that would generate objectionable odors or create new sources of odor in the short or long term that would affect a substantial number of people. No impact would occur. No mitigation is required.

3.4 BIOLOGICAL RESOURCES

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV.	**Biological Resources. Would the project:**				
	a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
	b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
	c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
	d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
	e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
	f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

This section describes the affected environment and the potential environmental impacts of the proposed project as they pertain to general and sensitive biological resources. The study area includes the project footprint and 250 feet on each side of the proposed route, but the project footprint and impact area would be confined to paved road surfaces and to the adjacent right-of-way as close as is practical to the edge of the paved surface. No sensitive biological resources are expected to occur within the project footprint or road or state highway right-of-way because of the high level of disturbance.

3.4.1 ENVIRONMENTAL SETTING

The biological diversity of the land adjacent to the right-of-way in the study area varies considerably depending on the types of land cover and land use. The types of land cover in the study area were initially identified using information obtained from the California Gap Analysis Project (GAP) (University of California, Santa Barbara

2004, 2005). The GAP is maintained by the Biogeography Lab at the University of California, Santa Barbara, and coordinated through the U.S. Geological Survey (USGS), Biological Resources Division. The term "Gap Analysis" refers to the evaluation of plant communities, vertebrate species, and vertebrate species richness using GIS overlays. GAP maps are produced at relatively low spatial detail (e.g., 1:100,000 map scale) to provide a broad overview of biological resources in California.

The land cover type mapping was then refined through aerial photograph interpretation using Google Earth (© 2011 Google) imagery to identify areas where land cover has changed since the GAP data was completed and identify potentially sensitive habitat areas that were not included in the GAP data or may not have been identifiable at the mapping scale used by GAP. Land cover types mapped in the 250-foot buffer area on each side of the proposed alignment are depicted in Appendix C. Cover types mapped in Appendix C will be field verified in spring 2011. The project footprint is contained completely within existing road easements characterized by bare ground or pavement; however, the maps in Appendix C depict the land cover in the 250-foot buffer area adjacent to the rights-of-way and do not depict the developed roadway and shoulders. Table 3.4-1 provides the acreage of each land cover type mapped in the study area. This acreage underestimates the acreage of developed land cover because the developed road easement was assigned the same cover type as the adjacent land cover in the 250-foot buffer for the acreage calculation.

Table 3.4-1
Preliminary Acreage of Land Cover Types in the Study Area

Land Cover Type	Acreage
Developed	15,323
Orchard-Vineyard	7,944
Field Crop	6,748
Rice	463
Woodland	8,632
Annual Grassland	2,302
Vernal Pool Grassland	1,324
Ruderal	923
Chaparral	803
Wetland	666
Alkali Scrub	455
Riparian	398
Stock Pond	271
Linear Aquatic (drainage)	3
Freshwater Marsh	3

Source: AECOM 2011.

The land cover data for the study area was consolidated into major types of land cover (i.e., developed, agricultural lands, woodlands, annual grassland, chaparral, and alkali scrub) and then quantified using GIS by percent cover. A large percentage of the right-of-way is bordered by urban development and agricultural land. Urban and rural development accounts for 35% of the land cover in the study area; agricultural land accounts for 33%. Included in the developed land acreage are areas subject to routine mechanical disturbance and characterized by weedy (i.e., ruderal) vegetation. Existing development is present along portions of the entire route. Agricultural land is located primarily next to the portion of the proposed route traversing the Central

Valley. Agricultural land consists of row and field crops, rice, orchards and vineyards. Rice crops were called out separately from other field and row crops because it provides important habitat values for giant garter snake in the Sacramento and northern San Joaquin Valleys. The biological diversity of developed and agricultural land is generally considered low when compared to native habitat.

Woodlands account for approximately 19% of the land cover within the study area. The consolidated woodland land cover type consists of the following woodland and forest plant communities: blue oak, blue oak-foothill pine, montane hardwood, montane hardwood-conifer, ponderosa pine, and Sierran mixed conifer. Within the study area, woodland habitats are common in the Sierra Nevada foothills in Amador, Calaveras, El Dorado, Nevada, Placer, and Tuolumne Counties. With the exception of major river corridors, contiguous stands of woodlands are not anticipated in the northern Sacramento or San Joaquin Valleys. Woodlands in the study area are expected to support moderate biological diversity because they are close to disturbed areas adjacent to roads.

Annual grassland habitat accounts for approximately 5% of the land cover within the study area. Most of the annual grassland habitat within the corridor of the proposed route has historically been used for livestock grazing. Annual grassland habitat is characterized by dense cover of annual grasses and forbs, which is dominated by nonnative species. Within the study area, annual grasslands are generally found on the foothill slopes of the Sierra Nevada. The historical distribution of grasslands in the northern Sacramento and northern and southern San Joaquin Valleys has been significantly reduced as a result of land conversion to agricultural and urban uses; however, grassland inclusions are present within the valley regions of the study area. Grasslands in the study area are expected to support moderate biological diversity.

Chaparral accounts for approximately 2% of the land cover within the study area. Chaparral habitat is dominated by dense thickets of native sclerophyllous (i.e., having hard, leathery, evergreen leaves adapted to prevent moisture loss) shrub species. Soils in chaparral habitat are sometimes derived from serpentine rock. Serpentine soil may support endemic plant species, including some that are considered rare. Chaparral in the study area is limited to Amador, Calaveras, El Dorado, and Tuolumne Counties. Generally, chaparral in the study area is expected to support moderate biological diversity.

Alkali scrub accounts for less than 1% of the land cover within the study area. Alkali scrub is characterized by open stands of low-growing shrubs and subshrubs that are adapted to dry habitats and high alkalinity. This habitat type is known to support a number of endemic plant species, including some that are rare. This type of land cover, which is limited in distribution to Kern and Kings Counties, supports moderate biological diversity.

The remainder of the study area is characterized by riparian and wetland habitat types that are discussed under *Sensitive Biological Resources*.

WILDLIFE

Approximately 68% of the study area traverses highly disturbed habitats, including developed areas and agricultural lands, which are characterized by low biological diversity. Wildlife diversity is expected to be higher in areas where the corridor of the proposed route intersects with land that supports native habitat types. Wildlife species diversity and abundance is expected to be lowest within and immediately adjacent to the roads and state highways where construction would occur.

Wildlife expected to occur in portions of the study area that are developed or support agricultural uses comprises mostly common native and introduced species. Many of these species have successfully adapted to the historical conversion of land use from native habitat to urban and agricultural uses and now exploit the availability of agricultural waste grains and other anthropogenic food. Wildlife expected to be common in agricultural and developed portions of the study area include mourning dove, house finch, European starling, American crow, common native and nonnative rodents, raccoon, and striped skunk.

Woodlands in the study area provide important habitat for a number of resident and migratory wildlife species, particularly when large contiguous stands of woodland are uninterrupted by development. Woodlands characterized by trees of different ages and maturity provide relatively high biodiversity because the structural diversity provides a broader range of breeding, foraging, and cover types. Common resident bird species anticipated to occur within woodland habitats in the study area include turkey vulture, acorn woodpecker, oak titmouse, wild turkey, and Anna's hummingbird. Many species of migratory birds, such as ash-throated flycatcher and violet-green swallow, are also expected to use woodland habitat in the study area. Mammals expected to occur in woodlands within the study area include mule deer, gray fox, coyote, and bobcat.

Generally, annual grassland, chaparral, and alkali scrub support lower wildlife diversity than woodlands. However, these cover types provide habitat for a number of special-status species, as discussed below.

SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources evaluated below include special-status species and sensitive habitats. The California Natural Diversity Database (CNDDB) (2010) maintained by the California Department of Fish and Game (DFG), is the primary source of information on sensitive biological resources previously reported near the study area. The CNDDB is the most current and reliable tool for tracking occurrences of special-status species in California; however, because the CNDDB includes only previously documented occurrences, the search results should not be considered as a comprehensive list of special-status species that could occur in the project area. Other sources of information used to identify the sensitive biological resources that have the potential to occur in the study area include USFWS (2010) list of species federally listed as endangered and threatened for all USGS quadrangles intersected by the proposed route and aerial photographs (NAIP 2009). The USFWS and DFG database search results are included as Appendix D.

Sensitive Habitats

Sensitive habitats include sensitive natural plant communities and other habitats designated and/or regulated by DFG, USFWS, USACE, and the CVRWQCB. Under Section 404 of the Clean Water Act (CWA), wetlands and other waters of the United States are subject to the jurisdiction of USACE. Aquatic habitats may also receive protection under California statutes including Section 1602 of the California Fish and Game Code and the California Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act), implemented by the CVRWQCB.

SPECIAL-STATUS SPECIES

For the purpose of this analysis, special-status species are plants and animals in the following categories:

- species that are listed under the federal Endangered Species Act (ESA) and/or California Endangered Species Act (CESA) as rare, threatened, or endangered;
- species considered as candidates and proposed for federal or state listing as threatened or endangered;
- wildlife species identified by DFG as species of special concern; and
- plants ranked by DFG in the following five rare plant categories:
    - List 1A—plants presumed to be extinct in California;
    - List 1B—plants that are rare, threatened, or endangered in California and elsewhere;
    - List 2—plants that are rare, threatened, or endangered in California but more common elsewhere;
    - List 3—plants about which more information is needed (a review list); and
    - List 4—plants of limited distribution (a watch list).

The CNDDB (2010) and USFWS (2010) list of federal endangered and threatened species that intersect the quadrangles of the proposed route were used as the primary sources of information on special-status species previously reported near the study area. For each of the species identified in the CNDDB and USFWS list, current range and specific habitat requirements were determined through literature review, including review of recovery plans, status reviews, Federal Register listing notices, the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants, and the California Wildlife Habitat Relationships information system maintained by DFG. Current range and distribution maps for each species were overlaid with the proposed fiber optic alignment when available. In cases where species range and distribution data were not available in GIS, range and distribution maps and descriptions were compared side by side with maps of the alignment. Aerial photographs (NAIP 2009, Google 2011) were used to evaluate habitat suitability for special-status species in the study area. Record searches identified 77 special-status species as previously reported near the study area (CNDDB 2010; USFWS 2010). Many of these species, including all special-status fish species, were eliminated from further consideration and are not discussed further in this IS because suitable habitat is not expected to be present in the study area or because the species current range does not include the study area. Special-status fishes were eliminated from future consideration because although the proposed route crosses major rivers that provide suitable habitat, all aquatic habitat would be avoided through the use of direction drilling (boring) and aerial fiber installation techniques (attaching fibers to bridges).

Table 3.4-2 includes special-status species that could potentially occur within the study area as determined by information obtained from the CNDDB (2010) and USFWS (2010). Because no focused or protocol-level field surveys were conducted as part of this evaluation, no conclusive determination can be made at this time regarding the presence or absence of these special-status species in the study area, which extends 250 feet on each side of the proposed route. However, special-status species are not expected to occur within the disturbance footprint. Vernal pools, rivers, streams, and drainages that intersect the study area have the highest potential to support special-status species.

The potential for occurrence for each species was determined based on the species current range, the presence or absence of potentially suitable habitat in the study area, and proximity to known extant occurrences. The following criteria were applied in categorizing the likelihood of occurrence for the species listed in Table 3.4-2:

- **Likely to occur** – known occurrences believed to be extant within the study area, suitable habitat is present in the study area, and study area is within the species' range.

- **Potential to occur** – known extant and current (within the past 25 years) occurrence within 1 mile of the study area (vicinity), potentially suitable habitat present, and the study area is within the species' current range.

- **Unlikely to occur** – the study area is outside of the species' currently accepted range and occurrences in the vicinity of the study area are extirpated (or historic), or no suitable habitat is present.

The assessment of potential for occurrence refers only to the likelihood of special-status species occurring within the 500-foot wide study area, not the project impact area. Special-status species are not expected to be present in the project impact area because the project footprint is confined to the right-of-way and other barren or highly disturbed areas.

Critical Habitat

Lands determined to be critical to the conservation and recovery of federally listed endangered or threatened species are designated by USFWS and the National Marine Fisheries Service as critical habitat. The corridor of the proposed route intersects critical habitat for California tiger salamander in San Joaquin and Stanislaus counties. Critical habitat for Greene's tuctoria exists within the study area in Madera County. Critical habitat for Central Valley steelhead and Chinook salmon is designated for the following rivers and waterways within the

study area: the Sacramento River, Feather River, Yuba River, Butte Slough/Sutter Bypass in Colusa County, and Deer Creek in Nevada County.

Table 3.4-2
Special-Status Species with the Potential to Occur in the Biological Resources Study Area

Species	Habitat	Federal[a]	State[b,c]	Potential for Occurrence[1]
Plants				
Ione manzanita *Arctostaphylos myrtifolia*	Ione chaparral	T	1B	**Unlikely to occur.** Study area intersects one CNDDB occurrence polygon in Calaveras County, but there is no Ione chaparral in the study area.
Horn's milk vetch *Astragalus hornii* var. *hornii*	Alkali meadows and playas	—	1B	**Unlikely to occur.** There is one historic (1939) CNDDB occurrence in the City of Bakersfield that is likely extirpated. There is no remaining suitable habitat within the study area in the species range.
Chinese Camp Brodiaea *Brodiaea pallida*	Vernal streambeds in woodland and grassland, usually in serpentine soils. Sierra Nevada Foothills	T	E 1B	**Unlikely to occur.** There are CNPS reported occurrences near (within 1 mile of) the study area between Jamestown and Tullock Reservoir in Calaveras and Tuolumne Counties, but no suitable habitat is present.
Round-leaved filaree *California macrophylla*	Grassland or woodland communities in clay soils	—	1B	**Potential to occur.** There is one historic (1889) CNDDB record of this species in the project vicinity near Stockton. Study area crosses species range in Colusa and San Joaquin Counties only. Potentially suitable habitat is present. Outside of the coastal regions, species is restricted to the eastern edge of the Sacramento and San Joaquin Valleys and the foothill areas of Kern County.
Stebbins' morning-glory *Calystegia stebbinsii*	Gabbroic or serpentinite soils in chaparral openings and cismontane woodland in Sierra Nevada Foothills	E	E 1B	**Likely to occur.** Study area includes three occurrences in Nevada County, one of which is possibly extirpated. The study area passes through the range of this species from Grass Valley to the Lake of the Pines vicinity and from Auburn to El Dorado along Highway 49. Suitable habitat is present in the study area.
Succulent owl's-clover *Castilleja campestris* ssp. *succulenta*	Vernal pools	T	E 1B	**Potential to occur.** Study area includes one CNDDB occurrence in Fresno County that is identified as possibly extirpated, but there are several other CNDDB records for this species in the project vicinity between the cities of Turlock and Merced. A limited amount of potentially suitable habitat is present in the study area within this species' range.

[1] *The assessment of potential for occurrence refers only to the likelihood of special-status species occurring within the 500-foot-wide study area, not the project impact area. Special-status species are not expected to be present in the project impact area because the project footprint is confined to the right-of-way and other barren or highly disturbed areas.*

Table 3.4-2
Special-Status Species with the Potential to Occur in the Biological Resources Study Area

Species	Habitat	Federal[a]	State[b,c]	Potential for Occurrence[1]
Hoover's spurge *Chamaesyce hooveri*	Vernal pools	T	1B	**Unlikely to occur.** No CNDDB occurrences are in the study area. This species has a very limited distribution with most known occurrences concentrated in the Vina Plains region of Butte and Tehama Counties. The study area crosses the species range only in the Visalia area in Tulare County where there is no suitable habitat. Although this species is also known to occur in Stanislaus and Merced Counties, it is distributed in distinct locations of these counties where the project alignment does not cross.
Brandegee's clarkia *Clarkia biloba* ssp. *brandegeeae*	Disturbed areas and road cuts in foothill pine oak woodland	—	1B	**Likely to occur.** Study area includes four CNDDB occurrences in Placer County (2) and El Dorado County (2). Species grows in chaparral, cismontane woodland, and montane forest communities; often in roadcuts.
Beaked clarkia *Clarkia rostrata*	Foothill grassland and woodland communities	—	1B	**Likely to occur.** Study area intersects one CNDDB occurrence in Tuolumne County along O'Byrne's Ferry Road (County Rd. E15) near Tullock Reservoir and potentially suitable habitat is present. The study area does not cross this species range outside of Tuolumne County (restricted to the far eastern portion of Stanislaus and Merced Counties).
Palmate bracted bird's beak *Cordylanthus palmatus*	Seasonally flooded alkaline soils in chenopod scrub or grasslands with saltgrass, alkali heath, iodine bush, and seepweed.	E	E	**Unlikely to occur.** Study area includes one historic CNDDB occurrence in San Joaquin County (Stockton West) that is likely extirpated (CNDDB record location has been converted to urban uses). Another historic occurrence in the project vicinity near Kerman is also believed extirpated. Species is known to occur near Colusa, but these occurrences are in the Delevan and Colusa National Wildlife Refuges a minimum of 2.5 miles from the project alignment and suitable habitat is not present in the study area.
Recurved larkspur *Delphinium recurvatum*	Alkaline soils in chenopod scrub, grassland, and woodland communities.	—	1B	**Potential to occur.** There are four historic CNDDB records of this species in the study area; one each in San Joaquin, Tulare, Kings, and Kern Counties. Although these records are old, there is potentially suitable habitat remaining in the study area in Kings County and the study area is within the current range. The historic occurrences in San Joaquin and Tulare Counties are likely extirpated because these areas are now characterized by urban and agricultural land uses.

Table 3.4-2
Special-Status Species with the Potential to Occur in the Biological Resources Study Area

Species	Habitat	Federal[a]	State[b,c]	Potential for Occurrence[1]
Dwarf downingia *Downingia pusilla*	Vernal pools	—	2	**Potential to occur.** Study area includes one CNDDB occurrence at Beale AFB in Yuba County and suitable habitat is present. This species occurs elsewhere in the Sacramento Valley Region in Sutter and Placer Counties, but these occurrences are far outside the study area. The study area also crosses this species range in Merced County. Its distribution in other San Joaquin Valley counties (i.e., San Joaquin, Stanislaus, and Fresno Counties) is outside the study area.
Kern mallow *Eremalche kernensis*	Alkali scrub, alkali grassland	E	1B	**Unlikely to occur.** There is a historic (1962) CNDDB record approximately 5 miles north of the study area along Hwy 43(north of the town of Kernell) in Tulare County; however, this record is outside of the species accepted range and there is very little potential habitat for this species in the study area. The accepted range of this species is western Kern County between Buttonwillow and McKittrick west of Interstate 5 (USFWS 1997).
Tuolumne button-celery *Eryngium pinnatisectum*	Vernal pools	—	1B	**Unlikely to occur.** Study area includes a total of five CNDDB occurrences in Tuolumne County (2), Calaveras County (2), and Amador County (1); however, there is no suitable habitat present..
Delta button-celery *Eryngium racemosum*	Riparian scrub and seasonally inundated clay floodplains	—	E 1B	**Unlikely to occur.** There is one CNDDB occurrence in Calaveras County along an existing fiber portion of the route. No suitable habitat is present in the study area.
Spiny-sepaled button celery *Eryngium spinosepalum*	Vernal pools	—	1B	**Potential to occur.** The study area includes one occurrence in Tulare County near the town of Exeter. This occurrence is likely extirpated because the area has been converted to urban and agricultural land uses. There is another CNDDB record of this species near New Melones Lake in Tuolumne County. Study area also crosses species range in Merced, Fresno, and Tulare Counties. There is a limited amount of potentially suitable habitat present.
Tuolumne fawn lily *Erythronium tuolumnense*	Chaparral and woodland, usually in serpentine soils	—	1B	**Unlikely to occur.** There is one CNDDB occurrence in the study area vicinity near Columbia in Tuolumne County, but no suitable habitat is present. Species distribution in Tuolumne and Calaveras Counties only.
Butte County fritillary *Fritillaria eastwoodiae*	Openings within woodland or chaparral communities; weak affinity to serpentine soils	—	2	**Likely to occur.** The study area intersects one CNDDB occurrence in Placer County along Hwy 49 northwest of the town of Cool near the Middle Fork American River. Potentially suitable habitat present.

Table 3.4-2
Special-Status Species with the Potential to Occur in the Biological Resources Study Area

Species	Habitat	Federal[a]	State[b,c]	Potential for Occurrence[1]
Striped adobe lily *Fritillaria striata*	Adobe clay soils in grasslands and woodlands	—	T 1B	**Unlikely to occur.** Study area includes two historic occurrences, near Lindsay and near Porterville, but these are extirpated. A very limited amount of suitable habitat may be present in the study area, but this species would not grow in roadway rights-of-way.
Woolly rose mallow *Hibiscus lasiocarpos* var. *occidentalis*	Freshwater marshes and swamps	—	1B	**Potential to occur.** Study area includes an occurrence on Colusa Highway between Meridian and Sutter. Alignment crosses species range in Colusa, Sutter, and San Joaquin Counties. Suitable habitat is present.
Parry's horkelia *Horkelia parryi*	Chaparral and woodland communities on Ione Formation soils	—	1B	**Unlikely to occur.** There is one historic (1970) CNDDB occurrence in the study area vicinity northeast of San Andreas in Calaveras County. Study area crosses species range in El Dorado and Calaveras Counties, but no suitable habitat is present.
California satintail *Imperata brevifolia*	Riparian scrub, meadows, and mesic sites within chaparral, coastal scrub, and desert scrub	—	1B	**Potential to occur.** There are four historic CNDDB records in the study area vicinity in Fresno (2, 1893 and 1933, Tulare (1, 1895), and Kern (1, 1896) Counties. Suitable habitat may be present in the study area in these counties, which is within the species' current range.
Madera leptosiphon *Leptosiphon serrulatus*	Woodland	—	1B	**Unlikely to occur.** The study area includes two historic occurrences; one in the City of Madera (1889) and one in the City of Fresno (1922). There is no suitable habitat for this species remaining in the study area within this species' range and these two occurrences are likely extirpated.
Congdon's lomatium *Lomatium congdonii*	Serpentine chaparral and woodland	—	1B	**Potential to occur.** There is a known occurrence in the project vicinity near the junction of Hwy 108/120 and County Road E15 (O'Byrnes Ferry Road) in Tuolumne County. However, suitable habitat is probably very limited in the study area. Study area also crosses species range in Calaveras County.
Calico monkeyflower *Mimulus pictus*	Disturbed, granitic habitats in woodland communities	—	1B	**Unlikely to occur.** There is one historic (1921) occurrence in the study area vicinity near the town of Lindsey in Tulare County. This occurrence is likely extirpated because there is no potential habitat remaining in the area (converted to agricultural and urban uses). There is no potential habitat in the study area within this species range.

Table 3.4-2
Special-Status Species with the Potential to Occur in the Biological Resources Study Area

Species	Habitat	Federal[a]	State[b,c]	Potential for Occurrence[1]
Colusa grass *Neostapfia colusana*	Vernal pools	T	E 1B	**Potential to occur.** No CNDDB occurrences in the study area. Species occurs in large vernal pools, which are not likely to occur within the project footprint, but are likely present within the 250-foot buffer. Study area crosses species current range in Colusa and Merced Counties. In Stanislaus County, species is distributed in the far eastern portion of the county where the alignment would not go.
Bakersfield cactus *Opuntia basilaris* var. *treleasei*	Sandy, gravelly soil in chenopod scrub, cismontane woodland, and grassland habitat; known only from the Bakersfield Area and Wheeler Ridge	E	E	**Unlikely to occur.** Historic occurrence within study area has been extirpated and the study area does not pass through suitable natural habitat in the species range.
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	Vernal pools	T	E 1B	**Potential to occur.** Study area includes three CNDDB occurrences, two of which are extirpated, in Madera County (2) and Fresno County (1). Potentially suitable habitat is present.
Hairy Orcutt grass *Orcuttia pilosa*	Vernal pools	E	E 1B	**Potential to occur.** Study area includes two CNDDB occurrences that are both identified as extirpated in Merced County (1) and Madera County (1). However, study area is within species' current range and potentially suitable habitat is present.
Layne's ragwort *Packera layneae*	Rocky serpentinite or gabbroic soils in chaparral and cismontane woodland openings	T	R	**Potential to occur.** Study area passes through species range in El Dorado County and there is a known occurrence in the project vicinity near Coloma. Potentially suitable habitat is present.
San Joaquin adobe sunburst *Pseudobahia peirsonii*	Adobe clay soils in cismontane woodland and annual grassland	T	E	**Unlikely to occur.** There are three historic records in the study area and vicinity in Tulare County (Dinuba (1), Tulare (1), and Lindsey (1)), but all are extirpated. The study area within this species range (eastern valley and Sierra foothills from Clovis to Bakersfield) is characterized by urban development and agriculture with no suitable habitat remaining.
Sanford's arrowhead *Sagittaria sanfordii*	Freshwater marsh; ditches, ponds, slow moving streams	—	1B	**Potential to occur.** The study area includes five CNDDB occurrences in San Joaquin (1), Merced (1), and Fresno (3) Counties and potentially suitable habitat is present.
Greene's tuctoria *Tuctoria greenei*	Vernal pools	E, X	R 1B	**Potential to occur.** Study area includes two CNDDB occurrences in Madera County (1) and San Joaquin County (1) that are both identified as extirpated. Study area includes USFWS-designated critical habitat in Madera County. Potentially suitable habitat is present.

Table 3.4-2
Special-Status Species with the Potential to Occur in the Biological Resources Study Area

Species	Habitat	Federal[a]	State[b,c]	Potential for Occurrence[1]
Red Hills vervain *Verbena californica*	Serpentine seeps and creeks	T	T 1B	**Potential to occur.** Known only from the Red Hills area of western Tuolumne County. There are known occurrences in the project vicinity near Sonora and near the junction of Hwy 108/120 and County Road E15 (O'Byrnes Ferry Road). However, no suitable habitat is present in the study area.
Invertebrates				
Conservancy fairy shrimp *Branchinecta conservatio*	Vernal pools	E	—	**Unlikely to occur.** No CNDDB occurrences within the study area; eight populations are known in Yolo, Solano, Stanislaus, and Merced Counties. The nearest occurrences in Stanislaus and Merced Counties are several miles from the study area.
Longhorn fairy shrimp *Branchinecta longiantenna*	Vernal pools	E	—	**Unlikely to occur.** No CNDDB occurrences are within the study area. Known only from a small number of highly fragmented populations in Contra Costa, Alameda, Merced, and San Luis Obispo Counties. The species distribution in Merced County is west of Hwy 99 and more than 10 miles from the study area.
Vernal pool fairy shrimp *Branchinecta lynchi*	Vernal pools	T	—	**Likely to occur.** Study area includes two CNDDB occurrences in Merced (1) and Colusa (1) Counties. Occur in a variety of vernal pool habitats.
Vernal pool tadpole shrimp *Lepidurus packardi*	Vernal pools	E	—	**Potential to occur.** Study area includes one CNDDB occurrence in Colusa County. Current distribution is across the Central Valley and San Francisco Bay area. Study area crosses species range in Colusa, Yuba, and Merced Counties. Distribution in Stanislaus County is restricted to the eastern portion of the county. Remaining habitat is highly fragmented and species occurrence is uncommon even where suitable habitat exists.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Elderberry shrubs	T	—	**Likely to occur.** Study area includes three CNDDB occurrences in Stanislaus (2) and Merced Counties (1). Expected to occur in elderberry shrubs within riparian areas.
Amphibians and Reptiles				
California tiger salamander *Ambystoma californiense*	Vernal pools and seasonal ponds in grassland habitats	T, X	T	**Potential to occur.** Study area includes four CNDDB occurrences within Fresno (1), Madera (2), and San Joaquin Counties (1). Three occurrences are extirpated, and one is possibly extirpated in Madera County. Suitable vernal pool and seasonal pond habitat is present within study area and study area is within species' range. Study area traverses critical habitat in San Joaquin and Stanislaus Counties.

Table 3.4-2
Special-Status Species with the Potential to Occur in the Biological Resources Study Area

Species	Habitat	Federal[a]	State[b,c]	Potential for Occurrence[1]
Western pond turtle *Emys marmorata*	Ponds and slow moving streams	—	SSC	**Likely to occur.** Study area includes two CNDDB occurrences within Tulare (1) and Merced (1) Counties. Numerous streams provide habitat for species within the study area.
Blunt-nosed leopard lizard *Gambelia sila*	Grasslands and open scrub	E	E	**Unlikely to occur.** Study area includes one historic CNDDB occurrence in Tulare County northeast of Corcoran. The area where this occurrence was documented in 1974 is now in agriculture. Minimal suitable habitat present within portion of study area that overlaps species' range. Endemic to the San Joaquin Valley. Project alignment crosses species range from Merced to Kern Counties; however species' current distribution north of Kern County is west of Hwy 99 outside of the study area except for one occurrence in the far eastern portion of Merced County also outside of the study area.
California red-legged frog *Rana draytonii*	Ponds and slow moving streams with overhanging vegetation	T	T	**Unlikely to occur.** Study area includes one historic CNDDB occurrence in Tuolumne County. Suitable streams are prevalent in foothills; however, only six isolated populations are known throughout the Sierra Nevada and the study area is outside this current known distribution.
Foothill yellow-legged frog *Rana boylii*	Rocky streams in Sierra Nevada in northern California to Kern County	—	SSC	**Potential to occur.** Study area includes one CNDDB occurrence from the middle fork of the Cosumnes River in El Dorado County. Suitable streams are prevalent in foothills; however, populations are highly fragmented.
Giant garter snake *Thamnophis gigas*	Cultivated rice, freshwater marsh, and slow moving streams or canals with overhanging vegetation	T	T	**Potential to occur.** Study area includes one historic CNDDB occurrence in Merced County. Suitable habitat is present near irrigation canals and slow moving streams. This species' current range is the Sacramento Valley from Butte County to San Joaquin County and the San Joaquin Valley from Stanislaus County to Fresno County. The study area crosses this range in Colusa, Sutter, San Joaquin, Stanislaus, Merced, and Fresno Counties.
Birds				
Tricolored blackbird *Agelaius tricolor*	Freshwater marsh, prefers stands of bulrush and cattail for nesting	—	SSC	**Likely to occur.** Study area includes four CNDDB occurrences in Stanislaus (1), Calaveras (1), El Dorado (1), and Sutter (1) Counties. Suitable habitat is in freshwater marshes associated with perennial streams.

Table 3.4-2
Special-Status Species with the Potential to Occur in the Biological Resources Study Area

Species	Habitat	Federal[a]	State[b,c]	Potential for Occurrence[1]
Burrowing owl *Athene cunicularia*	Open areas with low vegetation. Requires friable soils, usually occupying ground squirrel burrows	—	SSC	**Likely to occur.** Study area includes five CNDDB occurrences in San Joaquin County. Suitable habitat is in open grasslands and agricultural fields and unlined irrigation canals.
Swainson's hawk *Buteo swainsoni*	Forage in grasslands and agricultural fields; nest in open woodland or scattered trees	—	T	**Likely to occur.** Study area includes 10 CNDDB occurrences within San Joaquin (5), Tulare (4), and Stanislaus (1) Counties. Suitable foraging habitat is in alfalfa crops and annual grasslands within study area and suitable nesting habitat is in riparian areas.
Bank swallow *Riparia riparia*	Incised river banks	—	T	**Potential to occur.** Study area includes one CNDDB occurrence within Colusa County. Colony is known from within 1 mile of proposed route along incised banks of the Sacramento River.
Mammals				
Pallid bat *Antrozous pallidus*	Grasslands, scrub, woodlands, and forests; day roosts in caves, crevices, mines, hallow trees and buildings	—	SSC	**Likely to occur.** Study area includes three CNDDB occurrences within Tuolumne (1), Calaveras (1), and San Joaquin (1) Counties. Suitable habitat is throughout the study area.
Townsend's big ear bat *Corynorhinus townsendii*	All habitats except subalpine and alpine; roosts in caves, mines, tunnels, and manmade structures (e.g., bridges)	—	SSC	**Expected to occur.** No CNDDB occurrences are within study area. Suitable habitat is throughout the study area and is most likely to occur near bridges and rivers.
Western mastiff bat *Eumops perotis californicus*	Dry habitats of the southern San Joaquin Valley including woodlands, grasslands, chaparral and urban areas	—	SSC	**Expected to occur.** Study area includes five CNDDB occurrences within Fresno (1), Tuolumne (1), Madera (1), and Kern (2) Counties. Known to occur in the foothill regions of the Sierra Nevada and southern San Joaquin Valley.
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	Grasslands and open scrub; known only from valley floor in Tulare Basin	E	E	**Unlikely to occur.** Study area includes one historic CNDDB occurrence in Tulare County. Minimal suitable grassland and scrub habitat is in study area, which overlaps species range; habitat highly fragmented.
Western red bat *Lasiurus blossevillii*	Grasslands and open scrub, woodlands, and croplands; roosts in trees near water	—	SSC	**Likely to occur.** No CNDDB occurrences are within study area. Suitable habitat is present throughout study area.
Riparian brush rabbit *Sylvilagus bachmani riparius*	Riparian areas with dense shrub cover; known only from isolated locations in southern San Joaquin County.	E	E	**Unlikely to occur.** No CNDDB occurrences are within study area. Very narrow species range; highly fragmented populations.

Table 3.4-2
Special-Status Species with the Potential to Occur in the Biological Resources Study Area

Species	Habitat	Federal[a]	State[b,c]	Potential for Occurrence[1]
San Joaquin kit fox *Vulpes macrotis mutica*	Grasslands and open scrub	E	T	**Likely to occur.** Twenty CNDDB occurrences are in study area in Tulare (12), King (4), and Kern (4) Counties. Suitable grassland and scrub habitat is in southern San Joaquin Valley.

Notes: CESA = California Endangered Species Act; CNDDB = California Natural Diversity Database; DFG = California Department of Fish and Game; ESA = federal Endangered Species Act; SR = State Route; USFWS = U.S. Fish and Wildlife Service.

[a] Federal:
C = Candidate.
E = Listed as endangered under ESA.
T = Listed as threatened under ESA.
X = Critical habitat within the study area.

[b] State:
E = Listed as endangered under CESA.
T = Listed as threatened under CESA.
SSC = DFG species of special concern.
R = Listed as rare under the California Native Plant Protection Act.

[c] California Rare Plant Ranks*
1B = Rare or endangered in California and elsewhere.
2 = Rare or endangered in California, more common elsewhere.
* As of March 2010, DFG has adopted the name California Rare Plant Rank for the rarity and endangerment categories previously referred to as the CNPS list. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to CEQA Section 15380; however, these species may be evaluated by the lead agency on a case by case basis to determine significance criteria under CEQA.

Sources: USFWS 2010; CNDDB 2010; NAIP 2009

Critical habitat is also designated for Central Valley steelhead in the Merced River, Stanislaus River, Calaveras River, Mormon Slough, and the Stockton Diverting Channel in San Joaquin County.

3.4.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Endangered Species Act

Pursuant to the ESA, USFWS has regulatory authority over federally listed species. Under ESA, a project proponent must request a permit to "take" a listed species for any federal action that may harm an individual of that species. A take permit must be approved before construction or other activities that would cause take begin. Take is defined under ESA Section 9 as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Under federal regulation, take is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. This regulation applies because the proposed project is subject to the ESA and could potentially affect listed species.

Clean Water Act

Section 404 of the CWA requires project proponents to obtain a permit from USACE before performing any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Many surface waters and wetlands in California meet the criteria for waters of the United States.

In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate regional water quality control board

(RWQCB) indicating that the action would uphold state water quality standards. This regulation applies because the proposed project could potentially affect waters of the United States.

Executive Order 11990—Protection of Wetlands

Executive Order 11990 requires federal agencies to follow avoidance, mitigation, and preservation procedures, with public input, before proposing new construction in wetlands. It generally requires:

- avoidance of wetlands,
- minimization of activities in wetlands, and
- coordination with the USACE and compliance with CWA Section 404 regarding wetlands mitigation.

This regulation applies because the proposed project could potentially affect waters of the United States.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Endangered Species Act

Pursuant to CESA, a permit from DFG is required for projects that could result in the "take" of a plant or animal species that is listed by the state as threatened or endangered. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the CESA definition of take does not include "harming" or "harassing," like the ESA definition does. As a result, the threshold for take is higher under CESA than under ESA. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2080.1 consistency determination or a Section 2081 incidental take permit. The proposed project would be subject to compliance with this state regulation because it could potentially impact state listed species.

California Fish and Game Code Section 1602—Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by DFG under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do the following without first notifying DFG:

- substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake; or

- deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation. DFG's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A DFG streambed alteration agreement must be obtained for any action that would result in an impact on a river, stream, or lake. The proposed project would be subject to compliance with this state regulation because it could impact a river, stream, or lake.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. The RWQCB must prepare and periodically update water quality control plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control point and nonpoint sources of pollution to achieve and maintain these standards. Actions that affect waters of the state, including wetlands, must meet the RWQCB's waste discharge requirements, which may be issued in addition to a water

quality certification or waiver under Section 401 of the CWA. This regulation applies because the proposed project could potentially affect waters of the state. Additional detail on the Porter-Cologne Water Quality Control Act is included in section 3.9, "Hydrology and Water Quality."

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

3.4.3 ANALYSIS METHODOLOGY

The impacts on biological resources that would result from implementing the proposed project were analyzed by identifying the types of land cover within 250 feet of the proposed route and cabinet sites and evaluating the potential of special-status species to occur within the study area. The road and state highway rights-of-way and the cabinet sites within developed anchor and client institutions likely do not support important biological resources because of the high level of routine disturbance associated with these areas. Although no ground-disturbing activities are proposed outside of the construction footprint, including the proposed route and cabinet sites, the potential for construction activities to inadvertently affect sensitive habitats and special-status species outside of the construction footprint exists and is evaluated as part of the proposed project.

3.4.4 DISCUSSION

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?

Less-Than-Significant Impact. Project construction is not expected to have substantial direct impacts to special-status species or their habitat because all construction activities would occur in disturbed areas. Generally, the fiber-optic cable would be installed by trenching within the paved roadway or by plowing within the adjacent right-of-way. The unpaved right-of-way areas do not support special-status species because they are barren of vegetation and highly compacted and disturbed due to routine grading, weed control and road maintenance. Staging and lay-down sites would similarly be located in roadside areas that are also highly disturbed or barren. Environmental Protection Measure 3.4-1 requires an agency-approved biologist to verify that proposed staging and lay-down areas are devoid of sensitive biological resources before site mobilization can begin. Construction of cabinets and vaults would also occur in paved and developed areas, and therefore would not affect sensitive biological resources. All construction impacts would be of short duration, with cable installation occurring at a rate of 600 to 750 feet per day. Following installation all disturbed areas would be immediately (i.e., same day) restored to pre-project conditions.

Although substantial impacts to special-status species are not expected, environmental protection measures have been incorporated into the project description to further reduce the potential for any unanticipated direct or indirect impacts. For those portions of the route where sensitive habitats have the potential to support special-status species (e.g., riparian woodland and wetlands), or where critical habitat occurs adjacent to the right-of-way, incorporation of several avoidance measures would ensure impact avoidance. Environmental Protection Measure 3.4-2, "Monitor and Report on Implementation of Environmental Protection Measures for Biological Resources" provides an overarching program of biological resource impact avoidance which requires incorporation and monitoring of all biological resource Environmental Protection Measures that are part of the CPUC conditions of project approval. The Monitoring Plan includes performance standards of no significant impacts to sensitive

biological resources, requiring that construction activities have no direct impacts and negligible indirect impacts to all special-status species and sensitive communities. In addition, Environmental Protection Measure 3.4-7, "Avoid Effects on Aquatic Habitat, including Wetlands and Waters of the State and United States," provides numerous best management practices and other measures that require complete impact avoidance. The performance standard for that avoidance is no loss of area, function or value of waters of the state and of the United States within the project area. As discussed in Section 2.5, Project Description, the fiber optic cables would traverse rivers by aerial stringing of conduit on bridges or utility poles. If bridges or utility poles are unavailable and aerial stringing is not an option, directional drilling would be used to bore beneath sensitive drainages. To verify that all best management practices and avoidance measures are properly implemented for activities such as aerial stringing at bridge sites and during directional drilling, an agency-approved biological monitor would be on site during all construction activities near sensitive resources (Environmental Protection Measure 3.4 -4, "Biological Monitors Shall Supervise All Construction Activities within 250 Feet of Sensitive Biological Resources"). Construction workers would also be trained to avoid impacts to sensitive biological resources, as required by Environmental Protection Measure 3.4-5,"Develop and Implement a Worker Environmental Awareness Program for Protection of Biological Resources." Potential impacts associated with directional drilling and other construction activities near waterways include release of contaminated runoff into sensitive habitats, "frac-out" (i.e., the escape of drilling mud into the environment) into waterways or soils, soil displacement and fill of jurisdictional wetlands. Although these impacts are not expected, the following environmental protection measures have been developed to further reduce the potential for the project to adversely affect special-status species and sensitive habitat: Environmental Protection Measure 3.9-2, "Prepare and Implement an Inadvertent Release (Frac-out) Contingency Plan for Directional Drilling (Boring) under Sensitive Drainages and Waterways," Environmental Protection Measure 3.8-1, "Prepare and Implement a Spill Prevention Plan," and Environmental Protection Measure 3.9-1, "Prepare and Implement Storm Water Pollution Prevention Plans." In addition, Environmental Protection Measure 3.4-6, "Implement all Terms and Conditions of Agreements and Permits," requires CVIN to consult all appropriate local, state, and federal agencies, including DFG, USFWS, USACE and CVRWQCB, to determine which agreements, permits and certifications might be needed for project construction. The Conditions of Approval and MRP must include all permit terms and conditions required by local, state and federal permits.

In summary, incorporation of the following environmental protection measures as part of the project and as conditions of project approval would avoid or minimize to less-than-significant levels any potential impacts to any special-status species or their habitat, and to sensitive plant communities:

- Environmental Protection Measure 3.8-1: Prepare and Implement a Spill Prevention Plan,
- Environmental Protection Measure 3.9-1: Prepare and Implement Storm Water Pollution Prevention Plans.
- Environmental Protection Measure 3.3-2: Implement All Applicable Dust Control Measures, as Required by the San Joaquin Valley Air Pollution Control District.
- Environmental Protection Measure 3.4-2: Monitor and Report on Implementation of Environmental Protection Measures for Biological Resources.
- Environmental Protection Measure 3.4-3: Identify Environmentally Sensitive Areas on Construction Plans and Specifications.
- Environmental Protection Measures 3.4-4. Biological Monitors Shall Supervise All Construction Activities within 250 Feet of Sensitive Biological Resources.
- Environmental Protection Measure 3.4-5: Develop and Implement a Worker Environmental Awareness Program for Protection of Biological Resources.
- Environmental Protection Measure 3.4-6: Implement all Terms and Conditions of Agreements and Permits

- Environmental Protection Measure 3.4-7: Avoid Effects on Aquatic Habitat, including Wetlands and Waters of the United States.

No mitigation is required.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?

Less-Than-Significant Impact. As described under question (a), the project is not expected to substantially affect special-status species or sensitive habitat. To further minimize the potential for adverse affects to sensitive habitats, Environmental Protection Measure 3.4-2, "Monitor and Report on Implementation of Environmental Protection Measures for Biological Resources," includes performance standards of no direct impacts and negligible indirect impacts to:

- upland habitats such as annual grassland, woodlands (blue oak, blue oak-foothill pine, montane hardwood, montane hardwood conifer, ponderosa pine and Sierran mixed conifer), elderberry savanna, serpentine or gabbro plant communities, or Ione chaparral;
- riparian and aquatic habitat such as riparian woodland, vernal pools and vernal pool grassland, seasonal freshwater marsh, stockponds, irrigation canals, and alkali wetlands;
- any of the special-status species listed in Table 3.4-1 or habitat for these species, or
- nesting migratory birds.

With incorporation of this Environmental Protection Measure as part of the project and as conditions of project approval, impacts to riparian habitat or other sensitive natural community would be less than significant, and no mitigation is required.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less-Than-Significant Impact. Construction activities would avoid direct impacts to wetlands and sensitive aquatic habitats as described above, but drainages also occur outside of the construction area but adjacent to the route along some portions of the alignment. Drainages located downslope of construction could be indirectly impacted by erosion and sedimentation, or by the accidental introduction of washwater, solvents, oil, chemical wastes, cement, or other pollutants from construction equipment and materials. Other indirect impacts of construction include noise, dust and increased levels of activity that might disturb nesting birds and other wildlife, or sensitive plant species or communities. To address these potential indirect impacts to portions of the route that might support sensitive habitat and species within 250 feet of the alignment, an agency-approved biological monitor would establish Environmentally Sensitive Areas that would be monitored during construction to ensure appropriate avoidance measures (for example, restricting the timing or location of construction activities) are implemented, as part of Environmental Protection Measure 3.4-2, "Monitor and Report on Implementation of Environmental Protection Measures for Biological Resources." With incorporation of this Environmental Protection Measure as part of the project and as a condition of project approval, impacts to wetlands would be less than significant and no mitigation is required.

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

Less-Than-Significant Impact. The fiber optic cables would be buried, and therefore would not create barriers to terrestrial wildlife, and any disruptions of wildlife movement would be of short duration (less than a day). The only potential migratory corridors or native nursery sites along the proposed alignment are drainages that intersect the route. These drainages can provide movement corridors for terrestrial wildlife and fish, and could support spawning habitat for fish. As described in question (a) above, with incorporation of Environmental Protection Measures 3.8-1, 3.9-1, 3.3-2, 3.4-2, 3.4-3, 3.4-4, 3.4-5, 3.4-6, and 3.4-7 as part of the project and as conditions of project approval, the drainages in the project area would not be affected by construction activities. Impacts would be less than significant. No mitigation is required.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less-Than-Significant Impact. The proposed project alignment would pass through 17 counties and multiple incorporated cities within these counties and would be required to comply with local policies or ordinances protecting biological resources, including conservation plans and measures associated with the preservation of sensitive biological resources. In addition, incorporation of Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies," as part of the project and as a condition of project approval would ensure that the project adheres to local policies and ordinances. Impacts would be less than significant. No mitigation is required.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less-Than-Significant Impact. See responses to questions (a) and (e), above. In addition, incorporation of Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies," as part of the project and as a condition of project approval would ensure that the project adheres to local policies and ordinances. As a result, impacts would be less than significant. No mitigation is required.

3.5 CULTURAL RESOURCES

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V.	**Cultural Resources. Would the project:**				
	a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☒	☐
	b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☒	☐
	c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
	d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

This section describes existing environmental and regulatory settings and addresses potential environmental impacts of the proposed project on cultural resources. The existing environmental and regulatory settings of the proposed project include the general prehistoric, ethnographic, and historical background and a quantification and description of known cultural resources along the proposed route. The impact discussions focus on any adverse changes, including physical damage or substantial changes, to the historical setting of cultural resources.

The term "cultural resources" refers to prehistoric (Native American) and historical archaeological remains; historical buildings, structures, and other features of the built environment; human remains (burials and burial-associated artifacts); and places of importance to Native Americans. Cultural resources are defined generally in terms of physical remains of past human activities or locations of exceptional cultural and traditional importance to ethnic groups such as Native Americans.

The study area for cultural resources is the area in which the construction and operation of the proposed project can directly and indirectly affect cultural resources. The areas where conduits would be installed and connections would be made to existing facilities are limited to the existing road and state highway rights-of-way. The conduit would not be visible after construction; thus no potential impacts on the historical settings of surrounding areas would occur. Therefore, the study area is limited to the area in which physical damage to cultural resources could occur. The study area for cabinet locations includes both the area where construction may have a physical impact on cultural resources and adjacent buildings, which could potentially be affected by changes in the historical setting as a result of the visual effect of the cabinet. See Section 3.1, "Aesthetics," for further discussion of impacts on aesthetic resources.

3.5.1 ENVIRONMENTAL SETTING

REGIONAL PREHISTORY

Archaeological data have shown that humans have inhabited California for the past 10,000–12,000 years. The varied topography and climate of the state has contributed to the varied ways humans have used technology to adapt to these conditions from region to region and over long periods of time. In the early 1970s, Fredrickson (1974a, 1974b) proposed a sequence of cultural patterns for the central districts of the north Coast Ranges that he believed apply to California as a whole. This broad system has been refined as more information became available

through archaeological excavations and explorations and with new radiocarbon dates adjusted with modern calibration (Rosenthal et al. 2007:147–153). These different cultural patterns are characterized by:

- similar technological skills and devices (specific cultural items);
- similar economic modes (production, distribution, consumption), including especially participation in trade networks and practices surrounding wealth (often inferential); and
- similar mortuary and ceremonial practices.

The economic and cultural component of each pattern is manifested in geographic regions according to the presence of stylistically different artifact assemblages. This integrative framework provides the means for discussing cultural patterns that are temporally equivalent across a broad geographic space.

Valley Traditions

Most cultural sites on the valley floor are discovered in buried context. The late Middle Archaic record shows a pattern of organized subsistence strategies and increased habitation along rivers. The artifact assemblage, including plant and animal remains, indicate a sedentary lifestyle starting 6,000 years ago.

Sierra Nevada Foothill Traditions

Many cultural sites, dating from 4050 and 2050 B.C., are fairly common in the Sierra Nevada foothills and are characterized by "expedient cobble-based pounding, chopping, scraping, and mulling tools" (Rosenthal et al. 2007:153). The artifact assemblage consists of flaked and ground stone tools used for procurement and processing food. Acorns and pine nuts were target resources. Sites and their components often represent high residential mobility.

REGIONAL ETHNOGRAPHY

Although geographic ethnic boundaries of Native Americans do not always correlate precisely with the defined regional areas, below is a summary of the ethnographic information for each of these areas, as described in the *Handbook of North American Indians*: *California*, Volume 8 (Wallace 1978).

Northern Sacramento Valley

The proposed route crosses Colusa, Sutter, and Yuba Counties within the northern Sacramento Valley region. The northern Sacramento Valley was inhabited by the Nisenan, or Southern Maidu, whose territory ranged from the Sacramento River on the west, to the crest of the Sierra Nevada on the east, and as far south as the American River or Cosumnes River. The northern boundary extends up to the Feather River, but is not clearly defined because of similarities in dialects. Nisenan settlement locations depended primarily on elevation, exposure, and proximity to water and other resources. Permanent villages were usually located on low rises along major watercourses.

Sierra Nevada Foothills

The proposed route crosses Nevada, Placer, El Dorado, Amador, Calaveras, and Tuolumne Counties in the Sierra Nevada region. The Sierra Nevada foothills were largely inhabited by the Eastern Miwok, encompassing five distinct cultural and linguistic groups. Within the area of the proposed project, the Northern Sierra Miwok traditionally inhabited the foothills and upper elevations of the Mokelumne and Cosumnes River drainages. The Central Sierra Miwok's territory reached from the Stanislaus to the Tuolumne drainages, while the Southern Sierra Miwok group occupied the upper drainages of the Merced and Chowchilla Rivers. Within all of the Miwok groups, the prominent governing unit was the tribelet, which was an "independent and sovereign nation that

embraced and defined and bounded territory exercising control over the natural resources contained therein" (Levy 1978:398).

Northern San Joaquin Valley

The proposed route crosses San Joaquin, Stanislaus, Merced, and Madera Counties in the northern San Joaquin Valley region. The northern San Joaquin Valley was inhabited by Northern Valley Yokuts and the Southern Sierra Miwok (see the description of the Miwok above). Little ethnographic literature is available on the Northern Valley Yokuts because of their rapid disappearance during the Gold Rush years. Their tribal locations extended from south of Chowchilla in the south, the northern boundary between the Calaveras and Mokelumne River drainages in the north, the Diablo Range to the west, and the Sierra Nevada to the east. The majority of their traditional tribal land consisted of a "vast complex of islands and tule marshes" (Wallace 1978:463). Fishing and fowling is thought to have been the central means of obtaining food, followed by gathering acorns and tule roots.

Southern San Joaquin Valley

The proposed route would cross Tulare, Kings, Kern, and Fresno Counties in the southern San Joaquin Valley region. The Southern San Joaquin Valley was inhabited by the Southern Yokuts, Foothill Yokuts, and Tubatulabal.

The Southern Yokuts inhabited the lower end of the San Joaquin Valley and were unique from their foothill and northern neighbors because of their lake-slough-marsh living environment. The rich and abundant food sources allowed the Southern Yokuts to live in permanent residences for the majority of the year.

The Foothill Yokuts occupied the western slopes of the Sierra Nevada from the Fresno River to the Kern River and the Tubatulabal inhabited the drainage area of the Kern and South Fork Kern Rivers. The environment of the Tubatulabal was an area with a wide variety of vegetation. The Tubatulabal's subsistence was entirely based on hunting, fishing, and gathering.

REGIONAL HISTORY

Following exploration of parts of the interior San Joaquin Valley of California beginning in the 1770s (during the Spanish period), early travelers used two major north-south trails. El Camino Real ("King's Highway") parallels the Pacific coast and was used to connect the Spanish missions between San Diego and Sonoma. El Camino Real is now U.S. Highway 101. El Camino Viejo is the oldest north-south trail that traversed the entire length of the San Joaquin Valley (Hoover et al. 2002:85).

The 1848 discovery of gold at Sutter's Mill near Sacramento resulted in the Gold Rush, which influenced the history of the entire State of California (established 1 year later) and the nation. Thousands of settlers and immigrants entered the state, a trend that continued particularly following the completion of the Transcontinental Railroad in 1869. While a substantial number of people headed for the gold fields in the Sierra Nevada foothills, more enterprising individuals sought success through agriculture, ranching, manufacturing, lumber, and transportation, to meet the increasing demands of the miners.

Northern Sacramento Valley

The northern Sacramento Valley region, including Colusa, Sutter, and Yuba Counties, is rural. The region contains cities such as Chico, Oroville, Marysville, and Yuba City, which represent four of the largest communities. The lack of major mineral deposits, such as coal or iron, and the distance of these counties from major commercial centers contributed to the overall rural development of the region. Residents historically relied on agriculture, lumber, and some mining to subsist. The construction of the Northern Electric Railroad (later the Sacramento Northern Railroad) in 1905 and the Western Pacific Railroad (part of the Transcontinental Railroad system) in 1910 further stimulated the region's growth and development.

By the 1950s and 1960s, the economy throughout the region was booming with thriving agriculture, canning, lumber, and wood processing enterprises. Other local industries included prefabricated houses, structural steel fabrication, olive processing, sugar manufacturing, rice milling, walnut and almond processing, and dairy processing. Agriculture continued to be the primary industry of the region in terms of production and growth (McGie 1982:108, 115–118).

Sierra Nevada Foothills

The history of the Sierra Nevada foothills in California is largely associated with the aforementioned 1848 discovery of gold and the subsequent rush to settle. However, not everyone who came to California did so during the Gold Rush, and not everyone who came to California during the Gold Rush made his or her living mining for gold. Many individuals saw opportunities in ranching and farming as a means of making a living. As the placer mines began to diminish in substantial returns, many mining prospectors turned to ranching and agriculture enterprises. By the 1860s, areas of the foothills produced hay, barley, grapes, peaches, and walnuts and provided a venue for raising cattle and sheep. Prior to irrigation farming, the cultivation of various grains, particularly wheat, was predominant throughout the low foothill regions.

San Joaquin Valley

One of the key components to the settlement of the San Joaquin Valley was when, in the 1870s, the Central Pacific Railroad constructed its line through the San Joaquin Valley to reach southern California. This railroad line revolutionized the transportation network, passenger travel, and the ability of farmers and ranchers to sell their goods to distant markets. With the arrival of the railroads, agricultural products could be rapidly transported to large distribution centers, and the agricultural industry of the Central Valley was born. Cities such as Stockton, Modesto, Merced, Fresno, and Visalia were a few of the Central Valley towns that benefited from their proximity to both the river access and the Southern Pacific Railroad (Burcham 1981).

In the late 1800s the San Joaquin Valley became the center of California's wheat belt. While ranching remained an important industry, the expansion of large-scale irrigation in the early 1900s resulted in the production of a variety of fruits and vegetables, vineyards, alfalfa, and cotton, among other crops (Jelinek 1982:47–60).

The establishment of a state highway system in the early 1900s to mid-1900s was the next major transportation development. Two north-south highways were constructed through the Central Valley. One highway corresponded to today's SR 99 in the interior and the second to U.S. Highways 1 and 101 along the western slope of the Coast Range. The routes that passed through the population centers in the region, particularly during the latter half of the 20th century, were surrounded by the growth of existing and new residential, commercial, and industrial complexes. SR 99 was completed as a four-lane expressway between Sacramento and Los Angeles in the 1950s, and Interstate 5 was completed in the 1970s (Berlo 1998: 65–69).

PREVIOUSLY KNOWN CULTURAL RESOURCES

Sources of information on known cultural resources in the study area include records searches at the California Historical Resources Information System (CHRIS) regional information centers and contacts with Native Americans. These information sources were used to help guide the field survey efforts, to identify areas that have already been inspected for the presence of cultural resources and did not need to be re-inspected and to ensure that previously identified cultural resources were inspected and are included in the formulation of avoidance methods.

Records Searches

Records searches for cultural resources in the study area were conducted at five regional Information Centers of the CHRIS: Northwest Information Center (Colusa County), Northeast Information Center (Sutter County), North Central California Information Center (Amador, El Dorado, Nevada, Placer and Yuba Counties), Central California Information Center (Calaveras, Merced, San Joaquin, Stanislaus, and Tuolumne Counties), and

Southern San Joaquin Valley Information Center (Fresno, Kern, Kings, Madera and Tulare Counties). Information was gathered at each information center about previously identified cultural resources in the study area, including the resource type and recorded location of each resource. Information about previous cultural resource investigations that included large portions of the current study area was also obtained to aid in assessing the need for additional field investigations. Appendix E presents information on known cultural resources in the study area, organized by route segment.

Appendix E presents a list of the known prehistoric and historical resources on file with the CHRIS. The resources listed represent only those resources noted as occurring within the proposed route or immediately adjacent to the proposed route. The records search conducted for the proposed project only included those construction segments that would involve new construction; therefore, construction segments known as "overblow" in existing conduit were not reviewed for resources. The records search resulted in finding 13 prehistoric resources and 95 historical resources located within or next to the proposed route or other construction areas. The prehistoric sites consist of milling sites, lithic scatters, and a rock shelter, and none of these are noted as being located within the proposed road rights-of-way, except for one bedrock mortar site that appears to have been relocated from its original context and an isolated milling artifact noted within the road right-of-way. The historical resources consist primarily of buildings and structures, including bridges, located adjacent to the proposed route and other construction areas. As would be expected, the buildings and structures occur most frequently (except for bridges) within the more highly populated urban areas. However, some of these historical resources are mining features, such as tailings and ditches, and they are noted as occurring within the road right-of-way.

Approximately 20% of the proposed route has been previously inspected for the presence of cultural resources by archaeologists.

Field Survey

Between February 28 and March 22, eight AECOM archaeologists conducted a field reconnaissance of the proposed project alignment. The field survey was conducted under the direct supervision of an archaeologist meeting the *Secretary of the Interior's Standards for archaeology and Historic Preservation*. The proposed project area was inspected for the presence of cultural resources using various levels of intensity, ranging from intensive surface inspection with pedestrian transects spaced less than 15 feet apart to cursory inspection of areas with apparent very low sensitivity for the presence of cultural resources and in developed areas. Areas that have been previously surveyed within the past 10 years were not re-inspected but previously recorded cultural resources in those areas were visited in order to determine avoidance methods.

The survey area comprised the area of potential effects (APE) as determined by NTIA and concurred with by the SHPO. The APE includes all areas subject to ground disturbance (direct APE) and all areas subject to potential changes in the historical setting (indirect APE). The direct APE includes all areas where new fiber conduit will be installed using ground-disturbing construction methods. Because the exact location of conduit installation has not been determined, and also to allow for design flexibility to avoid potential historic properties and other resources, the direct APE includes entire road and state highway rights-of-way, including both sides of roads.

Staging and equipment lay-down areas would be limited to the use of existing graveled, paved, or graded areas if such areas are needed outside of the road and state highway rights-of-way. Because no ground-disturbance or permanent changes in historical setting would result from use of existing equipment yards (graveled, paved, or graded areas), these areas are not included in the APE.

The indirect APE includes the locations of cabinet facilities, above-ground boxes which could be located adjacent to existing buildings at institutions that would be served by the proposed project. No indirect APE has been identified in areas where conduit would be installed because the conduit will be underground and not visible after construction.

The APE does not include areas where fiber would be blown into existing conduit or where existing fiber would be used because these components of the proposed project do not involve ground disturbing activities or changes in historical setting.

Newly identified cultural resources were recorded using California Department of Parks and Recreation Standard Form 523 recordation forms; and the locations and boundaries of all identified cultural resources, using a Garmin GPS unit which did not have sub-meter accuracy.

Field Survey Results

The field survey resulted in the identification of 63 cultural resource sites within or directly adjacent to the project APE. These include both previously recorded sites and sites recorded as a result of the survey conducted for the proposed project. Identified cultural resources included mining-associated remains, stone walls, foundations, corals, ranching-associated remains, prehistoric artifact scatters and other prehistoric sites, culverts, ditches and canals, railroad alignments, bridges, and roads. In addition to recorded sites, the field survey also resulted in the identification of 12 historic districts (developed areas which may have sensitivity for additional buried foundations or other remains) and several archaeologically sensitive areas (areas where no archaeological remains were identified but where the landform suggests that buried resources could be present.)

Cultural Resources Inventory Report

The methods and results of the records search, field survey and Native American contacts will be documented in a cultural resources inventory report currently being prepared to address Section 106 requirements under the National Historic Preservation Act. The cultural resources inventory report will also describe the specific avoidance measure recommended for each identified cultural resource that is potentially eligible for listing on the NRHP or the CRHR. The specific avoidance measures for each cultural resource was formulated in the field by the lead archaeologist based on observations of each resource and other potential issues affecting conduit installation location such as rights-of-way width, steepness of terrain, and existing utilities. The recommended avoidance measures will then be reviewed by the project design team to ensure feasibility of the recommended method. Specific avoidance measures have been formulated for every identified cultural resource. And will be provided in the inventory report. The avoidance measures, resulting in no adverse impacts on cultural resources as a result of implementation of the proposed project. The cultural resources inventory report shall be reviewed and approved by NTIA, CPUC, Caltrans, USACE, BLM, and the SHPO.

Native American Contacts

NTIA, which is the federal lead agency for the proposed project's compliance with NEPA, contacted Native American tribes in the study area and asked them to identify any interest or concerns they may have concerning the proposed project.

Additionally, the NAHC was contacted and requested to provide a list of Native Americans who may have information or concerns about cultural resources along the proposed route. The NAHC was also asked to provide any available information on known cultural resources in the study area. The NAHC responded with a list of Native American contacts as well as known cultural resources in or near the study area. NTIA sent a letter to each organization or individual on the NAHC list requesting information on cultural resources of importance and the identification of any concerns.

The respondents to date include the Fallon Paiute-Shoshone Tribe, the Yocha Dehe Wintun Nation, the Picayune Rancheria of Chukchansi Indians, and the Greenville Rancheria, Table Mountain Rancheria, United Auburn Indian Community of the Auburn Rancheria, the Enterprise Rancheria, the Tuolumne Band of Me-Wuk Indians,

and the Colusa Indian Community Council. A complete list of Native American tribes that were contacted by NTIA is provided in Appendix F.

Native American consultation is on-going. Following completion of the cultural resources inventory report, Native Americans that indicated an interest in the proposed project will be contacted again and provided with an update on information about cultural resources that could potentially be affected by the proposed project.

PALEONTOLOGY

Field Survey/Records Search

A field reconnaissance and a records search of the USGS 1:24,000-scale quadrangle maps for paleontological resources along the proposed infrastructure alignment have not yet been completed.

Stratigraphic Inventory

A brief review of regional geologic mapping of the various rock formations near the proposed infrastructure has been performed. The following geologic maps at a scale of 1:250,000 were reviewed: Jennings and Strand 1959, Mathews and Burnett 1965, Smith 1992, Strand 1991, Wagner et al. 1987, Wagner et al. 1991, and Saucedo and Wagner 1992.

Paleontological Resource Assessment Criteria

The potential paleontological importance of the proposed infrastructure locations can be assessed by identifying the paleontological importance of exposed rock units within the study area. Because the aerial distribution of a rock unit can be easily delineated on a topographic map, this method is conducive to delineating parts of the study area that are of higher and lower sensitivity for paleontological resources and to delineating parts of the study area that may require monitoring during construction.

A paleontologically important rock unit is one that has a rating of high potential paleontological productivity and is known to have produced unique, scientifically important fossils. The potential paleontological productivity rating of a rock unit exposed at the project route refers to the abundance/densities of fossil specimens and/or previously recorded fossil sites in exposures of the unit in and near the project route. Exposures of a specific rock unit within the study area are most likely to yield fossil remains representing particular species in quantities or densities similar to those previously recorded from the unit in and near the proposed infrastructure locations.

Paleontological Resource Assessment by Rock Unit

Because a field survey, records search, and detailed review of geologic mapping have not yet been completed, providing a complete paleontological resources inventory or assessment of all of the site-specific rock units is not possible at this stage. However, the following partial assessment by rock unit is based on the information available and reviewed to date.

By definition, to be considered a fossil, an object must be more than 11,000 years old. Because Holocene rock formations (refer to Table 3.6-1 in Section 3.6.1, below) are less than 11,000 years old, these formations would not contain unique, scientifically important paleontological resources.

Remains of land mammals and plants have been found in the project region at various localities in deposits referable to the Modesto, Riverbank, Turlock Lake, Mehrten, and Ione Formations. Jefferson (1991a, 1991b) compiled a database of late Quaternary vertebrate fossils in California from published records, technical reports, unpublished manuscripts, information from colleagues, and inspection of museum paleontological collections at more than 40 public and private institutions. He listed numerous sites throughout the Sacramento and San Joaquin Valleys and the Sierra Nevada foothills where fossils have been recovered from these five geologic formations.

A brief search of the UCMP database (2011) indicates that thousands of vertebrate and plant fossils have been recorded at hundreds of locations throughout the Sacramento and San Joaquin Valleys from the Modesto, Riverbank, Turlock Lake, Mehrten, and Ione Formations. These localities include, but are not limited to, cities such as Yuba City, Grass Valley, Roseville, Rocklin, Sacramento, Ione, Plymouth, Stockton, Lodi, Lathrop, Tracy, Modesto, Turlock, Merced, Los Banos, Madera, Mendota, Fresno, Riverbank, and Chowchilla. Because of the large number of vertebrate and plant fossils recovered from these five geologic formations, these formations are considered paleontologically sensitive.

3.5.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) of 1966 and its implementing regulations (36 CFR 800, as amended) require federal agencies to consider the effects of their undertakings, or those they fund or permit, on properties that may be eligible for listing, or that are listed on the NRHP. The 36 CFR 60.4 regulations describe the criteria to evaluate cultural resources for inclusion in the NRHP. Cultural resources can be significant on the national, state, or local level. Such resources are required to retain integrity and must exhibit an association with broad patterns of our history, be associated with an important person, embody a distinctive characteristic, or yield information important to prehistory or history.

The NRHP is maintained by the Secretary of the Interior and is a register of districts, sites, buildings, structures and objects of significance in American history, architecture, archaeology, engineering, and culture. A property may be listed in the NRHP if it meets criteria for evaluation defined in 36 CFR 60.4:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:
>
> (a) That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) That are associated with the lives of persons significant in our past; or
>
> (c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess a artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (d) That have yielded, or may be likely to yield, information important in prehistory or history.

The 36 CFR 800 regulations, implementing Section 106, call for considerable consultation with the SHPO, Native American tribes, and interested members of the public throughout the process. The four principal steps are as follows:

1. Initiate the Section 106 process (36 CFR 800.3) in consultation with the SHPO.
2. Identify historic properties, resources eligible for inclusion in the NRHP (36 CFR 800.4).
3. Assess the effects of the undertaking to historic properties in the Area of Potential Effect (36 CFR 800.5).
4. Resolve adverse effects (36 CFR 800.6).

Adverse effects on historic properties often are resolved through preparation of a memorandum of agreement or a programmatic agreement developed in consultation with the lead federal agency, the SHPO, Native American

tribes, and interested members of the public. The Advisory Council on Historic Preservation (ACHP) is also invited to participate. For the proposed project, however, no adverse effects on historic properties are anticipated. ("Environmental Setting," above, contains further discussion.) Therefore, an agreement document and consultation with the ACHP would not be necessary. Cooperating federal agencies such as USACE and BLM would also participate in the Section 106 process through direct consultation with NTIA. NTIA has initiated consultation with the SHPO and Native Americans in accordance with the requirements of Section 106 of the NHPA.

On behalf of NTIA, AECOM sent a letter to the SHPO on February 23, 2011 that described the proposed project, described the APE and the scope of identification efforts, and that requested concurrence by the SHPO on the APE and the scope of identification efforts. On March 28, 2011 the SHPO responded with a letter that indicated concurrence with the APE and the scope of identification efforts. The SHPO letter also requested submission of the cultural resources inventory report and evidence of Native American consultation as soon as those are completed. Both letters are presented in Appendix G. Antiquities Act of 1906

The Antiquities Act of 1906 (Title 16 of the U.S. Code [USC], Sections 431–433) provides for fines or imprisonment of any person convicted of appropriating, excavating, injuring, or destroying any historic or prehistoric ruin or monument or other object of antiquity that falls under the jurisdiction of the federal government. No actions are required for compliance with this act.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) provides for increased involvement of Native Americans in archaeology and historic preservation. NAGPRA addresses the rights of lineal descendants and Indian tribes to Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony. These parties are to be consulted when such items are inadvertently discovered or intentionally excavated on federal or tribal lands. NAGPRA recognizes Native American "ownership" of these items. The NHPA amendments mandate tribal participation in the Section 106 process. A federal agency must consult with the tribal government or recognized representatives when its activities occur on a reservation and/or as part of an undertaking. Agencies also must consult with a tribe if an activity will affect a historic property to which the tribe attaches cultural or historic importance. More importantly, tribal historic preservation programs have the same legal status as state historic preservation programs. These stipulations are an acknowledgment that tribal sovereignty extends into the arena of cultural resource management and, therefore, are an extension of the government-to-government relationship between tribes and the federal government. The NHPA amendments also specify that "properties of traditional religious and cultural importance to Native Americans" qualify for inclusion in the NRHP (36 CFR 800.4). To a certain extent, this specification addresses the inability of the American Indian Religious Freedom Act to protect Native American sacred sites. This designation also expands the definition of "cultural resource" to include sites that may lack material remains. No actions are required for compliance with the NAGPRA unless human remains of Native American origin are discovered on federal land during construction of the proposed project.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (ARPA) of 1979, as amended, and its implementing regulations (43 CFR 7) established uniform definitions, standards, and procedures to be followed by all federal land managers in providing protection for archaeological resources located on public lands and Indian lands in the United States. ARPA requires a permit for lawful excavation and artifact collection, penalties for violations, and coordination with other laws governing cultural resources on public lands. Under the proposed project, no archaeological excavations are anticipated to occur on federal land and therefore ARPA does not likely apply. No action is required for compliance with the ARPA unless archaeological excavation on public land becomes necessary.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Public Resources Code, Section 21084.1

Under CEQA, public agencies must consider the effects of their actions on historical resources. CEQA defines a "historical resource" as any resource listed in or determined to be eligible for listing in the CRHR. The CRHR includes resources listed in or formally determined eligible for listing in the NRHP. Pursuant to PRC Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Under the State CEQA Guidelines, an impact on a cultural resource is considered significant if a project would result in an effect that may change the significance of the resource (PRC Section 21084.1). Demolition, replacement, substantial alteration, and relocation of historic properties are actions that would change the significance of an historical resource (14 CCR 15064.5). Before the level of significance of impacts can be determined and appropriate mitigation measures developed, the significance of cultural resources must be determined. The following steps are normally taken in a cultural resources investigation to comply with CEQA:

- Identify cultural resources.
- Evaluate the significance of the cultural resources using established thresholds of significance.
- Evaluate the effects of a project on all cultural resources.
- Develop and implement measures to mitigate the effects of the project on significant cultural resources.

As discussed in Chapter 1, "Introduction," CPUC is the state lead agency responsible for compliance with CEQA. CEQA requirements for identifying cultural resources and developing measures to avoid adverse effects on all significant cultural resources will be fulfilled in coordination with the requirements of Section 106 of the NHPA.

California Public Resources Code Section 5097.5

For those portions of the project route where construction would occur on state lands, state legislative protection for paleontological resources is provided under PRC Chapter 1.7, Section 5097.5, "Archaeological, Paleontological, and Historic Sites." This statute specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state land to preserve or record paleontological resources. The aforementioned code would apply because the proposed project could occur in areas that are considered sensitive for paleontological resources.

Professional Paleontological Standards

The Society of Vertebrate Paleontology (1995, 1996), a national scientific organization of professional vertebrate paleontologists, has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, specimen preparation, analysis, and curation. Most practicing professional paleontologists in the nation adhere to the Society of Vertebrate Paleontology assessment, mitigation, and monitoring requirements, as specifically spelled out in its standard guidelines. The aforementioned code would apply because the proposed project could occur in areas considered sensitive for paleontological resources.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

3.5.3 ANALYSIS METHODOLOGY

Methods employed for the cultural resources analysis included records searches at five regional Information Centers of the CHRIS and coordination and contact with Native American tribes in the study area to identify any interest or concerns they may have concerning the proposed project.

3.5.4 DISCUSSION

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Less-Than-Significant Impact. Numerous features of the built environment have been identified and recorded along the proposed route. In areas where new conduit would be installed, the types of built environment features that could be adversely affected include historical bridges, canals, railroads, and historical roads. Historical bridges could be affected by conduit attachment. Historical buildings would not be affected by conduit installation because no buildings are present within the proposed route and because historical setting changes would not result from placing the conduit underground.

Historical buildings could potentially be adversely affected by placement of cabinets adjacent to historical buildings, which could adversely affect the historical setting of a historical building.

Incorporation of Environmental Protection Measures 3.5-1, "Implement Specific Measures for Full Avoidance of Adverse Effects on Each Cultural Resource Potentially Eligible for Listing in the National Register of Historic Places or the California Register of Historical Resources," and 3.5-2, "Design Cabinet Facilities to Avoid Adverse Effects on the Historical Setting" as part of the project and as conditions of project approval would avoid or reduce to less-than-significant level impacts on historical architectural and built-environment features. The measures would require CVIN to complete a cultural resources inventory of the study area not previously surveyed and to implement avoidance measures in consultation with NTIA, federal cooperating agencies (e.g., USACE, BLM), CPUC, Caltrans, and the SHPO. The environmental protection measures would also ensure that the cabinets are designed to avoid adverse effects on the historical setting and that the conduits attached to historic bridges would not be visible from the top or side views of the bridges. As part of the environmental protection measures, the inventory and identification of avoidance measures must be conducted by qualified archaeologists. Therefore, this impact would be less than significant. No mitigation is required.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less-Than-Significant Impact. Numerous prehistoric, historical, and Native American archaeological sites have been previously identified and recorded along the proposed route. Although the proposed route is entirely within existing road and state highway rights-of-way and those rights-of-way are typically at least partially disturbed, intact archaeological remains (aboveground or buried) could still be present that could be adversely affected during plowing, trenching, excavating entry and exit pits for directional drilling, staging for construction, and lying down equipment. Potential adverse effects on archaeological sites and buried remains would be limited to construction areas where ground disturbance would occur in undeveloped areas and would not result from installing new fiber in existing conduits, using existing fiber, or placing cabinets at developed locations. Project operation and maintenance would not involve ground-disturbing activities, and therefore would not result in potential impacts on known cultural and historical resources.

Incorporation of Environmental Protection Measures 3.5-1 , 3.5-3, and 3.5-4. (Respectively, these environmental protection measures are as follows: "Implement Specific Measures for Full Avoidance of Adverse Effects on Each Cultural Resource Potentially Eligible for Listing in the National Register of Historic Places or the California Register of Historical Resources;" "Prepare and Implement an Archaeological Monitoring Plan;" and

"Strictly Follow Procedures for the Discovery of Unanticipated Cultural Resources, and If Discovered, Immediately Cease Construction Activities, Notify the National Telecommunications Information Administration and California Public Utilities Commission, and Implement all Appropriate Avoidance Measures or Other Appropriate Mitigation in Consultation with the Lead Agencies and State Historic Preservation Officer.") as part of the project and as conditions of project approval would avoid impacts on archaeological and Native American resources by requiring CVIN to implement avoidance measures in consultation with NTIA, federal cooperating agencies (USACE, BLM), CPUC, Caltrans, and the SHPO. CVIN would prepare and implement an archaeological monitoring plan and strictly follow procedures for discovery of cultural resources, which includes immediately stopping construction within 100 feet of the find, conducting appropriate notification and consultation, and implementing avoidance or mitigation measures. As part of the environmental protection measures, identification of avoidance measures must be conducted by qualified archaeologists. Therefore, this impact would be less than significant. No mitigation is required.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-Than-Significant Impact. The proposed infrastructure would be installed within numerous different rock formations, many of which are described in Table 3.5-1. However, a complete inventory of paleontological resources specific to the study area, an assessment by rock unit, a records search, and a field reconnaissance have not yet been performed. Based on the large number of vertebrate and plant fossils recovered throughout the Sacramento and San Joaquin Valleys, and to some extent within the Sierra Nevada foothills, the Modesto, Riverbank, Turlock Lake, Mehrten, and Ione Formations are considered paleontologically sensitive. The potential exists that other rock formations underlying the proposed infrastructure may also be paleontologically sensitive. Although the proposed infrastructure would be installed within existing road and state highway rights-of-way and at existing facilities where cabinets would be installed, and those rights-of-way and proposed cabinet locations are typically at least partially disturbed, it is nevertheless possible that intact, unique paleontological resources could be present within paleontologically sensitive rock formations. Those resources could be damaged or destroyed during earthmoving activities.

Incorporation of Environmental Protection Measure 3.5-6, "Perform a Site-Specific Paleontological Resources Inventory and Assessment by Rock Unit and Conduct Construction Worker Personnel Education and Full-Time Monitoring in Paleontologically Sensitive Areas," and Environmental Protection Measure 3.5-7, "Stop Work If Paleontological Resources Are Encountered and Prepare and Implement a Recovery Plan," as part of the project and as conditions of project approval would reduce to a less-than-significant level the construction-related impacts on paleontological resources. Records searches, field reconnaissance, and a full assessment of paleontological sensitivity by rock unit would be prepared; construction workers would be alerted to the possibility of encountering paleontological resources; full-time monitoring during earthmoving activities would occur in paleontologically sensitive rock formations; and in the event that resources were encountered, construction would cease and fossil specimens would be recovered and recorded and would undergo appropriate curation. Therefore, this impact would be less than significant. No mitigation is required.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less-Than-Significant Impact. Although the proposed route is entirely within existing road and state highway rights-of-way and those rights-of-way are typically at least partially disturbed, intact buried human remains that were not identified before construction began could be present. These buried human remains could be adversely affected during plowing, trenching, and excavation of entry and exit pits for directional drilling. Potential adverse effects on human remains would be limited to construction areas where ground disturbance would occur in undeveloped areas but would not result from installing new fiber in existing conduits, using existing fiber, or placing cabinets at developed locations.

Incorporation of Environmental Protection Measure 3.5-5, "Strictly Follow Procedures for the Discovery of Unanticipated Human Remains, and If Discovered, Immediately Cease Construction Activities, Notify the National Telecommunications Information Administration, California Public Utilities Commission, and the Affected County Coroner, and Implement All Appropriate Mitigation in Consultation with the Native American Heritage Commission, If the Remains are Determined to be Native American," as part of the project and as a condition of project approval would result in avoiding potential impacts on buried human remains. CVIN would strictly follow procedures for discovery of human remains, which includes immediately stopping construction within 100 feet of the find, conducting appropriate notification and consultation, and implementing avoidance or mitigation measures. As part of the environmental protection measure, a qualified archaeologist must be notified to recommend appropriate treatment measures. Therefore, this impact would be less than significant. No mitigation is required.

3.6 GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Geology and Soils. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to California Geological Survey Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

This section describes the geological conditions and soils that could be directly or indirectly affected by implementing the proposed project. The study area for this analysis is composed of areas potentially affected directly or indirectly by construction or operation of the proposed project, typically during ground-disturbing activities. As such, this analysis focuses on issues related to the rights-of-way of roads and state highways along the proposed route, and to the sites of existing anchor and client institutions, rather than conditions and resources outside of the proposed rights-of-way and away from client institution sites. The fiber optic infrastructure would be located in the northern Sacramento Valley, northern Sierra Nevada foothills, and northern and southern San Joaquin Valleys.

3.6.1 ENVIRONMENTAL SETTING

REGIONAL GEOLOGY

Sacramento and San Joaquin Valleys

The Sacramento and San Joaquin Valleys make up the Great Valley geomorphic province. The Great Valley is a forearc basin, composed of thousands of feet of sedimentary deposits, that has undergone periods of subsidence and uplift over millions of years. The Great Valley basin began to form during the Jurassic period as the Pacific oceanic plate was subducted underneath the adjacent North American continental plate. In the western portion of the Great Valley, Upper Jurassic to Upper Cretaceous rock sequences rest on Upper Jurassic oceanic crust sequences. In contrast, the eastern portion of the Great Valley is composed of shallow Pleistocene nonmarine deposits over a layer of Cretaceous marine/deltaic deposits only a few hundred feet thick, which rests on the metamorphic and igneous rocks of the Sierra Nevada—the western edge of the continental margin.

During the Jurassic and Cretaceous periods of the Mesozoic era, the Great Valley existed in the form of an ancient ocean. By the end of the Mesozoic, the northern portion of the Great Valley began to fill with sediment as tectonic forces caused uplift of the basin. Geologic evidence suggests that the Sacramento and San Joaquin Valleys gradually separated into two separate water bodies as uplift and sedimentation continued. By the time of the Miocene epoch (approximately 24 million years ago), sediments deposited in the Sacramento Valley were mostly of terrestrial origin. In contrast, the San Joaquin Valley continued to be inundated with water for another 20 million years, as indicated by marine sediments dated to the late Pliocene (approximately 5 million years ago).

Most of the surface of the Great Valley is covered with Holocene and Pleistocene-age alluvium. This alluvium is composed of sediments from the Sierra Nevada to the east and the Coast Ranges to the west, which were carried by water and deposited on the valley floor. Siltstone, claystone, and sandstone are the primary types of sedimentary deposits.

Sierra Nevada Foothills

The Sierra Nevada geomorphic province trends north-northwest from Bakersfield to Lassen Peak, and includes the Sierra Nevada and a broad belt of western foothills. The Sierra Nevada block is composed of northwest-trending belts of metamorphic, volcanic, and igneous rocks that have undergone intense deformation, faulting, and intrusion. Active faults that mark the eastern edge of the Sierra Nevada have resulted in upthrusting and tilting of the entire Sierra Nevada block in the last 5 million years—steeply on the eastern edge (adjacent to the Mono Basin) and gently along the western edge (where the proposed infrastructure would be located). The gently rolling Sierra Nevada foothills are composed of metamorphosed sedimentary rocks that have been intruded by igneous rocks. The rock formations that make up the western edge of the Sierra Nevada block (where the proposed project would occur) likely originally formed as a volcanic arc that was later accreted (added) to the western margin of the continent during the Jurassic period.

LOCAL GEOLOGY

Table 3.6-1 provides a brief description of many of the geologic formations that underlie the proposed route, based on a review of regional geologic maps. However, all the geologic formations that underlie the proposed route have not yet been determined.

SEISMICITY

Alquist-Priolo Earthquake Fault Zones are areas of the state where surface rupture could damage structures in the event of an earthquake along an active fault in the vicinity (CGS 1999a). Of the 17 affected counties, only Stanislaus, Merced, Fresno, and Kern Counties contain Alquist-Priolo fault zones. However, the fault zones in

Table 3.6-1 Representative Sample of Geologic Formations Underlying the Proposed Route		
Estimated Age	Formation Name	Description
Sacramento and San Joaquin Valleys		
Holocene	Dune Sand	Inland sand dunes in the form of ridges, small hills, and knolls found on ancestral lake beds and outwash plains of river systems.
	Alluvium	Poorly sorted materials deposited by streams, including some dissected fans along the margins of the Great Valley. Composed primarily of coarse granitic fanglomerate along the eastern front of the Sierra Nevada. Alluvial fill in upland meadow areas.
	Stream Channel Deposits	Sediments along river channels and major streams, including adjacent natural levees.
Pleistocene	Modesto (Fan Deposits)	Alluvial terraces, sometimes alluvial fans, and valleys; can be divided into upper and lower members. Upper member consists of unconsolidated, unweathered gravel, sand, silt, and clay. Lower member consists of unconsolidated, slightly weathered gravel, sand, silt, and clay.
	Basin Deposits	Sediments deposited during flood stages of major streams in the area between natural stream levees and fans.
	Quaternary Lake Deposits	Fine sand, silt, and clay deposited in Tulare Lake.
	Quaternary Nonmarine Terrace Deposits	Unconsolidated sand, silt, clay, and gravel that form stream terraces.
	Riverbank (Pleistocene Nonmarine)	Weathered reddish gravel, sand, and silt that form alluvial terraces and fans. Contains a higher percentage of mafic rock fragments in the Sacramento Valley; in the San Joaquin Valley it consists of more arkosic alluvium. Lower member is composed of red semiconsolidated gravel, sand, and silt and consists of remnants of dissected alluvial fans. Upper member consists of unconsolidated but compact, dark-brown to red alluvium composed of gravel, sand, silt, and minor amounts of clay.
	Turlock Lake (Plio-Pleistocene Nonmarine)	Partially consolidated sand, silt, and gravel derived mainly from Sierran granite and metamorphic rocks.
Sierra Nevada Foothills [a]		
Pliocene-Miocene	Mehrten	Sandstone, siltstone, and conglomerate that are inbedded with andesitic breccia from volcanic lava flows that occurred in the Sierra Nevada mountains and foothills.
Miocene-Oligocene	Valley Springs	Rhyolitic tuff, sandstone, claystone, and conglomerate.
Eocene	Ione	A 200-mile-long series of isolated exposures along the western foothills of the Sierra Nevada, from Oroville in Butte County southward to Friant in Fresno County. Composed of fluvial, estuarine, and shallow marine deposits consisting of quartzose sandstone inbedded with kaolinite clay.
Jurassic	Gabbroic Rocks	Coarse-grained, dark colored, intrusive igneous rocks that contain feldspar, augite, and sometimes olivine.
	Mesozoic Granitic Rocks	Predominantly granite to granodiorite.
	Mesozoic Plutonic Rocks	Quartz diorite, tonalite, trondhjemite, and quartz monzonite.
	Mariposa	Slate, metagraywacke, and metaconglomerate.
	Salt Springs Slate	Predominantly dark gray slate, with some mica schist.
	Metavolcanic Rock	Andesite to basaltic pyroclastic rocks with some flow rocks; contains greenschist in some locations.
	Smartville Complex	A volcanic arc assemblage containing sedimentary, volcanic, hypabassal, and plutonic rocks.
	Central Belt	An assemblage of various rock types, somewhat metamorphosed, including ophiolitic mélange, chert-argilite, and volcanic-plutonic arc complexes.

Table 3.6-1 Representative Sample of Geologic Formations Underlying the Proposed Route		
Estimated Age	Formation Name	Description
Paleozoic	Ultramafic Rocks	Igneous and meta-igneous rocks with very low silica content and usually greater than 90% mafic minerals (i.e., dark colored, high magnesium and iron content). May be partly to completely serpenitized.
	Calaveras Complex	Includes two to three submembers that contain chert, argillite, slate, andesite, tuff, breccia, basalt flows, crystalline limestone, and dolomite.
	Melange Belt	(Is) member consists of crystalline limestone and dolomite.
		(Ms) member consists of slate, graywacke, conglomerate, pebbly mudstone, some pyroclastic rocks, quartzite, and chert.
		(Mv) member consists of mafic pyroclastic and flow rocks.
Note: List is not all inclusive. [a] Some of the formations found in the Sacramento and San Joaquin Valleys also occur in the Sierra Nevada foothills. Sources: Helley and Harwood 1985; Wagner et al. 1987; Matthews and Burnett 1991; Strand 1991; Wagner et al. 1991; Jennings and Strand 1992; Saucedo and Wagner 1992; Smith 1992; data compiled by AECOM in 2011		

Stanislaus, Merced, and Fresno Counties are located in the Diablo Range, more than 20 miles west of the closest points of the proposed route—the segment between Stockton and Modesto. No cities along this segment are considered affected. Kern County contains an Alquist-Priolo fault zone, which is located in the city of Bakersfield (along the southernmost portion of the proposed fiber optic route). The White Wolf Fault and several smaller branch faults, such as the Premier Fault and the Kern Front Fault, all of which have been active within the last 200 years, are located in the Bakersfield area.

GROUND SHAKING

When ground shaking (i.e. motion that occurs as a result of energy released during faulting) occurs, it can result in the damage or collapse of buildings and other structures. Ground shaking covers a wide area and is greatly influenced by the magnitude of the earthquake, the location of the epicenter, the character and duration of the ground motion, soil conditions, and depth to groundwater.

The intensity of ground shaking depends on the distance from the earthquake's epicenter to the site, the magnitude of the earthquake, site soil conditions, and the characteristics of the source. Ground motions from seismic activity can be estimated by probabilistic method at specified hazard levels and by site-specific design calculations using a computer model. The California Geological Survey's Probabilistic Seismic Hazards Assessment Model indicates a minimum peak horizontal acceleration of 0.1 to 0.2*g* (where *g* is the percentage of gravity) along most of the proposed route, and a potential acceleration of 0.2 to 0.3*g* in the areas near Bakersfield, with a 10% probability of earthquake occurrence in a 50-year time frame (also known as the "Design Basis Earthquake") for use in earthquake-resistant design. Stated another way, these calculations indicate there is a 1-in-10 probability that an earthquake will occur within 50 years that would result in a peak horizontal ground acceleration exceeding 0.1 to 0.3*g*.

LANDSLIDES

Landslide risk is low to nonexistent along the segments of the proposed route located in the northern Sacramento Valley and the northern and southern San Joaquin Valleys, where the terrain is relatively flat. Areas of moderate landslide incidence (1.5% to 15% of area involved) are located in the Sierra Nevada foothill counties (Nevada, Placer, El Dorado, Calaveras, and Tuolumne) (USGS 2007).

LIQUEFACTION

Available liquefaction maps do not cover the affected counties. Most of the proposed route is located in areas of soft rock or alluvium (CGS 1999b). Unconsolidated, Holocene-age alluvium can be subject to liquefaction, particularly where groundwater is near the surface. However, the risk is low in areas of low seismic activity and low ground-shaking potential, as is the case along the proposed route except the segment in Kern County. A portion of south Bakersfield, between about Brundage Lane and DiGiorgio Road, contains local areas that could be subject to liquefaction during a strong earthquake, with attendant ground rupture and potential subsidence (Kern County 2007). In Madera, Fresno, Tulare, and Kern Counties, the proposed route could cross areas of ongoing subsidence caused by excessive groundwater pumping (USGS 2005).

SOILS

Soil types in the project study area range from very claylike to well-drained alluvial soils, depending on their location within the valleys or foothills. Shrink-swell potential is the relative change in volume to be expected with changes in moisture content, that is, the extent to which the soil shrinks as it dries out or swells when it gets wet. The extent of shrinking and swelling is influenced by the amount and kind of clay in the soil. Shrinking and swelling of soils often causes damage to building foundations, roads, and other structures. A high shrink-swell potential indicates a hazard to maintenance of structures built in, on, or with material having this rating. Moderate and low ratings lessen the hazard accordingly. A detailed study of soils in the study area has not been conducted; however, described below are the most common soils that the proposed route would cross and that are found where client institutions are located. In the Sacramento and San Joaquin Valleys, soils tend to be a mix of taxonomic classes, are typically well-drained, and have shrink-swell potentials ranging from slight to severe (Table 3.6-2). In the Sierra Nevada foothills, soils tend to be a mix of taxonomic classes, are typically well-drained or excessively drained, and also have shrink-swell potentials ranging from slight to severe (Table 3.6-2). Soils with moderate to high shrink-swell potential are considered to be potentially expansive soils. The proposed route is anticipated to cross expansive soils.

3.6.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Clean Water Act

The CWA is relevant to the proposed project as it relates to soil erosion. This regulation is discussed in Section 3.9, "Hydrology and Water Quality."

Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States by establishing and maintaining an effective program to reduce earthquake hazards. To accomplish this goal, the act established the National Earthquake Hazards Reduction Program. This program was substantially amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives.

The mission of the National Earthquake Hazards Reduction Program is to improve understanding, characterization, and prediction of hazards and vulnerabilities; improve building codes and land use practices; reduce risk through postearthquake investigations and education; develop and improve design and construction techniques; improve mitigation capacity; and accelerate application of research results. The NEHRPA designates the Federal Emergency Management Agency (FEMA) as the program's lead agency and assigns several planning,

Table 3.6-2
Major Soil Series in the Proposed Route

Soil Series	Soil Taxonomic Class	Drainage and Permeability	Shrink-Swell Potential
Sacramento and San Joaquin Valleys			
Cometa	Fine, mixed, superactive, thermic Typic Palexeralfs	Moderately well or well drained; slow to medium runoff; very slow permeability	Severe
Honcut	Coarse-loamy, mixed, superactive, nonacid, thermic Typic Xerorthents	Well drained; slow to medium runoff; moderately rapid permeability	Slight
Madera	Fine, smectitic, thermic Abruptic Durixeralfs	Well or moderately well drained; medium to very slow runoff; very slow permeability	Moderate
San Emigdio	Coarse-loamy, mixed, superactive, calcareous, thermic Typic Xerofluvents	Well drained; negligible to low runoff; moderately rapid permeability	Slight
San Joaquin	Fine, mixed, active, thermic Abruptic Durixeralfs	Well and moderately well drained; medium to very high runoff; very slow permeability	Severe
Yettem	Coarse-loamy, mixed, superactive, thermic Entic Haploxerolls	Well drained; negligible or very low runoff; moderately rapid permeability	Slight
Sierra Nevada Foothills			
Ahwahnee	Coarse-loamy, mixed, active, thermic Mollic Haploxeralfs	Well drained; runoff is slow on the gentle slopes and very rapid on the very steep slopes; moderately rapid permeability	Slight
Aiken	Fine, parasesquic, mesic Xeric Haplohumults	Well drained; slow to rapid runoff; moderately slow permeability	Moderate
Auberry	Fine-loamy, mixed, semiactive, thermic Ultic Haploxeralfs	Well drained; slow to rapid runoff; moderately slow permeability	Moderate
Auburn	Loamy, mixed, superactive, thermic Lithic Haploxerepts	Well drained; low to very high runoff; moderate permeability	Slight
Boomer	Fine-loamy, mixed, superactive, mesic Ultic Haploxeralfs	Well drained; slow to very rapid runoff; moderately slow permeability	Moderate
Cohasset	Fine-loamy, mixed, superactive, mesic Ultic Haploxeralfs	Well drained; slow to rapid runoff; moderate permeability	Moderate
Delpiedra	Loamy, magnesic, thermic, shallow Mollic Haploxeralfs	Well to somewhat excessively drained; medium to rapid runoff; moderate permeability	Moderate
Henneke	Clayey-skeletal, magnesic, thermic Lithic Argixerolls	Well drained; medium to very high runoff; moderately slow and slow permeability	Moderate
McCarthy	Medial-skeletal, amorphic, mesic Humic	Well drained, slow to rapid runoff; moderately rapid permeability	Slight
Sites	Fine, parasesquic, mesic Xeric Haplohumults	Well-drained; low to very high runoff; moderately slow permeability	Moderate
Whiterock	Loamy, mixed, superactive, nonacid, thermic Lithic Xerorthents	Somewhat excessively drained, slow to rapid runoff, moderate permeability	Moderate

Source: NRCS 2006

coordinating, and reporting responsibilities. Other NEHRPA agencies are the National Institute of Standards and Technology, National Science Foundation, and USGS. The proposed project would occur near known earthquake faults, so the aforementioned act would apply.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (PRC Sections 2621–2630) was passed in 1972 to mitigate the hazard of surface faulting to structures designed for human occupancy. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Act requires the State Geologist to establish regulatory zones, known as earthquake fault zones, around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults. The proposed project would potentially occur near known earthquake faults, so the aforementioned act would apply.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (PRC Sections 2690–2699.6) addresses earthquake hazards from nonsurface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards. The act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils. The proposed project would potentially occur near known earthquake faults, so the aforementioned act would apply.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

3.6.3 ANALYSIS METHODOLOGY

Impacts on geology and soils that could result from the proposed project were evaluated in relation to construction and operational activities. These activities were evaluated based on general locations and described construction practices. Geologic and seismic hazards that could potentially result from installation of the proposed fiber optic communications network, and that could expose people to injury and infrastructure to damage, were considered in terms of adverse impacts on public safety.

3.6.4 DISCUSSION

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)

Less-Than-Significant Impact. With the exception of Bakersfield (discussed below), most of the facilities associated with the proposed project would be located outside of Alquist-Priolo Earthquake Fault Zones. Portions of Nevada, Placer, El Dorado, Calaveras, and Tuolumne Counties contain areas of moderate landslide incidence. However, because the ground-shaking hazard in these areas is low, the susceptibility of soils and sediments to seismic-related ground failure, liquefaction, lateral spreading, or seismically induced landslides is low. Because the proposed fiber optic conduit would be buried underground, nonseismically induced landslides would not affect the proposed facilities. In addition, because the proposed route and associated facilities would be located in the rights-of-way of roads and state highways, and at existing developed anchor and client institutions, the risk of localized ground failure attributable to preexisting geologic conditions would be assumed to have already been reduced through previous grading, compaction, and use of engineered fills.

The southernmost portion of the proposed route would be constructed in Bakersfield, which is located in an Alquist-Priolo Earthquake Fault Zone, and which contains areas that could liquefy in the event of severe ground shaking. However, because the proposed facilities consist of underground fiber optic cabling and equipment cabinets, any surface fault rupture or seismic-related ground failure, including liquefaction and landslides, would not expose people or structures to potential substantial adverse effects. In addition, because the proposed facilities would be located in the rights-of-way of public roadways, and at existing developed anchor and client institutions, the risk of localized liquefaction or subsidence would be assumed to have been reduced through previous grading, compaction, and use of engineered fills. Additionally, the proposed route and cabinet sites would likely occur on expansive soils (moderate to high shrink-swell potential as defined in Table 18-1-B of the Uniform Building Code), which could result in damage to concrete slabs associated with the cabinet sites if the expansion and contraction of soils could exert enough pressure to result in cracking, settlement, and uplift. However, construction would be conducted in accordance with California Building Code and other applicable grading regulations and practices associated with compaction and treatment of soils along the proposed alignment, as required by Environmental Protection Measure 2, " Comply With All Applicable Laws, Ordinances, Regulations, and Policies,", which is part of the project and a condition of project approval; therefore, there would be little effect on any structures that are part of the proposed project. In addition, no habitable structures are included as part of the proposed project; therefore, there would be no risk to foundations built on expansive soils or any risk to people or structures.

For the reasons stated above, the risk of exposure of the proposed facilities to geologic hazards and expansive soils would be low. In addition, because the proposed route would be constructed in developed areas where the ground has already been stabilized by previous construction, the possibility that trenching to install the fiber optic cables would cause geologic hazards is remote. Therefore, this impact would be less than significant. No mitigation is required.

ii) Strong seismic ground shaking?

Less-Than-Significant Impact. See response to question (a-i), above.

iii) Seismic-related ground failure, including liquefaction?

Less-Than-Significant Impact. See response to question (a-i), above.

iv) Landslides?

Less-Than-Significant Impact. See response to question (a-i), above.

b) Result in substantial soil erosion or the loss of topsoil?

Less-Than-Significant Impact. Construction of the proposed project would involve ground-disturbing construction activities, including vegetation clearing, trenching, directional drilling, soil placement, incorporation of plantings, and demobilization/cleanup. These activities could expose disturbed areas to erosion caused by wind or early-season rainfall events. Wind or rainfall of sufficient intensity could dislodge soil particles from the soil surface. Once particles are dislodged, substantial localized erosion could occur. Therefore, substantial erosion or loss of topsoil has the potential to occur during construction of the proposed project. However, Environmental Protection Measure 3.9-1, "Prepare and Implement Storm Water Pollution Prevention Plans," requires implementation of a storm water pollution prevention plan and associated BMPs that are specifically designed to reduce erosion. With incorporation of this environmental protection measure as part of the project and as a condition of project approval, this impact would be less than significant. No mitigation is required.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less-Than-Significant Impact. See response to question (a-i), above.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?

Less-Than-Significant Impact. See response to question (a-i), above.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The proposed project would not involve the use of septic tanks or alternative wastewater disposal systems; therefore, no impact would occur. No mitigation is required.

3.7 GREENHOUSE GAS EMISSIONS

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI.	**Greenhouse Gas Emissions.** Would the project:				
	a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
	b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

"Global climate change" refers to changes in the normal weather patterns of the earth, as measured by alterations in wind patterns, storms, precipitation, and temperature relative to historical averages. Evidence of changes to the global climate system as a result of anthropogenic (human-made) emissions is now considered to be unequivocal (IPCC 2007), as global surface temperature has increased approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. The global average temperature is projected to continue to increase between 2°F and 11°F over the next 100 years. For this reason, potential increases in GHG emissions as a result of continued development, such as the proposed project, are evaluated for their potential contribution to this trend.

3.7.1 ENVIRONMENTAL SETTING

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. The largest contributor to GHG emissions is the burning of fossil fuels. A portion of the solar radiation that enters the earth's atmosphere is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. Infrared radiation is absorbed by GHGs; as a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth. Without the naturally occurring greenhouse effect, Earth would not be able to support life as we know it.

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The following gases are widely seen as the principal contributors to human-induced global climate change:

- carbon dioxide (CO_2),
- methane (CH_4),
- nitrous oxide (N_2O),
- hydrofluorocarbons (HFC),
- perfluorocarbons (PFC), and
- sulfur hexafluoride (SF_6).

GHG emissions related to human activities are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the earth's atmosphere and oceans, with corresponding effects on global circulation patterns and climate (IPCC 2007). These changes in the climate could affect local weather patterns by changing the duration and intensity of precipitation, causing shorter periods of snow storage in the mountains, and intensifying the runoff period, thus creating increased flooding in low-lying areas.

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. GHGs with emissions rates lower than that of CO_2 may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO_2. The concept of CO_2 equivalent (CO_2e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation.

3.7.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Supreme Court Ruling on California Clean Air Act Waiver

EPA is the federal agency responsible for implementing the CAA. The U.S. Supreme Court ruled on April 2, 2007, that CO_2 is an air pollutant as defined under the CAA, and that EPA has the authority to regulate GHG emissions. This ruling has spurred EPA to create federal regulations that apply to GHG emission sources. See the discussion of Assembly Bill (AB) 1493 under "State Plans, Policies, Regulations, and Laws," below, for further information about the CCAA waiver. Because implementing the proposed project would cause the release of GHG emissions, this regulation applies.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness that even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way, and that there is a real potential for severe, adverse environmental, social, and economic effects in the long term. Every nation emits GHGs and therefore makes an incremental cumulative contribution to global climate change; thus, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions. Because the project study area is located in California, ARB has jurisdiction over the project with regard to GHG emission issues.

Assembly Bill 1493

In 2002, then-Governor Gray Davis signed AB 1493 (Chapter 200, Statutes of 2002), which required that ARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the state."

In December 2004, a group of car dealerships, automobile manufacturers, and trade groups representing automobile manufacturers filed suit against ARB to prevent enforcement of Title 13, 13 CCR Sections 1900 and 1961, as amended by AB 1493, and 13 CCR 1961.1. The automakers' suit in the U.S. District Court for the Eastern District of California (*Central Valley Chrysler-Jeep et al. v. Catherine E. Witherspoon, in Her Official Capacity as Executive Director of the California Air Resources Board et al.*) contended that California's implementation of regulations effectively regulating vehicle fuel economy violates various federal laws, regulations, and policies.

On December 12, 2007, the court rejected the automakers' claim, finding that if California receives appropriate authorization from EPA (the last remaining factor in enforcing the standard), these regulations would be consistent with, and have the force of, federal law. This authorization to implement more stringent standards in California was requested in the form of a CAA Section 209(b) waiver in 2005. For a time thereafter, EPA failed to grant California authorization to implement the standards. Then-Governor Arnold Schwarzenegger and then-

Attorney General (now Governor) Edmund G. Brown Jr. filed suit against EPA for the delay. In December 2007, EPA Administrator Stephen Johnson denied California's request for the waiver to implement AB 1493. Johnson cited the need for a national approach to reducing GHG emissions, the lack of a "need to meet compelling and extraordinary conditions," and the emissions reductions that would be achieved through the Energy Independence and Security Act of 2007 as the reasoning for the denial (Office of the White House 2009).

The State of California filed suit against EPA for its decision to deny the CAA waiver. The incoming administration of President Barack Obama directed EPA to reexamine its denial of California's CAA waiver and past opposition to regulating GHG emissions. California received the waiver on June 30, 2009. With the waiver, California was granted the authority to implement more stringent GHG standards for vehicles in California, which would affect the fuel efficiency and GHG emissions associated with project-related vehicles. AB 1493 applies to the proposed project because implementing the project would generate GHG emissions.

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger signed Executive Order S-3-05, which sets forth the following series of target dates by which statewide emission of GHGs would be progressively reduced: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80% below 1990 levels. Executive Order S-3-05 applies to all activities and projects occurring within California. This order applies to the proposed project because implementing the project would generate GHG emissions.

Assembly Bill 32

In 2006, California enacted the California Global Warming Solutions Act of 2006 (AB 32) (Chapter 488, Statutes of 2006; California Health and Safety Code, Section 38500 et seq.). This law requires ARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020.

AB 32 establishes a timetable for ARB to adopt emissions limits, rules, and regulations designed to achieve the intent of the act. To meet these goals, California must reduce its GHGs by approximately 30% below projected 2020 business-as-usual emissions levels, or about 15% below today's levels (ARB 2008a:ES-1). In December 2008, ARB adopted its *Climate Change Scoping Plan* (AB 32 Scoping Plan), which estimates a reduction of approximately 169 million metric tons (MMT) CO_2e from 2020 business-as-usual emissions of 596 MMT CO_2e.

Approximately one-third of the emissions reductions strategies fall within the transportation sector. These strategies include GHG standards for California light-duty vehicles, the Low Carbon Fuel Standard, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, medium and heavy-duty vehicle efficiency measures, and high-speed rail. These measures are expected to reduce GHG emissions by 62.3 MMT CO_2e (ARB 2008a). Emissions from the electricity sector are expected to reduce emissions by another 49.7 MMT CO_2e (ARB 2008a). Reductions from the electricity sector are associated with energy efficiency (e.g., appliances, technology, policy, and standards), the Renewable Portfolio Standard (33% renewable energy by 2020), and the Million Solar Roofs Program (AB 1470). Other emissions reductions are expected from industrial sources, agriculture, forestry, recycling and waste reduction, water use reduction, and emissions reductions from cap-and-trade programs. State and local government actions and regional GHG targets are also expected to yield GHG reductions.

Measures that could become effective during implementation of the proposed project pertain to construction-related equipment and building, and energy efficiency of appliances. Implementation of some proposed measures will require new legislation; some proposed measures will require subsidies, some have already been developed, and some will require additional evaluation and quantification. Additionally, some emissions reduction strategies may require their own environmental review under CEQA or NEPA. Applicable measures that are ultimately adopted would become effective during implementation of the proposed project, and depending on its timeline,

the proposed project could be subject to these requirements. It should be noted that ARB has not determined the level of GHG emission reductions recommended for local government operations. The AB 32 Scoping Plan includes an estimate of GHG emission reductions from local land use changes; however, these reductions are not intended to represent the regional emission reduction targets of SB 375, which are discussed further below. The regional targets and associated GHG emission reductions for SB 375 will be established by ARB in collaboration with the Regional Target Advisory Committee and a public consultation process with metropolitan planning organizations and other stakeholders.

AB 32 has established a legal requirement to reduce GHG emissions and a plan (the AB 32 Scoping Plan) to achieve the targeted reductions. The proposed project would be required to be consistent with the goals and applicable measures of the AB 32 Scoping Plan. AB 32 and its scoping plan apply to the proposed project because implementing the project would generate GHG emissions.

Executive Order S-1-07

Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, at more than 40% of statewide emissions. This executive order establishes a goal to reduce the carbon intensity of transportation fuels sold in California by a minimum of 10% by 2020. This order also directed ARB to determine whether this Low Carbon Fuel Standard could be adopted as a discrete early-action measure after meeting the mandates in AB 32. ARB adopted the Low Carbon Fuel Standard on April 23, 2009. Implementing Executive Order S-1-07 would affect the fuel-related construction and operational activities of the proposed project. This order applies to the proposed project because implementing the project would generate transportation-related GHG emissions.

Senate Bills 1078 and 107 and Executive Orders S-14-08 and S-21-09

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20% of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Energy Standard to 33% renewable power by 2020. Under this executive order, Governor Schwarzenegger planned to propose legislative language codifying the new higher standard (Office of the Governor 2008). In September 2009, Governor Schwarzenegger continued California's commitment to the Renewable Energy Standard by signing Executive Order S-21-09, which directs ARB under its AB 32 authority to enact regulations to help the state meet its Renewable Energy Standard goal of 33% by 2020. Implementing these standards would affect the GHG intensity of electricity consumption in California. SBs 1078 and 107 and Executive Orders S-14-08 and S-21-09 apply to the proposed project because implementing the project would generate GHG emissions and require the use of existing electrical power sources.

Although the proposed project is not expected to increase electricity consumption, the GHG emissions associated with operations would be reduced because implementing SB 1078, SB 107, and Executive Orders S-14-08 and S-21-09 reduces the average GHG intensity of electricity consumption.

Senate Bill 97

SB 97, signed in August 2007 (Chapter 185, Statutes of 2007), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research to prepare, develop, and transmit to the California Natural Resources Agency by July 1, 2009, guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA. The California Natural Resources Agency was required to certify or adopt those guidelines by January 1, 2010. On April 13, 2009, the Governor's Office of Planning and Research submitted to the Secretary for Natural Resources its proposed amendments to the State CEQA Guidelines for GHG emissions, as required by SB 97. These amendments to the State CEQA Guidelines provide guidance to public agencies regarding analysis and

mitigation of impacts of GHG emissions in draft CEQA documents. On December 30, 2009, the Natural Resources Agency adopted the proposed amendments to the State CEQA Guidelines, as required by SB 97. After being reviewed by the Office of Administrative Law, the amendments were transmitted to the Secretary of State for inclusion into the CCR, then became effective March 18, 2010. The amendments to the State CEQA Guidelines have been incorporated into this analysis accordingly. SB 97 applies to the proposed project because implementing the project would generate GHG emissions.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

Feather River Air Quality Management District

In June 2010, the FRAQMD updated its Indirect Source Review Guidelines, which provide technical guidance for CEQA air quality assessments within its jurisdiction. This update also included a section addressing GHGs and climate change. FRAQMD recommends that projects evaluate their GHG effects using the amendments made to the environmental checklist form in Appendix G of the State CEQA Guidelines, as amended. The section also suggests using resources from the California Natural Resources Agency, Attorney General's Office, and CoolCalifornia.org, among others, to evaluate GHG emissions. FRAQMD has not yet established any specific quantitative or qualitative thresholds of significance for GHGs and climate change. Portions of the project study area are located in Sutter and Yuba Counties, under FRAQMD jurisdiction.

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley APCD adopted the *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* (San Joaquin Valley APCD 2009a) and the *District Policy—Addressing GHG Emission Impacts for Stationary Source Projects under CEQA When Serving as the Lead Agency* (San Joaquin Valley APCD 2009b). The guidance and policy rely on the use of performance-based standards, otherwise known as best performance standards, to assess the significance of project-specific GHG emissions on global climate change during the environmental review process, as required by CEQA. Portions of the project study area are located in counties within San Joaquin Valley APCD jurisdiction. Counties within San Joaquin Valley APCD jurisdiction include San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and western Kern.

The following districts have not yet adopted any formal guidance or protocols relating to the analysis of GHG emissions, but recommend that projects be consistent with guidance published by ARB and the California Air Pollution Control Officers Association:

- Amador County APCD (Bartsh, pers. comm., 2010),
- Calaveras County APCD (Moss, pers. comm., 2010),
- Colusa County APCD (Kitamura, pers. comm., 2010),
- El Dorado County APCD (Otami, pers. comm., 2010),
- Northern Sierra AQMD (Fish, pers. comm., 2010), and
- Tuolumne County APCD (Roehl, pers. comm., 2010).

Placer County APCD has not provided guidance on GHG analysis.

3.7.3 ANALYSIS METHODOLOGY

The applicable air districts do not provide any specific models or methodology for analyzing construction-related GHG emissions. Therefore, temporary, short-term construction-generated emissions were modeled using construction-specific data and the SMAQMD's Road Construction Emissions Model, Version 6.3.2 (SMAQMD 2009). The use of this model is accepted in most air districts in northern and central California. The model was developed to provide timelines and equipment necessary to estimate the emissions from linear projects, such as a roadway or pipeline. The design characteristics of the proposed project were input into the Road Construction Emissions Model to develop construction emission estimates. The proposed project would not have any sources of long-term operational emissions, so these were not evaluated.

The construction period for the proposed project would last approximately 14 months beginning in July 2011, depending on receipt of all environmental clearances, permits, and approvals, and ending in November 2012. For CEQA purposes, the analysis was based on a worst-case scenario representing intensive days of construction for plowing, trenching, boring, blowing, hanging, and hook-up (attaching) activities. The worst-case emissions scenario was calculated for each proposed route segment. Emissions from segments where construction would take place concurrently within the same air district were then added together to create a baseline worst-case emissions day, based on the construction schedules for that air district. Using this approach, a compounded worst-case day is calculated because the worst-case day for each segment is added to the worst-case day for every other segment in each air district. It is unlikely that the worst-case day for all segments would occur on the same day; however, such a scenario may be possible and is therefore presented here for analysis purposes. In addition, the analysis assumes that the area of disturbed soil for construction of the fiber optic conduit would be based on a trench width of 3 feet. Complete modeling results are provided in Appendix B.

Impacts on GHG emissions that would result from implementation of the proposed project were analyzed by identifying the proposed route and evaluating whether and to what degree the construction would result in the situations identified in the questions from the environmental checklist in Appendix G of the State CEQA Guidelines, as listed at the beginning of this section.

At the time of this writing, none of the air districts in the project study area have adopted any quantitative or qualitative thresholds of significance for construction GHG emissions. However, all districts recommend that projects use guidance and thresholds published by ARB, the California Air Pollution Control Officers Association, and other applicable state agencies to evaluate GHGs.

The thresholds of significance established by the applicable AQMD or APCD may be relied upon to make the above determinations. However, at the time of this writing, of the air districts with jurisdiction over the proposed project, only San Joaquin Valley APCD has adopted quantitative thresholds of significance for GHG emissions. The GHG thresholds adopted by San Joaquin Valley APCD are for land use documents and are source-specific thresholds. Therefore, to establish additional context in which to estimate the order of magnitude of the proposed project's construction-related and operational GHG emissions, this analysis considers the following factors used by other agencies to determine what levels of GHG emissions constitute a cumulatively considerable incremental contribution to climate change:

- Facilities (stationary, continuous sources of GHG emissions) that generate more than 25,000 metric tons (MT) CO_2e per year are mandated to report their GHG emissions to ARB pursuant to AB 32.
- Stationary sources that generate more than 10,000 MT CO_2e per year may be required to participate in the cap-and-trade program through the Western Climate Initiative (ARB 2008b).

- The South Coast AQMD's GHG Working Group has proposed a significance screening level of 3,000 MT CO_2e per year for residential and commercial projects (SCAQMD 2008).

- The Bay Area Air Quality Management District (BAAQMD) has adopted 1,100 MT CO_2e per year as a project-level "bright line" GHG significance threshold that would apply to operational emissions from mixed-use development projects.

- BAAQMD also encourages lead agencies to incorporate the following BMPs to reduce GHG emissions during construction, as applicable:

    - using alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment for at least 15% of the fleet;

    - using at least 10% local building materials (within 100 miles); and

    - recycling at least 50% of construction waste or demolition materials.

At the time of this writing, no federal, state, regional, or local air quality regulatory agency has adopted a quantitative threshold of significance for construction-related GHG emissions. This information is presented for informational purposes only, and none of the districts in the project study area intend to adopt any of the above-listed emission levels as a numeric threshold. Rather, the intention is to put construction-generated GHG emissions into the appropriate statewide context to evaluate whether the GHG emissions contributed by the proposed project would be a cumulatively considerable incremental contribution to the global impact of climate change. An overall impact of the proposed project with regard to climate change would be based on consistency with AB 32 goals.

3.7.4 DISCUSSION

As stated above, at the time this document was written, none of the air districts in the project study area or ARB had established thresholds for GHG emissions for construction activities. San Joaquin Valley APCD had established GHG thresholds for specific emission sources or for planning documents. The proposed project does not meet the criteria of the specific source type, and no operational emissions are associated with the proposed project.

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less-Than-Significant Impact. During construction of the proposed project, GHG emissions would be generated by the exhaust of heavy-duty equipment required to install fiber optic conduit, by employee commute vehicles, and by vehicles transporting equipment (fiber optic conduit and cabinets) to construction sites. Conservative estimates of the worst-case day for each proposed construction segment were used to model GHG emissions at the annual and completed levels based on the number and type of equipment that would be used, as stated above in Section 2.5.5 above. Even though the analysis of GHGs emitted during construction of the proposed project evaluates total GHG emissions and annual emissions, the analysis was performed to capture worst-case scenarios. The worst-case-scenario methodology used for the proposed project, with multiple overlapping segments, causes a compounding effect on the emissions estimate because it assumes that each overlapping period is the projected worst case. Table 3.7-1 presents the estimated maximum annual and total emissions associated with the proposed project.

Table 3.7-1 Construction-Related Greenhouse Gas Emissions in the Project Study Area	
Construction Year	Emissions (MT CO_2/yr)
Annual	8,852
Total, Proposed Project (14 months)	11,066
Note: MT CO_2/yr = metric tons of carbon dioxide per year. Source: Modeling conducted by AECOM in 2010	

The quantification shown in Table 3.7-1 by itself cannot demonstrate whether construction under the proposed project would be consistent with the goals set forth in the AB 32 Scoping Plan. However, the construction emissions shown above represent the lifetime emissions associated with the proposed project, and would cease upon completion of construction activities (approximately 14 months). When compared against the most recent statewide GHG emissions inventory (2004) prepared by the California Energy Commission, the proposed project's emissions would represent 0.002% of the statewide inventory. Furthermore, incorporation of Environmental Protection Measure 3.7-1, "Reduce Greenhouse Gas Emissions from Construction Equipment," as part of the project and as a condition of project approval, would require additional considerations with respect to idling time, the type of equipment used, and the manner in which equipment is used. Although quantification of the potential reductions afforded by these measures is not possible due to the level of implementation being largely dependent on technology availability, Environmental Protection Measure 3.7-1 would ensure that temporary, short-term construction-related emissions are reduced to the fullest extent. Therefore, when considered in combination with the temporary-nature of and degree of emissions associated with construction activities, the proposed project would not be considered to generate GHG emissions that could have a significant impact on the environment. Therefore, this impact would be less than significant. No mitigation is required.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less-Than-Significant Impact. For this analysis, and for all projects in California, it is critical to evaluate how a project is consistent with the AB 32 Scoping Plan. With regard to the consistency of construction emissions with the AB 32 Scoping Plan, see response to question (a), above.

In addition to evaluating temporary and short-term construction emissions of GHGs, it is important to analyze how a project's design and purpose aligns with the goals of GHG reduction plans and strategies—in this case, the AB 32 Scoping Plan. The proposed project is not a typical land use development project and therefore would not support residential, commercial, or industrial uses. Rather, the project would allow various anchor and client institutions access to high-speed Internet connections. Although the proposed project is not focused on GHG emission reduction or efficiency, it has the potential to reduce vehicular travel in the areas where access is increased. The potential for a decrease in vehicle miles traveled is predicated on the idea that increasing the availability of reliable high-speed Internet access allows local residents to perform more of their daily tasks with little to no need for vehicular travel. Also, it should be noted that additional Central Valley community colleges would obtain better connections, which would allow the colleges to better serve their student base, reducing the desire by prospective students to travel out of the area for school. Because implementing the proposed project would contribute to the reduction of vehicle travel in the project study area and would not result in any direct GHG emissions, the project would be consistent with the goals of the AB 32 Scoping Plan to minimize transportation throughout California. Therefore, this impact would be less than significant. No mitigation is required.

3.8 HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. Hazards and Hazardous Materials. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

The section describes the hazards and hazardous materials that could be affected directly or indirectly by the proposed project. The study area for hazardous materials and wastes is composed of hazardous materials and waste sites, as defined by the U.S. government, State of California, regional agencies, or local governments, that are located within one-quarter mile of the project sites (proposed route and facilities). Hazardous materials (and wastes) are those substances that, because of their physical, chemical, or other characteristics, may pose a risk of endangering human health or safety or of endangering the environment (California Health and Safety Code, Section 25260). Hazardous materials include petroleum hydrocarbons, pesticides, and volatile organic carbons.

The study area for hazards includes airports and elementary, middle, and high schools located within 2 miles of the proposed route and facilities. This section also addresses whether the proposed project would adversely affect emergency access and response or increase the risk of wildland fires.

3.8.1 ENVIRONMENTAL SETTING

HAZARDOUS MATERIALS IN THE STUDY AREA

The California Department of Toxic Substances Control (DTSC) maintains a list known as the Cortese List, indicating the sites in California that represent hazardous waste facilities. According to DTSC's Cortese List, all of the following are hazardous waste facilities:

- sites that are subject to corrective action;
- lands designated as hazardous waste properties or as border zone properties (properties within 2,000 feet of a significant disposal of hazardous waste, when the location of the waste represents a significant existing or potential hazard to present or future public health or safety on the land in question); and
- public drinking water wells that contain detectable levels of organic contaminants and are subject to water analysis.

DTSC also collects data gathered by the SWRCB, which compiles a list of all leaking underground storage tank sites and all solid waste disposal facilities from which hazardous waste is migrating.

Table 3.8-1 lists all relevant hazardous materials sites within one-quarter mile of the proposed route, including the cabinet locations.

SENSITIVE RECEPTORS IN THE STUDY AREA

During construction, hazardous materials such as vehicle fuels, oils, and other vehicle maintenance fluids would be used and stored in construction staging and equipment lay-down areas. Because of the corresponding potential for a hazardous material spill or accident during construction, sensitive receptors in the study area that could be exposed to hazardous materials by such a spill or accident are described below.

Schools

Schools are considered sensitive receptors for exposure to hazardous materials because children are more susceptible than adults to the effects of many hazardous materials. Approximately 200 elementary, middle, and high schools are located within 2 miles of the proposed route. Table 1 in Appendix H lists all schools within 2 miles of the proposed route.

Airports

Approximately 35 airports are located within 2 miles of the proposed route. (See Exhibit 3.16-1 in Section 3.16, "Transportation/Traffic," and Table 2 in Appendix H for all airports within 2 miles of the proposed route.)

Several hazardous materials and waste facilities, as included on DTSC's Cortese List, occur within one-quarter mile of the proposed route. These facilities are listed in Table 3.8-1 and shown in Exhibit 3.8-1.

Table 3.8-1
Hazardous Materials and Waste Facilities within One-Quarter Mile of the Proposed Route

Site/Facility Name	Site/Facility Type	Cleanup Status	City, County
Castle Air Force Base	Federal Superfund[a]	C/O&M— Land Use Restrictions[b]	Atwater, Merced
Goshen Avenue and Shirk Road Site	State Response[c]	A[d]	Visalia, Tulare
Mission Uniform	State Response	A	Visalia, Tulare
Pacific Gas and Electric Company Manufactured Gas Plant, Fresno	State Response	A	Fresno, Fresno
Purego-Corcoran	State Response	A	Corcoran, Kings
Purity Oil Sales, Inc.	Federal Superfund	A	Malaga, Fresno
Southern California Gas Company/ Dinuba Manufactured Gas Plant	State Response	A	Tulare
Southern California Gas Company/ Visalia Manufactured Gas Plant	State Response	C/O&M— Land Use Restrictions	Visalia, Tulare
The Vendo Company	State Response	A	Pinedale, Fresno
Visalia Dry Cleaner Investigation	State Response	A	Visalia, Tulare

Notes: A = Active; C/O&M = Certified/Operation & Maintenance—Land Use Restrictions.

[a] Federal Superfund Site: Site designated by the U.S. Environmental Protection Agency (EPA) as a location where past, improper disposal of hazardous substances caused soil and groundwater contamination. At these sites, EPA may compel the polluter to pay for the cleanup, or pay for the cleanup itself through a federal fund and sue for reimbursement.

[b] Certified/Operation & Maintenance—Land Use Restrictions: Site that has certified cleanup in place but requires ongoing operation and maintenance (O&M) activities. The Certified/O&M status designation means that all planned activities necessary to address the contamination problems have been implemented. However, some of these remedial activities (such as pumping and treating contaminated groundwater) must be continued for many years before complete cleanup will be achieved. Before the Certified/O&M designation may be made, all institutional controls (e.g., land use restrictions) that are necessary to protect public health must be in place.

[c] State Response Site: A confirmed hazardous waste release site where DTSC is involved in remediation, in either a lead or an oversight capacity.

[d] Active: An investigation and/or remediation is currently in progress.

Source: DTSC 2010

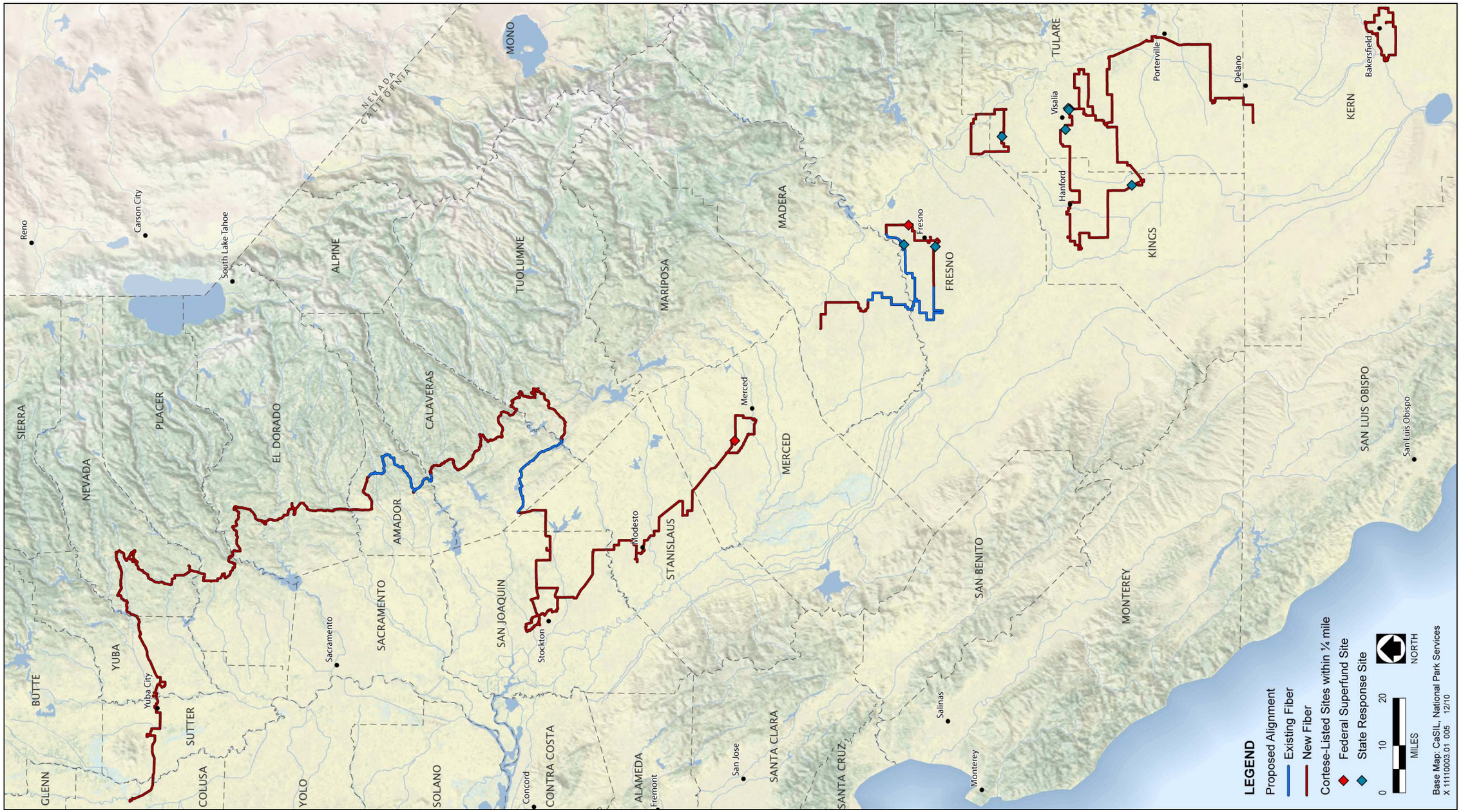
REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The principal federal regulatory agency responsible for the safe use and handling of hazardous materials is EPA. Two key federal regulations pertaining to hazardous wastes are described below. Other applicable federal regulations are contained primarily in Titles 29, 40, and 49 of the CFR.

Resource Conservation and Recovery Act

The federal Resource Conservation and Recovery Act (42 USC Section 6901 et seq.) enables EPA to administer a regulatory program that extends from the manufacture of hazardous materials to their disposal, thus regulating the generation, transportation, treatment, storage, and disposal of hazardous waste at all facilities and sites in the nation. The proposed project could potentially affect or be affected by hazardous waste management to avoid accidents during construction, so this law would apply to implementation of the project.



Sources: Data provided by CVIN in 2010; DTSC 2010

Sites within One-Quarter Mile of the Proposed Route that are Included on the Cortese List

Exhibit 3.8-1

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (42 USC Section 9601 et seq.) (also known as Superfund) was passed to facilitate the cleanup of the nation's toxic waste sites. In 1986, the act was amended by the Superfund Amendment and Reauthorization Act Title III (community right-to-know laws). Title III states that past and present owners of land contaminated with hazardous substances can be held liable for the entire cost of the cleanup, even if the material was dumped illegally when the property was under different ownership. The proposed project could potentially affect or be affected by Superfund sites if such sites would be crossed during construction, so this law would apply.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California regulations are equal to or more stringent than federal regulations. EPA has granted the State of California primary responsibility for administering and enforcing hazardous waste management programs. State regulations require planning and management to ensure that hazardous wastes are handled, stored, and disposed of properly to reduce risks to human and environmental health. Several key laws pertaining to hazardous wastes are discussed below.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act (California Health and Safety Code, Division 20, Chapter 6.95) (also known as the Business Plan Act) requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as unsafe raw or unused materials that are part of a process or manufacturing step. They are not considered hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste. The proposed project could potentially affect or be affected by hazardous waste management to avoid accidents during construction, so this law would apply.

Hazardous Waste Control Act

The Hazardous Waste Control Act created the state hazardous waste management program, which is similar to but more stringent than the federal Resource Conservation and Recovery Act program. The act is implemented by regulations contained in Title 26 of the CCR, which describe the following required aspects for the proper management of hazardous waste:

- identification and classification;
- generation and transportation;
- design and permitting of recycling, treatment, storage, and disposal facilities;
- treatment standards;
- operation of facilities and staff training; and
- closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26 of the CCR, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with DTSC. The proposed project could potentially affect or be affected by hazardous waste management to avoid accidents during construction, so this law would apply.

Emergency Services Act

Under the Emergency Services Act, the state developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials

or hazardous waste is an important part of the plan, which is administered by the California Emergency Management Agency (formerly known as the Governor's Office of Emergency Services). This agency coordinates the responses of other agencies, including EPA, the California Highway Patrol, RWQCBs, AQMDs/APCDs, and county disaster response offices. The proposed project could potentially affect response times if unforeseen accidents were to occur during construction, so this law would apply.

Other State Regulations

Various other state regulations have been enacted that affect hazardous waste management, among them the following:

- Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65), which requires labeling of substances known or suspected by the State of California to cause cancer; and
- California Government Code Section 65962.5, which requires the Office of Permit Assistance to compile a list of possible contaminated sites in the state.

These regulations are applicable to the proposed project because of the potential for the proposed route to cross areas used for drinking water (i.e., groundwater or surface water sources) and possible contaminated sites in the state.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

ANALYSIS METHODOLOGY

Impacts on human health and safety that could be caused by hazards and hazardous materials were determined from a review of published literature, examination of aerial photographs, and published mapping by DTSC. An evaluation was conducted to determine whether the proposed project would create an increased risk to human health and safety.

3.8.2 DISCUSSION

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less-Than-Significant Impact. During construction, hazardous materials such as vehicle fuels, oils, and other vehicle maintenance fluids would be used and stored in construction staging areas. Spills of these hazardous materials during construction could cause soil or groundwater contamination. Improperly maintained equipment could leak fluids during construction and while parked, resulting in soil contamination. Incorporation of Environmental Protection Measures 3.8-1, "Prepare and Implement a Spill Prevention Plan;" "Conduct Construction Soil Sampling and Testing If Soil Contamination Is Suspected" as part of the project and as a condition of project approval would reduce to a less-than-significant level the potential for impacts caused by inadvertent spills and leaks of hazardous materials because a spill prevention plan would be prepared and implemented, and an environmental training and awareness program would be conducted to educate workers on procedures to follow in the event of an accidental spill or leak. Operation of the proposed project would require minimal maintenance activities, and would be limited to periodic testing of the fiber lines and stations. The use of

hazardous materials for these activities would be minimal and would not be considered routine. Therefore, this impact would be less than significant. No mitigation is required.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

Less-Than-Significant Impact. Unexpected soil or groundwater contamination could be encountered during construction (i.e., directional drilling, trenching, plowing), exposing construction workers to potential contamination. Environmental Protection Measure 3.8-2 , "Conduct Construction Soil Sampling and Testing If Soil Contamination Is Suspected," and Environmental Protection Measure 3.8-3, "Conduct Groundwater Sampling and Testing If Suspected Contaminated Groundwater Is Encountered during Construction" would require regular monitoring and evaluation of soil conditions to ensure that any previously unknown contaminants encountered during construction would be evaluated quickly to determine potential hazards. Furthermore, if a suspected hazard is determined to be present, Environmental Protection Measure 3.8-1, "Prepare and Implement a Spill Prevention Plan," would detail protocols to follow if unexpected contaminations are encountered along the proposed route. With incorporation of these measures as part of the project and as condition of project approval, potentially hazardous conditions would be identified and remediated either prior to or immediately upon discovery, which would ensure that potential impacts associated with previously unknown contamination would be reduced to a less-than-significant level. This impact would be less than significant. No mitigation is required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less-Than-Significant Impact. Multiple elementary, middle, and high schools are located in the immediate proximity (within 2 miles) of the proposed route; some of these schools may be located within one-quarter mile of the route. Due to the anticipated use of vehicle fuels, oils, and other vehicle maintenance fluids on-site during construction, the potential exists for a hazardous material spill or accident to occur, which could expose sensitive receptors to accidentally released hazardous materials, substances, or waste. However, incorporation of Environmental Protection Measure 3.8-1, "Prepare and Implement a Spill Prevention Plan," as part of the project and as a condition of project approval would fully reduce the potential risk of accidental spills in construction areas because a spill prevention plan would be implemented. The spill prevention plan would prescribe procedures for handling hazardous materials to reduce the potential for a spill during construction and identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, would be permitted to reduce potential locations for a spill to occur. With respect to operation of the proposed project, no hazardous materials, substances, or waste would be stored along the proposed alignment that could affect an existing or proposed school. This impact would be less than significant. No mitigation is required.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. According to DTSC's Cortese List, 10 sites of potential environmental concern are located within one-quarter mile of the proposed route. However, based on regulatory status (all sites are either Active or Certified) none of the 10 sites on the Cortese List are considered to represent a recognized environmental condition.[2] Therefore, the proposed project would not affect human health and safety by resulting in exposure to such sites. No impact would occur. No mitigation is required.

[2] A recognized environmental condition is generally defined as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, past release, or a material threat of a release of any hazardous materials or petroleum products into structures, soils, or other medium.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. Multiple airports are located within 2 miles of the proposed route, however, the proposed project involves the installation of fiber optic facilities below ground surface with minor accessory structures (cabinets) located above ground. No project structures would be erected within airport property or otherwise that could impair physical airport operations or endanger other land uses (such as residences or commercial office facilities) as a result of modified airport operations. As a result, no impact to the safety of aircraft activities would occur as a result of project implementation. No mitigation is required.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. See response to question (e), above.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less-Than-Significant Impact. Construction under the proposed project may require temporary road closures, which have the potential to impede or otherwise affect emergency access routes or services. Coordination with local agencies for any necessary and temporary road closures would be required, especially for those portions of the proposed route that would cross or may impede emergency access routes or services. In addition, Environmental Protection Measure 3.16-1, "Prepare and Implement Traffic Control Plans," and Environmental Protection Measure 3.16-2, "Notify Property Owners Concerning Blocked Driveways, Limit Hours of Disruption of Driveways, or Compensate Property Owners," as a part of the project and would reduce the potential for effects on emergency vehicle response times by requiring the preparation of traffic control plans and other measures to allow traffic flow to continue during construction. Furthermore, it should be noted that in the event of an on-site emergency during construction, specific procedures enumerated in the project's Health and Safety Plan, which is required by Environmental Protection Measure 3.8-4, "Prepare a Health and Safety Plan," would ensure that on-site emergencies are addressed quickly and efficiently in cooperation with local emergency providers. Therefore, incorporation of Environmental Protection Measures 3.16-1, 3.16-2, and 3.8-4 as part of the project and as conditions of project approval would receive potential interference with adopted emergency response plans or emergency evacuation plans to less than significant. No mitigation is required.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less-Than-Significant Impact. The proposed route would pass through areas considered moderate to high for wildfire hazards. The primary risks of potential fire hazards for construction of the proposed project involve the use of vehicles and equipment during construction. Heat or sparks emitted from equipment in the area could ignite dry vegetation and cause a fire. Incorporation of Environmental Protection Measure 3.8-5, "Develop and Implement a Fire Risk Management Plan" as part of the project and as a condition of project approval would reduce the potential for impacts related to potential fire hazards by requiring CVIN or its construction contractor to prepare and implement a fire risk management plan, which would require on-site training of construction workers regarding fire prevention and procedures to be taken in the event of a fire on-site. The fire risk management plan would also include specific requirements for the demarcation, placement, and maintenance of fire suppression equipment and materials adjacent to all work areas and in staging areas. As a result, this impact would be less than significant. No mitigation is required.

3.9 HYDROLOGY AND WATER QUALITY

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX.	**Hydrology and Water Quality. Would the project:**				
a)	Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	☐	☐	☒	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	☐	☐	☒	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f)	Otherwise substantially degrade water quality?	☐	☐	☒	☐
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i)	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j)	Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

This section describes water resources (both natural and human-built) controlled by federal, state, and regional and local agencies and analyzes potential impacts of the proposed project on the hydrology and water quality of those resources. The study area for hydrology and water quality is defined as those water resources that could be affected directly or indirectly by the proposed project (including through changes to natural hydrology or water quality degradation). The study area thus includes both those surface waters and groundwater basins that are located in the immediate vicinity of the construction footprint for the proposed route and those that could be considered downstream of the proposed route, or otherwise affected by runoff or natural disasters.

3.9.1 ENVIRONMENTAL SETTING

HYDROLOGIC REGIONS

The proposed project would occur within the Central Valley hydrologic region, the largest of the 10 hydrologic regions in California (Exhibit 3.9-1). The beneficial uses and water quality–impaired segments of the major water bodies that the proposed route would cross are shown in Tables 3.9-1 and 3.9-2, respectively. The proposed route traverses the three subregions, described below, which comprise the Central Valley hydrologic region. The cabinets and end-user client institutions are located within the three subregions as well.

The Tuolumne, Merced, and North Fork American Rivers are designated wild and scenic rivers in the project study area. (See Section 3.1, "Aesthetics," for further discussion.)

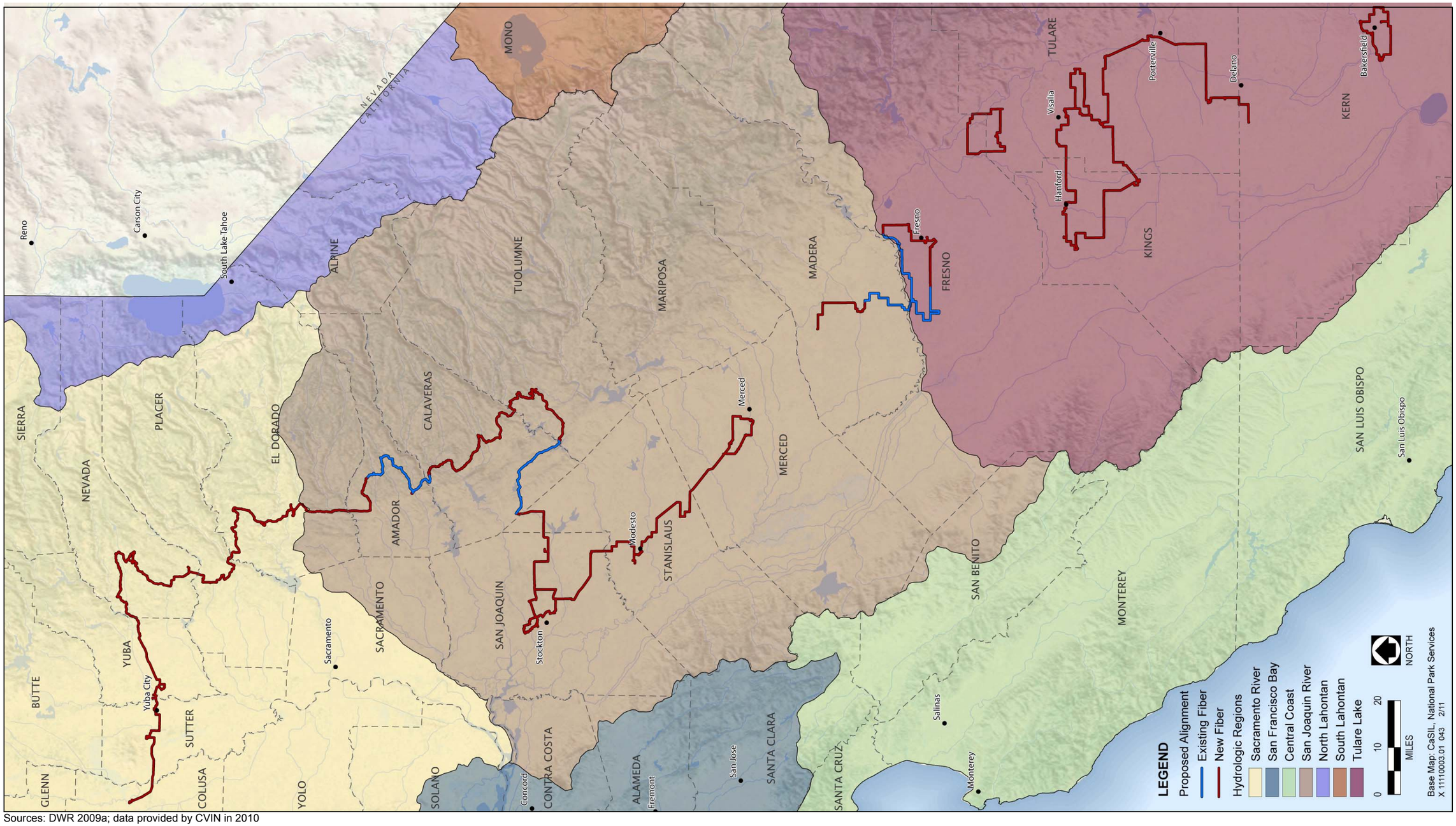
Sacramento River Hydrologic Subregion

Portions of the proposed route would traverse Sutter, Nevada, Placer, and El Dorado Counties, in the southern portion of the Sacramento River hydrologic subregion, which corresponds to approximately the northern third of the jurisdiction of the CVRWQCB. Covering approximately 27,246 square miles, the Sacramento River hydrologic subregion extends from the crest of the Sierra Nevada in the east to the summit of the Coast Ranges in the west, and from the Oregon border downstream to the Sacramento–San Joaquin Delta (Delta). The subregion includes the entire drainage area of the Sacramento River, the largest river in California, and its tributaries. Other major rivers include the Feather and the Yuba. The southwestern half of this subregion is underlain by part of the Central Valley aquifer system. The remaining areas that comprise the southeastern half of the subregion and portions of the northern half of the subregion, including the Sierra Nevada foothills, are underlain by fractured hard rock zones. Surface water quality in the Sacramento River hydrologic subregion is generally good. Groundwater quality in this subregion is also generally good, although there are localized problems (DWR 2009a:SR-17 through SR-19).

The Sacramento Valley floor has a typical Mediterranean climate, with mild winters during which the majority of precipitation occurs, and hot dry summers. Overall annual precipitation in the Sacramento River hydrologic region generally increases from south to north and west to east. The heavy snow and rain that falls in this region contributes to the overall water supply for the entire state. Average annual rainfall in the study area ranges from 15 to 22.5 inches (FRAP 2010).

San Joaquin River Hydrologic Subregion

Segments of the proposed route would traverse El Dorado, Amador, Calaveras, Tuolumne, San Joaquin, Stanislaus, Merced, and Madera Counties in the San Joaquin River hydrologic subregion. The subregion is bordered on the east by the Sierra Nevada and on the west by the coastal mountains of the Diablo Range. The San Joaquin River hydrologic subregion extends from the southern boundaries of the Delta to the northern edge of the San Joaquin River in Madera. The subregion consists of the drainage area of the San Joaquin River, which at approximately 300 miles long is one of California's longest rivers, and encompasses approximately half of the Delta. Other waterways include the Mokelumne, Calaveras, Stanislaus, Tuolumne, and Merced Rivers; Lone Tree



Sources: DWR 2009a; data provided by CVIN in 2010

Major Hydrologic Regions in the Proposed Route

Exhibit 3.9-1

Table 3.9-1
Beneficial Uses for Major Water Bodies in the Project Study Area

Beneficial Use	Sacramento River	Bear River	Calaveras River	Feather River	Stanislaus River	Tuolumne River	Yuba River	Merced River	American River, North Fork	American River, South Fork	Mokelumne River	Fresno River
Municipal and Domestic Supply	√	√		√	√				√	√	√	√
Agriculture—Irrigation	√	√	√		√	√	√	√	√	√		√
Agriculture—Stock Watering	√	√			√	√	√	√				√
Industry—Process					√							
Industry—Service Supply	√				√							
Industry—Power	√			√		√				√	√	
Recreation—Contact	√	√	√	√	√	√	√	√	√	√	√	√
Recreation—Canoeing and Rafting	√	√		√	√	√	√		√	√	√	√
Recreation—Other Noncontact	√	√		√	√	√		√	√	√	√	√
Freshwater Habitat—Warm	√	√	√		√	√	√	√	√	√	√	√
Freshwater Habitat—Cold	√	√		√	√	√	√	√	√	√	√	
Migration—Warm		√			√			√			√	
Migration—Cold		√	√		√	√		√				
Spawning—Warm	√	√			√	√	√	√			√	
Spawning—Cold	√	√	√	√	√	√			√		√	
Wildlife Habitat	√	√	√	√	√	√	√	√	√	√	√	√
Navigation	√											

Source: CVRWQCB 2009

Table 3.9-2
Impaired Water Body Segments in the Project Study Area

Water Body	Hydrologic Subregion	Pollutant/Stressor	Potential Sources
Sacramento River (Red Bluff to Knights Landing)	Sacramento River	Mercury	Resource extraction (mercury listing only applies to the area from Hamilton City downstream to Knights Landing)
		Unknown toxicity	Source unknown
Butte Slough	Sacramento River	Diazinon	Crop-related sources
Bear River (upper)	Sacramento River	Mercury	Resource extraction
Feather River, Lower (Oroville Dam to confluence with Sacramento River)	Sacramento River	Chlorpyrifos; unknown toxicity	Source unknown
		Group A pesticides	Agriculture
		Mercury	Resource extraction
Calaveras River (lower)	San Joaquin River	Diazinon; organic enrichment/low dissolved oxygen; pathogens	Urban runoff/storm sewers
		Pathogens	Recreational and tourism activities (nonboating)
Mormon Slough (Stockton Diverting Canal to Commerce Street)	San Joaquin River	Pathogens	Urban runoff/storm sewers; recreational and tourism activities (nonboating)
Lone Tree Creek	San Joaquin River	Ammonia; biochemical oxygen demand; electrical conductivity	Dairies
Stanislaus River (lower)	San Joaquin River	Diazinon; Group A pesticides	Agriculture
		Mercury	Resource extraction
		Unknown toxicity	Source unknown
Tuolumne River, Lower (Don Pedro Reservoir to San Joaquin River)	San Joaquin River	Diazinon; Group A pesticides	Agriculture
		Unknown toxicity	Source unknown
Merced River, Lower (McSwain Reservoir to San Joaquin River)	San Joaquin River	Chlorpyrifos; diazinon; Group A pesticides	Agriculture
		Mercury	Source unknown

Source: SWRCB 2010

Creek; and Mormon Slough. The San Joaquin River hydrologic subregion covers approximately 15,200 square miles. A portion of the Central Valley aquifer system underlies nearly the entire eastern half of this subregion, while the western half and the Sierra Nevada foothill region consist of fractured hard rock zones. The groundwater quality throughout this hydrologic region is generally good and groundwater is suitable for most urban and agricultural uses, although localized problems occur (DWR 2009b:SJ-13 through SJ-16).

The San Joaquin Valley floor has a typical Mediterranean climate, with mild winters during which the majority of precipitation occurs, and hot dry summers. The annual precipitation in the subregion varies widely, ranging from approximately 22 inches near Stockton in the northern portion of the valley to 11 inches in the southern portion and 35 inches in some Sierra Nevada areas; most of the precipitation in the subregion occurs from November to April. Temperatures are mild, occasionally dropping below freezing in the winter and reaching normal maximum highs of 101°F in July (DWR 2009b:SJ-6 through SJ-7). Floods in the San Joaquin Valley are caused mostly by melting of the Sierra Nevada snowpack and by rainfall. Snowmelt floods typically occur in the spring. Rainfall floods also occur in the winter and early spring (DWR 2009b:SJ-20).

Tulare Lake Hydrologic Subregion

Portions of the proposed route would traverse Fresno, Tulare, Kings, and Kern Counties in the Tulare Lake hydrologic subregion, located in the southern end of the San Joaquin Valley. The subregion covers approximately 17,000 square miles and includes the Kern River. A small area at the southern end of this subregion in underlain by basin and range aquifers, while a majority of the western half is underlain by a portion of the Central Valley aquifer system. The eastern half consists of fractured hard rock zones. Salinity is the primary contaminant affecting water quality in this subregion (DWR 2009c:TL-20 through TL-22).

The annual precipitation in the valley floor of the Tulare Lake hydrologic subregion ranges from approximately 6 to 11 inches; most of the precipitation in the subregion occurs from November to April. Temperatures are mild, occasionally dropping below freezing in the winters and reaching normal maximum highs of 101°F in July (DWR 2009c:TL-13).

3.9.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Clean Water Act

EPA is the lead federal agency responsible for managing water quality. The CWA of 1972 is the primary federal law authorizing EPA to implement activities to control water quality and the major federal legislation governing the water quality aspects of the proposed project. The objective of the act is "to restore and maintain the chemical, physical, and biological integrity of the nation's waters." The CWA establishes the basic structure for regulating discharge of pollutants into the waters of the United States and gives EPA the authority to implement pollution control programs. EPA has delegated to the State of California the authority to implement and oversee most programs authorized or adopted for CWA compliance through the state's Porter-Cologne Act, which is described below. The various elements of the CWA that address water quality and are applicable to the proposed project are discussed below.

Water Quality Criteria and Standards

Pursuant to federal law, EPA has published water quality regulations under Volume 40 of the CFR. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question and (2) criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health

and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. Section 303(d) lists the water bodies and associated pollutants that exceed water quality criteria. The beneficial uses for major water bodies in the project study area are shown in Table 3.9-1.

Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after required levels of treatment have been implemented by point-source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. The TMDL prepared by the state must allocate allowable loadings to point and nonpoint sources, with consideration of background loadings and a margin of safety. After the TMDL has been implemented, the problems that caused a given pollutant to be placed on the Section 303(d) list are anticipated to be remediated. Water bodies in the vicinity of the proposed route that are on the Section 303(d) list are shown in Table 3.9-2.

Safe Drinking Water Act

Under the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to the domestic water supply, defined as contaminants that pose a public health threat or alter the aesthetic acceptability of the water. EPA's primary and secondary maximum contaminant levels (MCLs) are applicable to treated water supplies delivered to the distribution system. MCLs and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act, enacted in 1986 and 1996, established an accelerated schedule for setting MCLs for drinking water.

EPA has delegated to the California Department of Public Health (DPH) the responsibility for administering California's drinking water program. DPH is accountable to EPA for implementing the program and for adopting standards and regulations that are at least as stringent as those developed by EPA. The applicable state primary and secondary MCLs are set forth in Title 22, Division 4, Chapter 15, Article 4 of the CCR, and are described in "Title 22 Standards" below. The proposed project involves construction activities that have the potential to introduce contaminants of concern to downstream waters that serve as domestic water supplies; therefore, the Safe Drinking Water Act applies to the proposed project.

National Toxics Rule and California Toxics Rule

In 1992, pursuant to the CWA, EPA issued the National Toxics Rule (NTR) to establish numeric criteria for priority toxic pollutants for California. The NTR established water quality standards for 42 pollutants that were not then covered under California's statewide water quality regulations. In September 1994, after a court ordered revocation of California's statewide water quality control plan for priority pollutants, EPA initiated efforts to issue additional numeric water quality criteria for California. In May 2000, EPA issued the California Toxics Rule (CTR), which issued numeric criteria for priority pollutants not included in the NTR. The CTR documentation (65 *Federal Register* 31682, May 18, 2000) "carried forward" the previously issued standards of the NTR, thereby providing a single document listing California's fully adopted and applicable water quality criteria for priority pollutants. These criteria apply to discharges to surface waters by the proposed project.

National Flood Insurance Program and Flood Insurance Rate Maps

FEMA administers the National Flood Insurance Program, which provides subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues flood insurance rate maps that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection covered by flood

insurance rate maps is established by FEMA; the minimum level of flood protection for new development has been determined to be the 1-in-100 annual exceedance probability (i.e., the 100-year flood event). Some segments of the proposed route would cross 100-year floodplains; therefore, the proposed project would be subject to this regulation.

Executive Order 11988—Floodplain Management

Executive Order 11988, "Floodplain Management" (44 CFR Part 9), addresses floodplain issues related to public safety, conservation, and economics. Executive Order 11988 generally requires federal agencies constructing, permitting, or funding a project to:

- avoid incompatible floodplain development,
- be consistent with the standards and criteria of the National Flood Insurance Program, and
- restore and preserve natural and beneficial floodplain values.

This executive order applies to the proposed project because the project, if approved, would receive federal funding.

Federal Antidegradation Policy

The federal antidegradation policy, established in 1968, is designed to protect existing uses, water quality, and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- Existing instream uses and the water quality necessary to protect those uses shall be maintained and protected.

- Where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development.

- Where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

The proposed project involves construction activities that could affect high-quality waters; therefore, the federal antidegradation policy applies.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is California's statutory authorization for the protection of water quality. Under this law, the state must adopt water quality policies, plans, and objectives that protect the state's waters for the use and enjoyment of the people. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The RWQCBs are required to formulate and adopt water quality control plans (basin plans) for all areas in the region and establish water quality objectives in the plans. The proposed project is within the jurisdiction of the CVRWQCB.

The Porter-Cologne Act sets forth the obligations of the State Water Resources Control Board (SWRCB) and RWQCBs to adopt and periodically update basin plans. Basin plans are the regional water quality control plans, required by both the CWA and Porter-Cologne Act, that establish the beneficial uses, water quality objectives, and implementation programs for each of the nine regions in California. The act also requires waste dischargers to notify the RWQCBs of such activities by filing reports of waste discharge and authorizes the SWRCB and

RWQCBs to issue and enforce waste discharge requirements, NPDES permits, Section 401 water quality certifications, or other approvals. The RWQCBs are also authorized to issue waivers to reports of waste discharge and waste discharge requirements for broad categories of "low-threat" discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

Section 401 Water Quality Certification

Section 401 of the CWA requires an applicant for any federal license or permit (e.g., a Section 404 permit, described below and in Section 3.4, "Biological Resources") that may result in a discharge into waters of the United States to obtain a certification from the state that the discharge would comply with provisions of the CWA. This regulation is discussed in greater detail in Section 3.4, "Biological Resources."

Section 404 of the Clean Water Act

This section regulates the placement of dredged or fill materials into wetlands and other waters of the United States. This regulation is discussed in greater detail in Section 3.4, "Biological Resources."

Water Quality Control Plan for the Sacramento and San Joaquin River Basins

The CVRWQCB is responsible for preparing and implementing the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan), adopted in 1998 and revised in September 2009 (CVRWQCB 2009). The Basin Plan identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento River, San Joaquin River, and Tulare Lake hydrologic regions. Federal and state laws mandate the protection of designated "beneficial uses" of water bodies. State law defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (California Water Code, Section 13050[f]). Beneficial uses of the major water bodies in the study area are shown on Table 3.9-1.

Water bodies in the study area to which the Basin Plan has not specifically attributed any beneficial uses are subject to the Basin Plan's "tributary rule," whereby they are assigned the beneficial uses designated to the nearest downstream location. The CVRWQCB also regulates waste discharges in undesignated streams to ensure that downstream water quality conditions and beneficial uses are not degraded. Thus, these creeks are subject to regulation for the existing designated uses in their receiving water bodies.

The Basin Plan contains specific narrative and numeric water quality objectives for a number of physical properties (e.g., temperature, dissolved oxygen, turbidity, suspended solids), biological constituents (e.g., coliform bacteria), and chemical constituents of concern (e.g., inorganic parameters, trace metals, organic compounds). Water quality objectives for toxic priority pollutants (select trace metals and synthetic organic compounds) are included in the Basin Plan and the CTR described above.

National Pollutant Discharge Elimination System Permit System and Waste Discharge Requirements for Construction

The SWRCB and CVRWQCB have adopted specific NPDES permits for a variety of activities that have potential to discharge wastes to waters of the state. The SWRCB General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009- Division of Water Quality [DWQ]) is applicable to all land-disturbing construction activities that affect 1 acre or more. The NPDES permits all involve similar processes, including submittal of notices of intent to discharge to the CVRWQCB and implementation of BMPs to minimize those discharges. The CVRWQCB also may issue site-specific waste discharge requirements (WDRs), or waivers to WDRs, for certain waste discharges to land or waters of the state. The proposed project involves construction activities that have the potential to discharge wastes into waters of the state; therefore, an NPDES permit and WDR would apply to the project. Construction activities subject to the general construction

activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce nonstormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider using postconstruction permanent BMPs that would remain in service to protect water quality throughout the life of the project. Types of postconstruction BMPs that may be included in the proposed project are described in the "Discussion" section below. Activities subject to the NPDES general permit for construction activity must develop and implement a SWPPP. The SWPPP includes a site map and description of construction activities and identifies the BMPs that will be employed to prevent soil erosion and discharge of other construction-related pollutants, such as petroleum products, solvents, paints, and cement that could contaminate nearby water resources. A monitoring program is generally required to ensure that BMPs are implemented according to the SWPPP and are effective at controlling discharges of stormwater related pollutants.

The amended general permit (Order 2009-0009-DWQ) became effective on July 1, 2010. The amended permit differs from the previous permit (Order 99-08-DWQ) in the following important ways:

- **Risk-Based Permitting Approach:** The amended general permit establishes three levels of risk possible for a construction site. Risk is calculated in two parts: project sediment risk and receiving water risk.

- **Rainfall Erosivity Waiver:** The amended general permit includes the option of allowing a small construction site (greater than 1 acre and less than 5 acres) to self-certify if the rainfall erosivity value (R value) for the given location and time frame of the project calculate to be less than or equal to 5 (the variable "R" in EPA's Revised Universal Soil Loss Equation). Dischargers can access the online rainfall erosivity calculator from EPA's Web site.

- **Technology-Based Numeric Action Levels (NALs):** The amended general permit includes NALs for pH and turbidity.

- **Technology-Based Numeric Effluent Limitations (NELs):** The amended general permit contains daily average NELs for pH during any construction phase where a high risk of pH discharge and daily average NEL turbidity exists for all discharges in Risk Level 3. The daily average NEL for turbidity is set at 500 nephelometric turbidity units to represent the minimum technology that sites need to employ (to meet the traditional Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology standard) and traditional, numeric receiving-water limitations for turbidity.

- **Minimum Requirements Specified:** The amended general permit imposes more minimum BMPs and requirements that previously were required only as elements of the SWPPP or were suggested by guidance.

- **Monitoring and Reporting of Project Site Soil Characteristics:** The amended general permit provides the option for dischargers to monitor and report the soil characteristics at their project locations. The primary purpose of this requirement is to improve risk determination and eventually improve program evaluation.

- **Effluent Monitoring and Reporting:** The amended general permit specifies that effluent must be monitored and requires that pH and turbidity in stormwater discharges be reported. The purpose of this monitoring is to determine compliance with the NELs and evaluate whether NALs included in the general permit are exceeded.

- **Receiving-Water Monitoring and Reporting:** The amended general permit requires some Risk Level 3 dischargers to monitor receiving waters and conduct bioassessments.

- **Postconstruction Stormwater Performance Standards:** The amended general permit specifies runoff reduction requirements for all sites not covered by a Phase I or Phase II Municipal Separate Storm Sewer System NPDES permit, to avoid, minimize, and/or mitigate effects related to postconstruction stormwater runoff.

- **Rain Event Action Plan:** The amended general permit requires certain sites to develop and implement a rain event action plan designed to protect all exposed portions of the site within 48 hours before any likely precipitation event.

- **Annual Reporting:** The amended general permit requires projects that are enrolled for more than one continuous 3-month period to submit information and annually certify that their site is in compliance with the requirement in Draft Fact Sheet CGP-6-April 22, 2009. The primary purpose of this requirement is to provide information needed for overall program evaluation and public information.

- **Certification/Training Requirements for Key Project Personnel:** The amended general permit requires that key personnel (e.g., SWPPP preparers, inspectors) have specific training or certifications to ensure that their level of knowledge and skills are adequate to design and evaluate project specifications that will comply with general permit requirements.

- **Linear Underground/Overhead Projects:** The amended general permit includes requirements for linear underground/overhead projects.

Construction dewatering activities that discharge to surface waters require NPDES authorization under the CVRWQCB's General Order for Dewatering and Other Low-Threat Discharges to Surface Waters (Order No. 5-00-175). This permit requires the applicant to submit a notice of intent before the activity verifying that the dewatering will occur in compliance with applicable water quality objectives. It lists terms and conditions governing discharge prohibitions, limits for effluent and receiving-water quality, solids disposal activities, and water quality monitoring protocols. The permit authorizes direct discharges to surface waters of up to 250,000 gallons per day for no more than a 4-month period each year. Because the proposed project would disturb more than 1 acre of land, this regulation would apply and the applicant would need to seek coverage under the SWRCB's general construction permit.

State Water Resources Control Board Resolution No. 68-16

SWRCB Resolution No. 68-16 contains the state antidegradation policy, titled "Statement of Policy with Respect to Maintaining High Quality Waters in California." The SWRCB has interpreted Resolution No. 68-16, a predecessor to the federal policy, as incorporating the federal antidegradation policy where the federal policy applies (Order No. WQ 86-17). The state antidegradation policy applies more comprehensively to water quality changes than the federal policy. In particular, the state policy applies to all waters of the state (both groundwater and surface water) whose quality meets or exceeds water quality objectives. The policy requires that waste disposal into state waters be regulated to achieve the highest water quality consistent with maximum benefit to the people of California and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

a. Where the existing quality of water is better than required under existing water quality control plans, such existing high quality will be maintained until it has been demonstrated that any change will be consistent with maximum benefit to the people of the state and will not unreasonably affect present and anticipated beneficial uses of such water.

b. Any activity that produces waste or increases the volume or concentration of waste and that discharges to existing high-quality waters will be required to meet waste discharge requirements that will ensure (1) pollution or nuisance will not occur and (2) the highest water quality consistent with the maximum benefit to the people of the state will be maintained and will not result in water quality less than that prescribed in the policies.

The proposed project involves construction activities that could affect high-quality waters; therefore, the state antidegradation policy applies.

Title 22

Water quality standards are enforceable limits composed of (1) the designated beneficial uses of water and (2) criteria (i.e., numeric or narrative limits) to protect those beneficial uses. Municipal and domestic supply is among the beneficial uses defined in Section 13050(f) of the Porter-Cologne Act, which defines them as uses of surface water and groundwater that must be protected against water quality degradation. MCLs are components of the drinking water standards adopted by DPH pursuant to the California Safe Drinking Water Act. California MCLs may be found in CCR Title 22, Division 4, Chapter 15, "Domestic Water Quality and Monitoring." DPH is responsible for implementing CCR Title 22 (Article 16, Section 64449), which defines secondary drinking water standards, established primarily for reasons of consumer acceptance (i.e., taste) rather than because of health issues.

MCLs for drinking water are directly applicable to water supply systems "at the tap" (i.e., at the point of use by consumers) and are enforceable by DPH and county health departments. California MCLs, both primary and secondary, are directly applicable to groundwater and surface water resources when they are specifically referenced as water quality objectives in the pertinent basin plan. In such cases, MCLs become enforceable limits by the SWRCB and RWQCBs. When fully protective of health, MCLs may also be used to interpret narrative water quality objectives prohibiting toxicity to humans in water designated as a source of drinking water in the basin plan. The proposed project involves construction activities that could affect beneficial uses of water; therefore, Title 22 standards apply.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

3.9.3 ANALYSIS METHODOLOGY

This impact analysis assumes that surface hydrology and/or water quality could be affected by the proposed project. For example, removing or disturbing riparian vegetation could increase water temperatures and sedimentation and potentially change stream morphology by resulting in the input of sediment. The following are other potential effects of the proposed project on hydrology and water quality:

- accidental spills of petroleum products or drilling lubricants;
- removal, disturbance, or exposure of soils resulting in water quality effects;
- increases in areas of impervious surfaces;
- temporary runoff of petroleum products or other construction-related materials;
- temporary mobilization of fine sediment in surface water; and
- disturbance or burial of stream channel substrate from uncontrolled release ("frac out") of drilling mud during directional drilling.

Impacts on hydrology and water quality that could result from construction and operational activities related to project activities were evaluated based on the criteria described in Chapter 2, "Project Description," including expected construction practices, materials used, and locations and duration of the activities. The effects of the

project were compared to existing environmental conditions to determine the duration and magnitude of effects. The impact analysis assumes that construction would conform to the latest requirements and standards pertaining to construction, maintenance, and runoff, and to the performance standards in Chapter 2, "Project Description."

3.9.4 DISCUSSION

a) Violate any water quality standards or waste discharge requirements?

Less-Than-Significant Impact. Temporary, short-term impacts associated with project construction and long-term impacts associated with project operation are described separately below.

TEMPORARY, SHORT-TERM IMPACTS ASSOCIATED WITH CONSTRUCTION

Construction activities under the proposed project (staging area preparation, plowing, trenching, and directional drilling) would involve using pickup/utility trucks, cable plows, trenchers, excavators with rock saws or rock breakers, dump trucks, backhoes, boring rigs, and bucket trucks. Potential construction activities would include vegetation clearing, trenching, directional drilling, soil placement, incorporation of plantings, and demobilization/cleanup. These activities have the potential to temporarily impair water quality because the construction-related wastes discharged into receiving waters could include disturbed and eroded soil and petroleum products. Soil and associated contaminants that enter receiving waters through stormwater runoff and erosion could increase turbidity, stimulate algae growth, increase sedimentation of aquatic habitat, and introduce compounds that are toxic to aquatic organisms. Accidental spills of construction-related substances such as oils, fuels, and directional drilling material could contaminate both surface water and groundwater. Groundwater or surface drainage that would fill excavated areas during project construction would require dewatering. Effluent from dewatering operations typically contains high levels of suspended sediment; often it also contains high levels of petroleum products and other construction-related contaminants. This effluent could be directly released to local receiving waters, thereby degrading water quality.

The extent of potential effects on water quality would depend on several factors: the tendency of soil types encountered to erode (see Table 3.6-2 above for a description of soil types along the proposed alignment), the depth to groundwater in trenched areas, the approaches to construction that would be used in a given area, the extent of the disturbed area, the duration of construction activities, the timing of particular construction activities relative to the rainy season, and the sensitivity of receiving water bodies to contaminants of concern.

SWPPPs would be prepared and implemented to protect water quality, as described in Environmental Protection Measure 3.9-1, "Prepare and Implement Storm Water Pollution Prevention Plans". The SWPPPs would identify and specify activities that might cause discharge of construction-related contaminants, including sediment, to major and localized receiving waters (e.g., culverts, ditches, swales) during storms, as well as the BMPs that would be employed to control pollutant discharges. The SWPPPs would include a sediment and erosion control plan that would comply with county and city grading and excavation requirements. The plan's BMPs would include measures to control erosion, stream sedimentation, dust, and soil mass movement. They would also include design provisions for stormwater management systems to prevent water quality degradation related to stormwater runoff and soil erosion from the project sites and minimize increases in turbidity in receiving waters. BMP designations would be based on those used by the California Stormwater Quality Association's construction BMP handbooks (CASQA 2009:Section 2).

Environmental Protection Measure 3.9-2, "Prepare and Implement an Inadvertent Release (Frac-out) Contingency Plan for Directional Drilling (Boring) under Sensitive Drainages and Waterways," requires preparation and implementation of an inadvertent release (frac-out) contingency plan. This plan must be implemented before any directional drilling may occur, to prevent, limit, and contain project-related seepage of bentonite (a fine nontoxic clay used to lubricate the bore during directional drilling) or other similar material into waters, wetlands, or other sensitive resources.

Environmental Protection Measure 3.8-1, "Prepare and Implement a Spill Prevention Plan," would reduce the potential for contamination by accidental spills. No refueling, storage, servicing, or maintenance of equipment would take place within 150 feet of drainages, sensitive waterways, or other sensitive environmental resources.

Incorporation of Environmental Protection Measures 3.9-1, 3.9-2, and 3.8-1 as described above, as part of the project and as conditions of project approval would fully reduce the temporary water quality effects from stormwater runoff, erosion, and spills associated with construction because SWPPPs and an inadvertent release (frac-out) contingency plan would be prepared and implemented, and because refueling, servicing, or maintaining equipment would be prohibited within 150 feet of sensitive resources. These environmental protection measures would be implemented with the appropriate regulatory approvals from the affected counties and cities and the CVRWQCB before any construction-related ground disturbing activities would begin. These approvals would include Section 401 water quality certification (if needed); a California statewide NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ); preparation and implementation of SWPPPs containing appropriate BMPs such as source control, revegetation, and erosion control, to maintain surface water quality conditions in adjacent receiving waters; and any other necessary site-specific permits or waivers. Therefore, this impact would be less than significant. No mitigation is required.

LONG-TERM IMPACTS ASSOCIATED WITH PROJECT OPERATION

The proposed project would not involve land use changes or construction of additional impervious surfaces that would result in contaminant loading of local drainages or receiving waters. Fiber would be installed underground using existing conduit, or conduit would be installed using the rights-of-way of existing roads for new fiber conduit. When water body or road crossings are required, the conduit would be either installed underground using directional drilling (boring) or attached to existing bridges, overpasses, or cellular towers.

Incorporation of Environmental Protection Measure 3.9-1, "Prepare and Implement Storm Water Pollution Prevention Plans," as part of the project and as a condition of project approval would ensure that post-construction BMPs would be used, in compliance with the SWPPPs, to prevent erosion or other contaminant loading as a result of project construction, fully reducing long-term impacts on water quality. Therefore, this impact would be less than significant. No mitigation is required.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

Less-Than-Significant Impact. Project construction and operation activities would not use groundwater. No additional impervious surfaces that would interfere with groundwater recharge would be created for the proposed project, because all new impervious surfaces would be installed in existing developed areas (i.e., at client institutions). Existing infrastructure would be used for conduit water and road crossings. New conduit would be placed underground in the rights-of-way of existing roads and state highways, and no additional impervious surfaces would be created. Therefore, this impact would be less than significant. No mitigation is required.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?

Less-Than-Significant Impact. The proposed project would not substantially alter existing drainage patterns because the conduit would be installed underground using plowing, the preferred method of conduit installation for construction, within the rights-of-way of existing roads and state highways and all disturbed areas would be restored to pre-project contours and conditions immediately following construction. Additionally, incorporation of

Environmental Protection Measure 3.9-1, "Prepare and Implement Storm Water Pollution Prevention Plans," requires that SWPPPs be prepared and incorporated as part of the project and as a condition of project approval. The SWPPPs would include a sediment and erosion control plan in compliance with affected county and city grading and excavation requirements to maintain preconstruction drainage patterns. Either directional drilling or existing infrastructure (i.e., bridges, overpasses, and cellular towers) would be used for water body or road crossings, and no grading would be required. Therefore, this impact would be less than significant. No mitigation is required.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?

Less-Than-Significant Impact. Project construction would not result in alteration of the course of any stream or river because all facilities would be constructed in existing road right-of-way or other developed or disturbed areas. Surface conditions would be restored to pre-project contours and conditions immediately following construction, and as such, surface drainage patterns would not be substantially altered. As no additional areas of impervious surfaces would be introduced as part of the proposed project, its implementation would not result in a substantial increase in surface runoff rates or volumes. Where the proposed route crosses large streams or canals, the conduit would be installed on bridges or directional drilling beneath canals or streams would be used. The depth of the bore would be at least 15 feet below the streambed alluvium, and this depth may increase based on site-specific conditions and on recommendations from regulatory agencies. Stream crossing origination and completion points would be a minimum of 100 feet from the edge of the stream, or at a distance approved by the appropriate regulatory agency. As such, the proposed project would not alter the course of an existing stream or river. Therefore, potential impacts related to potential on- or off-site flooding as a result of increased runoff or modified drainage patterns would be less than significant. No mitigation is required.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less-Than-Significant Impact. See response to question (a) and (c), above.

f) Otherwise substantially degrade water quality?

Less-Than-Significant Impact. See response to question (a), above.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. The proposed project involves building, operating, and maintaining a fiber optic communications network using established rights-of-way. No permanent housing that would be subject to flood hazards would be constructed or affected; therefore, no housing within a 100-year flood hazard area would be affected. No impact would occur. No mitigation is required.

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

No Impact. The proposed project would involve constructing new fiber and access boxes below the ground surface or using existing infrastructure (e.g., existing conduit, bridge crossings, existing power poles). Cabinet locations would be constructed within existing developed portions of client institution properties. No permanent structures that would impede or redirect flood flows would be placed within a 100-year flood hazard area. Therefore, no impact would occur. No mitigation is required.

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. Implementation of the proposed project would not involve work on levees or dams that could potentially weaken the integrity of such structures and result in additional risk to people or structures. In addition, the proposed project would not alter existing stream or river courses, which could reasonably be expected to modify flows in the event of a levee or dam failure. As described in the response to question (h) above, the proposed project does not include the construction of any structures in a flood hazard area. In addition, no structures would be constructed in the vicinity of existing waterways. The proposed facilities that would be constructed would either be contained underground or of a relatively small size and scale that it is reasonable to conclude that any potential floodwaters would not be redirected by their presence. As such, no impact would occur. No mitigation is required.

j) Result in inundation by seiche, tsunami, or mudflow?

No Impact. Only places near large bodies of water, such as lakes or oceans, are affected by seiches or tsunamis. The proposed project would not be affected by inundation from a seiche or tsunami because of the distance of the proposed route from the nearest open water body. The topography within and adjacent to the project footprint is established rights-of-way that are relatively level and not subject to mudflow. Therefore, no impact would occur. No mitigation is required.

3.10 LAND USE AND PLANNING

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X.	**Land Use and Planning. Would the project:**				
	a) Physically divide an established community?	☐	☐	☒	☐
	b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
	c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☒	☐

This section describes the general land uses within or adjacent to the proposed route's footprint that could be potentially directly or indirectly affected by the proposed project. For the purposes of this analysis, it is important to note that the proposed route and staging areas would be located within the rights-of-way of existing roads and state highways, or at existing developed anchor or client institutions (refer to Section 2.6 for further clarification). These road and state highway rights-of-way are generally disturbed and numerous utilities have been previously placed within the rights-of-way. The proposed route would not be located on undeveloped lands. Therefore, the following discussion of the project study area includes an overview of the aforementioned uses and resources, without detailed discussion of individual parcel owners or operators.

3.10.1 ENVIRONMENTAL SETTING

Major land uses in the 17 affected counties include urban, rural residential, industrial, commercial, and public uses. Established communities along the proposed route include Colusa, Sutter, Yuba City, Marysville, Colfax, Auburn, Diamond Springs, Jackson, Mokelumne Hill, San Andreas, Angels Camp, Vallecito, Columbia, Sonora, Jamestown, Stockton, Modesto, Turlock, Atwater, Merced, Fresno, Reedley, Dinuba, Orange Cove, Orosi, Visalia, Tulare, Delano, and Bakersfield. Land use character in the affected communities ranges from scattered residences along county road rights-of-way, small rural communities located away from major transportation corridors, and small town centers to major sprawling urban cities, interstate and state highway corridors, large urban city centers, and sprawling suburban areas. The larger cities—such as Stockton, Modesto, Fresno, Marysville, and Yuba City—contain large, centrally located industrial areas. Public uses include airports, roads, canals, schools, and parks. The proposed route is located within the Central Valley, and therefore, is not located within the California Coastal Zone.

There are various general plan and zoning designations along the proposed route. However, the proposed route would be sited within the rights-of-way of existing roads and state highways (fiber and conduit), which currently contain a variety of utility infrastructure, or would be located within the property boundaries of existing institutional sites (cabinets). Road and state highway rights-of-way and institutional sites are currently designated in city and county general plans, zoning codes, and ordinances to accommodate such uses.

3.10.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to land use and planning are relevant to construction and operation under the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

No state plans, policies, regulations, or laws related to land use and planning are relevant to construction and operation of the proposed project.

However, Caltrans has developed draft criteria to allow the installation of broadband communications vaults in Caltrans rights-of-way. The draft criteria are presented in Section 3.2, "Agriculture and Forestry Resources."

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

3.10.3 ANALYSIS METHODOLOGY

Analysis of the potential impacts of the proposed project on land use was based on review of aerial photography. A determination was made whether the footprint of the proposed route, including equipment nodes and cabinets, would be incongruous with adjacent land uses. General consideration was given to whether the proposed project, by its nature, would conflict with federal or state land use plans and policies.

3.10.4 DISCUSSION

a) Physically divide an established community?

Less-Than-Significant Impact. The proposed project would involve the construction of a fiber optic communications network within the rights-of-way of existing roads and state highways, and on developed properties at anchor and client institutions. The proposed route would be placed underground, and cabinet sites would be placed near other compatible uses at the anchor and client institutions (near existing maintained utility areas on office or educational campuses, for example). Although some temporary construction-related traffic disturbances affecting access from one portion of a community to another could occur, the proposed project would not permanently divide an established community. It should be noted and as evaluated in Section 3.16 below, incorporation of Environmental Protection Measures 3.16-1, 3.16-2, and 3.16-3 as part of the project and as conditions of project approval would reduce potential disruptions on local communities associated with temporary lane closures and potential detours by requiring preparation and implementation of traffic control plans and notification of construction activities to local landowners. Project operation and maintenance would not physically divide an established community because the fiber optic conduit would be placed primarily underground (or attached to bridges and cellular towers) within the rights-of-way of existing road and state highways, and the cabinets would be located on existing client institutions. No long-term operational effect would occur. Therefore, this impact would be less than significant. No mitigation is required.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less-Than-Significant Impact. Construction within the proposed alignment and staging areas would involve minor excavation within existing road and state highway rights-of-way, where utilities already exist, and construction on developed properties at anchor and client institutions, which are currently designated and zoned for public uses. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances. Therefore, this impact would be less than significant. No mitigation is required.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

Less-Than-Significant Impact. See response to questions (b) and 3.3.4(f), above.

3.11 MINERAL RESOURCES

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI.	**Mineral Resources. Would the project:**				
	a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
	b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

This section describes the known mineral resources that could potentially be directly or indirectly affected by implementing the proposed project. The study area for mineral resources includes resource sites that could potentially be affected by the proposed project if construction activities occurred close enough to affect site productivity, occurred at the site itself, or occurred within 2 miles of a known mineral resource.

3.11.1 ENVIRONMENTAL SETTING

EXISTING MINERAL RESOURCES

The California Geological Survey (CGS) (previously known as the California Division of Mines and Geology) has classified the regional significance of mineral resources in accordance with the California Surface Mining and Reclamation Act (SMARA). Mineral Resource Zones (MRZs) delineated by CGS identify the presence and significance of mineral deposits within the project study area (CGS SP 51). In general, areas subject to urbanization pressures are zoned by CGS, while areas not subject to urbanization pressures are not. The following MRZ categories are defined by CGS:

- **MRZ-1:** Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2:** Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- **MRZ-2a:** Areas underlain by mineral deposits where geologic data show that significant measured or indicated resources are present.
- **MRZ-2b:** Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present.
- **MRZ-3:** Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- **MRZ-3a:** Areas in which undiscovered mineral deposits similar to known deposits in the same producing district or region may be reasonably expected to exist.
- **MRZ-4:** Areas where available information is inadequate for assignment to any other MRZ.

A search of special reports developed by the California Division of Mines and Geology (now CGS) for each affected county was performed to determine if the proposed route would affect any land designated within an MRZ category. The State Geologist has yet to map the mineral resources in Amador, Colusa, Kings, Merced, Tuolumne, and Tulare Counties. Therefore, no MRZ designations exist within these counties. The State Geologist has issued special reports that map mineral resources in Madera, Placer, San Joaquin, Stanislaus, and Sutter Counties; however, the proposed route would not cross any land designated as an MRZ in these counties. Counties in which the proposed route would cross land designated as an MRZ are described below.

Calaveras County

According to Special Report 169, *Mineral Land Classification: San Andreas 15' Quadrangle, Calaveras County*, the proposed route would cross land designated as an MRZ-3a immediately northeast and south of the town of San Andreas, immediately north of the town of Angels Camp, and at Calaveras, San Antonio, and San Domingo Creeks. The proposed route would also cross multiple areas designated as MRZ-4 (CDMG 1993).

El Dorado County

According to Special Report 156, *Mineral Land Classification: Portland Cement Concrete Grade Aggregate in the Sacramento-Fairfield Production Consumption Region*, the proposed route would cross areas near the community of Perks Corner with MRZ-1 and MRZ-3 designations (CDMG 1988a).

Fresno County

According to Special Report 158, *Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region*, the proposed route would cross areas with MRZ-3 and MRZ-1 designations near the San Joaquin River, immediately north of the city of Fresno (CDMG 1986a).

Kern County

According to Special Report 147, *Mineral Land Classification: Aggregate Materials in the Bakersfield Production-Consumption Region*, the proposed route would cross areas with MRZ-2 designations both immediately south of the SR 99/SR 178 junction and immediately south of the SR 204/SR 178 junction. In addition, the proposed route would cross areas with MRZ-1, MRZ-2, and MRZ-3 designations near the Kern River, immediately north of the city of Bakersfield (CMDG 1988b).

Nevada County

According to Special Report 164, *Mineral Land Classification: Nevada County*, the proposed route would cross areas with MRZ-3a and MRZ-4 designations immediately northeast of the city of Grass Valley (CDMG 1990).

Yuba County

According to Special Report 132, *Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Yuba City-Marysville Production-Consumption Region*, the proposed route would cross an area with an MRZ-2 designation immediately east of the city of Marysville and along the Yuba River (CDMG 1986b).

OIL, GAS, AND GEOTHERMAL RESOURCES

No productive oil, gas, or coal developments, nor any geothermal resources are located in the vicinity of proposed route (California Division of Oil, Gas, and Geothermal Resources 2008).

3.11.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to mineral resources are relevant to construction and operation under the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Surface Mining and Reclamation Act

The primary state law concerning conservation and development of mineral resources is the SMARA of 1975, as amended. SMARA was enacted in 1975 to limit new development in areas with significant mineral deposits. SMARA is found in PRC Section 2710.

Depending on the region, natural resources can include geologic deposits of valuable minerals used in manufacturing processes and in the production of construction materials. SMARA calls for the State Geologist to classify the lands within California based on mineral resource availability. Furthermore, SMARA states that the extraction of minerals is essential to the continued economic well-being of the state and to the needs of society, and that reclamation of mined lands is necessary to prevent or minimize adverse effects on the environment and to protect the public health and safety (PRC Section 2711).

In addition to the SMARA, California Health and Safety Code (HSC) requires the covering, filling, or fencing of abandoned shafts, pits, and excavations (HSC Sections 24400–24403). Mining may also be regulated by local government, which has the authority to prohibit mining pursuant to its general plan and local zoning laws.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

ANALYSIS METHODOLOGY

Environmental impacts were determined based on a review of published literature and examination of aerial photographs, and site-specific field inspections of the proposed project components. Descriptions of mineral resources in the vicinity of the project study area were derived from maps published by the U.S. Geological Survey; California Department of Oil, Gas, and Geothermal Resources; and CGS.

DISCUSSION

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Less-Than-Significant Impact. The proposed route some areas designated as MRZ-2. However, the proposed project would not significantly obstruct any future ability to access these zones for mineral resources, as the proposed project would be constructed entirely within the rights-of-way of existing roads or state highways, or within existing developed anchor or client institutions. The permanent (i.e., operational) footprint of the proposed project would be avoided during future mining operations. In addition, based on examination of aerial photographs of the project area, the proposed route would not cross any MRZ-2 areas with currently functioning

mining operations. Construction in these areas would be temporary. The potential for the proposed project to result in the loss of a known state- or regionally valuable mineral resource is low. Therefore, this impact would be less than significant. No mitigation is required.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact. See response to question (a), above. Implementation of the proposed project would not result in the loss of any locally important resource recovery sites because of the temporary duration of construction activities and the noninvasive nature of project operation. Therefore, no impact would occur. No mitigation is required.

3.12 NOISE

ENVIRONMENTAL ISSUES		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII.	**Noise. Would the project result in:**				
a)	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
f)	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

This section describes the potential direct and indirect noise impacts that that could occur as a result of implementation of the proposed project. The analysis contained herein evaluates the potential for the proposed project to affect sensitive receptors located in the vicinity of the proposed alignment, including residential areas; schools and daycares; convalescent and acute-care hospitals; parks and recreational areas; and places of worship.

3.12.1 ENVIRONMENTAL SETTING

Noise is defined as unwanted or objectionable sound. Sound is usually considered unwanted when it interferes with normal activities, when it causes physical harm, and when it has adverse effects on health. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance and, in the extreme cases, hearing impairment.

Decibel (dB) is the unit of measure used to describe the loudness of sound. Because the range of sound that humans can hear is quite large, the dB scale is logarithmic, making calculations more manageable. A number of factors affect human perception of sound, including the actual sound level, frequencies involved, period of exposure to the sound, and changes or fluctuations in the sound level during exposure. To measure sound in a manner that accurately reflects human perception, several measuring systems or scales have been developed. The A-weighted scale reflects the fact that the human ear does not perceive all pitches or frequencies equally;

therefore, decibel measurements are adjusted (or weighted) to compensate for the human lack of sensitivity to low-pitched and high-pitched sounds. The adjusted unit is known as the A-weighted decibel (dBA).

To reflect the fact that ambient noise levels from various sources vary over time, they are generally expressed as an equivalent noise level (L_{eq}), which is a computed steady noise level over a specified period of time as the noise varies. L_{eq} values are commonly expressed for 1-hour periods, but different averaging times may be specified. When expressed over a 24-hour period, average noise levels are often identified as a day-night average sound level (L_{dn}).

For the evaluation of community noise effects, community noise equivalent level (CNEL) is often used. CNEL represents the average A-weighted noise level during a 24-hour day with a 5-dB addition for the period from 7 p.m. to 10 p.m., and a 10-dB addition for the period from 10 p.m. to 7 a.m.

The proposed route crosses 17 counties. As described in Section 3.10, "Land Use and Planning," the majority of land uses in the project vicinity are rural. However, portions of the proposed route are near residential uses, particularly within urbanized cities, towns, and communities. Existing sensitive receptors include any residential areas; schools and daycares; convalescent and acute care hospitals; parks and recreational areas; and places of worship located within approximately 1,300 feet of the proposed route and facilities. The existing noise environment within the project study area is generally influenced by surface transportation noise emanating from vehicular traffic on local roads, agricultural equipment operations, aircraft over-flights, and natural sounds (e.g., birds, water, wind, and insects). In urban areas—such as the city of Fresno—noise levels are higher as a result of increased traffic, stationary sources, and human populace.

Table 3.12-1 summarizes the modeled traffic noise levels 100 feet from the centerline of each major roadway where traffic volumes from Caltrans were available. Traffic noise level modeling occurs at 100 feet because it is considered a typical distance from the roadway centerline to adjoining noise sensitive uses. Major roadways typically include two 12- to 16-foot-wide lanes, a shoulder, and additional right-of-way. Considering traditional setback distance from property lines, most sensitive receptors are located approximately 100 feet from the center of the road. Traffic noise modeling is based on average daily traffic volumes, and distances from the roadway centerlines to the 60-dBA traffic noise contour. As shown in Table 3.12-1, the location of the 60-dBA L_{dn} contour ranges from 112 to 666 feet from the centerline of the modeled roadways.

Table 3.12-1
Summary of Modeled Existing Traffic Noise Levels

State Highway	Segment		Average Daily Traffic	CNEL, 100 Feet from Roadway Centerline (dBA)	Distance (feet) from Roadway Centerline to L_{dn} Contour
					60 dBA
SR 20	Colusa	Meridian	9,800	65.2	222
SR 20	Meridian	Yuba City	30,000	70.1	468
SR 20	Yuba City	Marysville	40,000	71.3	567
SR 174	Grass Valley	Colfax	8,100	64.4	195
SR 49	Auburn	Cool	9,000	64.8	210
SR 49	Cool	Coloma	3,500	60.7	112
SR 49	Sonora	SR 120	10,700	65.6	235
SR 120	SR 49	Tulloch Reservoir	15,200	67.1	297
SR 120	Tulloch Reservoir	Escalon	11,800	66.0	251
SR 108	Escalon	Modesto	16,100	67.3	309
SR 132	Modesto	Empire	14,900	67.0	293
SR 58	Bakersfield	Bakersfield	51,000	72.4	666

Notes: dBA = A-weighted decibels; CNEL = Community Noise Equivalent Level, SR = State Route.
Source: Modeled by AECOM in 2010.

Noise levels shown in Table 3.12-1 would be representative of the ambient noise levels present along the proposed route. Noise levels would vary from segment to segment and from day to day because of variations in construction intensity (and environmental effects), daily traffic volume fluxes, and changes in human behavior activities.

3.12.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Noise Control Act of 1972

EPA, Office of Noise Abatement and Control, was originally established to coordinate federal noise control activities. After inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, which established programs and guidelines to identify and address the impacts of noise on public health and welfare and the environment. In 1981, EPA administrators determined that subjective issues, such as noise, would be better addressed at lower levels of government. Consequently, the responsibility of regulating noise control policies was transferred to state and local governments in 1982. However, noise control guidelines and regulations contained in the prior EPA rulings remain upheld by designated federal agencies, thereby allowing more individualized control for specific issues by designated federal, state, and local government agencies.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

No state plans, policies, regulations, or laws related to noise are relevant to construction and operation under the proposed project.

REGIONAL AND LOCAL PLANS, POLICIES, LAWS, AND ORDINANCES

The proposed project includes approximately 30 segments that cross 17 counties. Table 3.12-2, below, provides the applicable noise standards established by each county crossed by the proposed route. Noise regulations of the incorporated cities crossed by the proposed route are not included in this analysis because of their similarity to the county regulations provided. However, where project construction occurs in incorporated cities, the affected city's regulations would supercede.

It should be noted that Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state, and federal laws, regulations, policies and ordinances.

3.12.3 ANALYSIS METHODOLOGY

Based on the type of use proposed, potential noise and vibration impacts would largely occur only during construction activities. Construction noise and vibration was modeled using equipment that is typically required for each phase of fiber optic conduit installation. Distances to the 50-dBA L_{eq} noise contour and the noise level at 50 feet were calculated using FHWA Roadway Construction Noise Model reference noise levels (FHWA 2006) and Federal Transit Administration (FTA) Noise and Vibration Effect Assessment Manual methodologies (FTA 2006). Noise impacts that could result from implementation of the proposed project were analyzed by identifying sensitive receptors along the proposed route and at anchor and client institutions, and evaluating whether or not the project would result in increased noise levels.

Noise thresholds applicable to the proposed project would vary depending on location. Local jurisdiction regulations (city and county general plan and noise ordinances) would apply to proposed project activities conducted within each respective jurisdiction. For detailed descriptions of local noise regulations applicable to the

proposed project, see Table 3.12-2, above. Noise regulations of the incorporated cities crossed by the proposed route are not included in this analysis because of their similarity to the county regulations provided.

Table 3.12-2
Noise Regulations of County Jurisdictions Affected by the Proposed Project

Jurisdiction	Construction Exemption	Daytime/Evening L_{eq}	Nightime L_{eq}	L_{max} (Daytime/Evening/Nighttime)	CNEL/L_{dn}
Colusa County	NA	50	45	NA	60
Sutter County	7 a.m.–6 p.m. Mon–Fri, 8 a.m.–5 p.m. Sat	55	45	70/65	60
Yuba County	7 a.m.–10 p.m.	50	45	60/55	60
Nevada County	NA	55/50	45	75/65/60	
Placer County	6 a.m.–8 p.m. Mon–Fri, 8 a.m.–8 p.m. Sat–Sun	55	45	70/65	60
El Dorado County	7 a.m.–7 p.m. Mon–Fri, 8 a.m.–5 p.m. Sat–Sun	55/50	45	70/60/55	60
Amador County	7 a.m.–6 p.m. Mon–Fri, 8 a.m.–5 p.m. Sat	60	45	75/65	60
Calaveras County	NA	NA	NA	NA	60
Tuolumne County	NA	50	45	70/65	60
San Joaquin County	6 a.m.–9 p.m.	50	45	70/65	65
Stanislaus County	7 a.m.–7 p.m.	55	45	75/65	60
Merced County	7 a.m.–6 p.m.	55	45	75/65	65
Madera County	7 a.m.–7 p.m. Mon–Fri, 9 a.m.–5 p.m. Sat	50	45	70/65	NA
Fresno County	6 a.m.–9 p.m. Mon–Fri, 7 a.m.–5 p.m. Sat–Sun	50	45	NA	NA
Kings County	NA	55	50	75/70	60
Tulare County	NA	NA	NA	NA	60
Kern County	6 a.m.–9 p.m. Mon–Fri, 8 a.m.–9 p.m. Sa–Sun	NA	NA	NA	65

Notes: All noise levels in A-weighted decibels, L_{eq} = hourly average noise level; CNEL = community noise equivalent level; L_{dn} = day-night noise level; NA = not applicable; L_{max} = maximum noise level; Daytime: 7 a.m.–7 p.m. or 10 p.m. if no evening standard; Evening 7 p.m–10 p.m.; Nighttime 10 p.m–7 a.m.

Sources: Colusa County 1989:Safety-29, Safety-31, Safety-34, Safety-35; Colusa County Municipal Code, Article 8, Section 8.01(a); Sutter County 2010:1-6; Yuba County 2010, Noise and Vibration:48-52; Yuba County Municipal Code, Section Chapter 8.20-Noise Regulations; Nevada County 1996:9-4 to 9-10; Placer County 1994:138-143; Placer County Municipal code, Article 9.36; El Dorado County 2009:261-268; Amador County 1988:12-34; Calaveras County 1996:VI-9 to VI-10; Tuolumne County 1996:5-1 to 5-7; San Joaquin County 1999:V-10 to V-11; Stanislaus County 2006:4-15 to 4-18; Stanislaus County Municipal Code, Chapter 10.46 Noise Control; Merced County 1990:IV-21 to IV-25; Madera County 1995:73-78; Madera County Municipal Code, Chapter 9.58 Noise Regulations; Fresno County 2000:6-13 to 6-15; Fresno County Municipal Code, Chapter 8.40 Noise Control; Kings County 2010:N-33 to N-41; Tulare County 2010:10-13 to10-15; Kern County 2009:148-150; Kern County Municipal Code, Chapter 8.36-Noise Control.

3.12.4 DISCUSSION

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less-Than-Significant Impact. Construction of the proposed project is anticipated to take up to 14 months to complete. Construction would occur in 30 geographic segments, some of which would be constructed simultaneously. An individual segment may have up to three separate construction crews working on it at any

given time, with plowing installation, trenching installation, and directional drilling installation occurring simultaneously in different locations of the same segment. Construction would be temporary, and noise and vibration would be generated from within a 600- to 750-linear-foot area per day as construction progresses along the proposed alignment; therefore, sensitive receptors would only be exposed to construction-related noise on a temporary basis, and for a short duration of time.

As noted above, construction noise was modeled using equipment that is typically required for each phase of fiber optic line installation. Distances to the 50-dBA L_{eq} noise contour and the noise level at 50 feet were calculated using FHWA Roadway Construction Noise Model reference noise levels (FHWA 2006) and FTA Noise and Vibration Effect Assessment Manual methodologies (FTA 2006). Modeling results are presented in Table 3.12-3, below.

Table 3.12-3
Construction Equipment Noise Emission Levels Per Construction Phase

Construction Phase	Construction Equipment	Number of Crews/Workers	Noise Level at 50 Feet (dBA L_{eq})	Distance to 50-dBA L_{eq} Contour (feet)
Trenching	Excavator, rock drill, backhoe, dump truck	3/9	85.2	1,278
Directional drilling	Boring rig, backhoe, pickup	2/6	81.9	941
Fiber blowing	Air compressor, backhoe, pickup	3/9	79.0	725
Aerial fiber hanging	Pickup, bucket lift	1/3	78.0	660
Fiber splicing	Pickup	2/2	51.0	55

Notes: dBA = A-weighted decibels; L_{eq} = average hourly noise level.
Source: Modeled by AECOM in 2010; see Appendix I for complete modeling results

As detailed in Table 3.12-3, noise levels from construction activities associated with the proposed project would exceed applicable local noise regulations at sensitive receptors that are located within approximately 1,278 feet of construction activities. Typically, construction noise is exempted from local noise standards as long as construction activities take place during the day and have all manufacturer-recommended noise control devices installed and functioning properly. These regulatory exemptions reflect the local jurisdictions' acknowledgement that construction noise is a necessary part of new development and does not create an unacceptable public nuisance when conducted during the least noise sensitive hours of the day (see Table 3.12-1). Furthermore, incorporation of Environmental Protection Measure 3.12-1, "Reduce Noise Levels from On-Site Construction Equipment," as part of the project and as a condition of project approval would reduce on-site noise levels during construction and ensure that nearby receptors do not experience adverse noise levels in excess of established standards by restricting construction activities to the less-noise-sensitive hours of the day, regularly maintaining equipment, equipping construction equipment with noise control devices, and providing additional as-needed noise suppression to nearby receptors that experience elevated noise levels during construction.

If, because of unforeseen circumstances, construction activities would need to be conducted during the more noise-sensitive hours (i.e., evening, nighttime, and early morning) or if construction equipment is not properly equipped with noise control devices, construction-related noise levels could exceed the applicable standards. This would cause a substantial temporary increase in the ambient noise levels in the area, resulting in noise impacts on nearby sensitive receptors. However, incorporation of Environmental Protection Measure 3.12-1, "Reduce Noise Levels from On-Site Construction Equipment," and Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies" as part of the project and as conditions of project approval would ensure that noise levels occurring during the construction of the proposed project would be in compliance with all applicable regulations and that local sensitive receptors are not significantly impacted. It

should be noted, however, that the need to conduct construction activities during noise-sensitive hours is not anticipated as part of the proposed project.

Negligible operational noise associated with maintenance activities are anticipated upon completion of construction, due to the type of use proposed. No substantial increases in roadway vehicle trips or new stationary equipment that could potentially generate noise would result from implementation of the proposed project (e.g., the proposed cabinets would not contain back-up generators that would generate noise.) As such, the potential for the proposed project to result in noise levels in excess of established standards is considered minimal. Therefore, this impact would be less than significant. No mitigation is required.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less-Than-Significant Impact. Construction of the proposed project would result in the generation of ground vibration associated from plowing, trenching, directional drilling and other construction-related activities involving the use of heavy equipment. Construction-generated vibration could temporarily affect sensitive receptors located near construction activities.

In addition to noise, construction activities have the potential to result in varying degrees of temporary ground vibration depending on the specific construction equipment used and operations involved. Ground vibration levels associated with various types of construction equipment are summarized in Table 3.12-4. Based on the representative vibration levels identified for various construction equipment types, sensitive receptors located near construction activities could be exposed to groundborne vibration levels exceeding the recommended FTA and Caltrans guidelines of 80 vibration decibels (VdB) and 0.2 inch per second peak particle velocity (in/sec PPV), respectively (FTA 2006; Caltrans 2004).

Table 3.12-4
Representative Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 feet (in/sec)[a, b]	Approximate Lv (VdB) at 25 feet[c]
Pile driver (effect)	Upper range	1.518	112
	Typical	0.644	104
Pile driver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Heavy-duty trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Notes:
[a] Where PPV is the peak particle velocity.
[b] Vibration levels can be approximated at other locations and distances using the above reference levels and the following equation: PPV zequip = PPV ref (25/D)1.1 (in/sec); where "PPV ref" is the given value in the above table, "D" is the distance for the equipment to the new receiver in feet.
[c] Where Lv is the RMS velocity expressed in vibration decibels (VdB), assuming a crest factor of 4.
Source: FTA 2006: 12-12

A sensitive receptor would need to be located within 15 feet of construction activities for vibration levels to exceed recommended structural damage criteria of 0.2 in/sec PPV, and within 43 feet of construction activities for vibration levels to exceed recommended human disturbance criteria of 80 VdB (see Appendix I). Because construction activities would occur in road and state highway rights-of-way, they would not occur within 15 feet of any structures. However, construction activities would occur within 43 feet of sensitive receptors (residential structures), thus resulting in temporary construction-related impacts on groundborne noise and vibration levels in excess of applicable regulations. The proposed project does not include the construction or operation of facilities or structures that would result in long-term permanent impacts to groundborne noise and vibration levels.

Incorporation of Environmental Protection Measure 3.12-1, "Reduce Noise Levels from On-Site Construction Equipment" (hours of operation constraints), as part of the project and as a condition of project approval would ensure that temporary, construction-related vibration impacts would be in compliance with applicable regulations and would be reduced to the extent feasible by regularly maintaining equipment, equipping construction equipment with noise control devices, and providing additional as-needed noise suppression to nearby receptors that experience elevated noise levels during construction. Therefore, the proposed project would not result in the generation of excessive groundborne vibration or groundborne noise levels, and this impact would be less than significant. No mitigation is required.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-Than-Significant Impact. The proposed project is not anticipated to result in any substantial direct or indirect increases in long-term operational noise. Operational noise associated with the proposed project would be limited to routine inspection and maintenance of the cabinets and access boxes along the proposed alignment, which would be minimal, and any increases in ambient noise levels would be considered negligible. No permanent noise-producing equipment or generators would be installed. Because the proposed project would not create any new noise or vibration sources and maintenance activities would be minimal and intermittent, impacts would be less than significant. No mitigation is required.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-Than-Significant Impact. As noted above in the response to question (a), temporary increases in noise levels could occur at nearby receptors as a result of construction activities. However, construction would be subject to the regulations and noise standards within the jurisdictions through which the proposed alignment proceeds. Furthermore, Environmental Protection Measure 3.12-1, "Reduce Noise Levels from On-Site Construction Equipment," requires muffling of project-related construction equipment and restriction of construction activities to less noise-sensitive hours of the day unless additional measures are implemented that demonstrate that potential increases in ambient noise levels would be minimized. With incorporation of Environmental Protection Measure 3.7-1 as part of the project and as a condition of project approval, and as noted above in the response to question (a) above, temporary increases in ambient noise levels at nearby sensitive receptors as a result of the proposed project would be considered less than significant. No mitigation is required.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less-Than-Significant Impact. The proposed project includes the installation of a fiber optic cable network within existing rights-of-way of roads and state highways and the construction of facilities on developed anchor or client institutions). No residential units or commercial facilities that would generate permanent residents or workers are proposed. Construction workers could be exposed to aircraft noise from airports that are within 2 miles of the proposed route; however, this exposure would be temporary and intermittent, as construction would

move quickly at 600–750 feet per day. Therefore, this impact would be less than significant. No mitigation is required.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Less-Than-Significant Impact. See response to question (e), above.

3.13 POPULATION AND HOUSING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. Population and Housing. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

This section describes the communities and populations that could be potentially directly or indirectly affected by the proposed project. The study area includes the 17 California counties that would be crossed by the proposed route, including Amador, Calaveras, Colusa, El Dorado, Fresno, Kings, Kern, Merced, Madera, Nevada, Placer, San Joaquin, Stanislaus, Tuolumne, Tulare, Sutter, and Yuba Counties. Available demographics for these counties are provided.

ENVIRONMENTAL SETTING

POPULATION

Table 3.13-1 provides population data for the regions and counties in the vicinity of the proposed route, including current 2010 population numbers and population projections for 2020. In comparison by region, the largest population centers are in the southern San Joaquin Valley, followed by counties in northern San Joaquin Valley. Of the 17 counties affected by the proposed project, Fresno County is the most populated at 938,478 in 2010. This is followed by Kern County (871,728) and San Joaquin County (741,417). These counties also follow the same ranking for projected population in 2020. As shown in Table 3.13-1, the largest percentage increase in population over the 10-year horizon would occur in Sutter County (38.0%), followed by Yuba County (35.8%) and Madera County (31.3%).

HOUSING

Housing types throughout the study area range from single-family homes on large, ranch-style and wooded properties to small apartments in urban communities. Table 3.13-2 provides the number of occupied and vacant housing units in each county. Similar to population trends discussed above, Fresno, Kern, and San Joaquin Counties contain the highest number of housing units.

EMPLOYMENT

Table 3.13-2 provides study area data on the number of people in the labor force and unemployment rates as of November 2010. According to Table 3.13-2, the largest labor force populations can be found in the northern and southern San Joaquin Valley regions. Similar to trends discussed under "Population" and "Housing" above, the highest number of jobs are in Fresno, Kern, and San Joaquin Counties. As shown in Table 3.13-2, the lowest

Table 3.13-1 Population Projections in the Study Area (2010–2020)			
	Population		
Region/County	2010	2020	Percent Change
Northern Sacramento Valley			
Colusa	23,787	29,588	24.4
Sutter	102,326	141,159	38.0
Yuba	80,411	109,216	35.8
Sierra Nevada Foothills			
Amador	40,337	47,593	18.0
Calaveras	47,750	56,318	17.9
El Dorado	189,308	221,140	16.8
Nevada	102,649	114,451	11.5
Placer	347,543	428,535	23.3
Tuolumne	587,21	64,161	9.3
Northern San Joaquin Valley			
Madera	162,114	212,874	31.3
Merced	273,935	348,690	27.3
San Joaquin	741,417	965,094	30.7
Stanislaus	559,708	699,144	24.9
Southern San Joaquin Valley			
Fresno	938,478	1,201,792	28.1
Kern	871,728	1,086,113	24.6
Kings	164,535	205,707	25.0
Tulare	466,893	599,117	28.3
Source: California Department of Finance 2007			

unemployment rates occur mostly in Sierra Nevada foothill counties, with the lowest unemployment rate of 11.5% found in Placer County, at 11.5%, followed by Nevada (11.7%), El Dorado (12.7%), and Sutter (12.7%) Counties. This trend indicates that the Sierra Nevada foothill region provides the most employment opportunities in relation to the workforce population. In comparison, the highest unemployment rates occur in the northern Sacramento Valley and northern San Joaquin Valley regions. Colusa County, at 20.8%, has the highest unemployment rate, followed by Merced (18.6%), Yuba (18.6%), and San Joaquin (17.5%) Counties.

MEDIAN INCOME

Table 3.13-2 provides 2008 data on median income for counties within the study area. The data shows that higher income counties, including Placer and El Dorado Counties, are generally located in suburban cities near larger population centers with more high-paying professional job opportunities, such as the Sacramento metropolitan area. Lower income counties in the study area, such as Yuba County, generally have much smaller population centers and less high-paying jobs available.

Table 3.13-2
Housing, Employment, and Socioeconomic Data in the Study Area

Region/County	Housing Units[a,b]	Labor Force[b]	Unemployment Rates[b]	Median Household Income[a]	Below U.S. Poverty Level[a,d]
Northern Sacramento Valley					
Colusa	7,448	11,600	20.8	$50,288	13.4
Sutter	33,214	90,300	12.7	$52,505	12.8
Yuba	27,879	27,900	18.6	$33,819	18.3
Sierra Nevada Foothills					
Amador	17,280	17,690	13.0	$56,258	7.8
Calaveras	27,058	16,500	15.9	$57,703	12.1
El Dorado	82,499	90,300	12.7	$70,022	8.1
Nevada	49,740	50,120	11.7	$56,890	8.5
Placer	144,813	175,200	11.5	$73,260	6.2
Tuolumne	30,340	26,080	13.6	$47,466	10.4
Northern San Joaquin Valley					
Madera	48,637	66,400	15.7	$45,646	17.8
Merced	82,618	107,200	18.6	$44,338	21.0
San Joaquin	226,256	299,000	17.5	$54,711	15.3
Stanislaus	173,323	238,000	17.2	$51,601	14.1
Southern San Joaquin Valley					
Fresno	304,156	442,500	16.9	$45,805	21.2
Kern	268,079	367,800	15.4	$46,442	19.9
Kings	41,688	62,400	16.4	$49,419	17.8
Tulare	135,186	205,500	16.8	$43,995	13.2

[a] Data are for 2008.
[b] Includes occupied and vacant housing units.
[c] Data are current as of November 2010.
[d] Percentage of individuals below the U.S. poverty level. The poverty level threshold for 2008 was an annual income of $10,991.
Sources: U.S. Census Bureau 2010;California Employment Development Department 2010

POVERTY LEVEL

Table 3.13-2 provides the percentage of individuals in the study area that are below the U.S. poverty level for 2008. The highest percentages of individuals below the U.S. poverty level can be found in both the northern (Merced County) and southern San Joaquin Valley regions (Fresno and Kern Counties), which contain the largest population centers in the study area and are areas with fewer opportunities for skilled and professional jobs.

3.13.1 REGULATORY SETTING

3.13.2 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to population and housing are relevant to construction and operation under the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

No state plans, policies, regulations, or laws related to population and housing are relevant to construction and operation under the proposed project.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

No regional or local plans, policies, regulations, or laws related to population and housing are relevant to construction and operation under the proposed project.

3.13.3 ANALYSIS METHODOLOGY

Effects on population and housing were analyzed by identifying demographic characteristics for counties affected by the proposed project and evaluating whether implementing the proposed project would result in changes to population, housing, employment, and income levels.

DISCUSSION

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The proposed project would provide new, underground fiber-based infrastructure and install new cabinets at client institutions. No new homes, business, or road extensions are proposed as part of the project. The provision of new fiber-based infrastructure in and of itself would not induce population growth in an area. Therefore, no impact would occur. No mitigation is required.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed project would provide new, underground fiber-based infrastructure and install new cabinets at client institutions. Because the proposed project would not require relocation of people, land acquisition of any properties, including residences, and would not increase the number of residents or permanent workers along the route, the proposed project would not generate additional demand for housing along the proposed route or elsewhere. Therefore, no impact would occur. No mitigation is required.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. See response to question (b), above.

3.14 PUBLIC SERVICES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. Public Services. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

This section describes the public services in the vicinity of the proposed route—including fire protection, law enforcement services, schools, parks, and other public facilities—that could potentially be directly or indirectly affected by construction or operation of the proposed project.

ENVIRONMENTAL SETTING

LAW ENFORCEMENT SERVICES

In the northern Sacramento Valley, law enforcement services are provided by county sheriff offices in the unincorporated parts of Colusa, Yuba, and Sutter Counties. In the Sierra Nevada foothills, law enforcement services are provided by county sheriff offices in the unincorporated parts of Nevada, Placer, El Dorado, Amador, Calaveras, and Tuolumne Counties. In the northern and southern San Joaquin Valley, law enforcement services are provided by county sheriff offices in the unincorporated parts of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern Counties. Within incorporated city limits, the respective city would provide police protection.

FIRE PROTECTION SERVICES

In the northern Sacramento Valley, fire protection services are provided mostly by the aforementioned counties' fire departments, or fire districts (multiple stations) in the unincorporated parts of each respective county, and city fire departments in each incorporated respective city. The Sutter County Fire Department provides limited hazardous materials handling services through its hazardous materials response team. In some rural parts of Yuba County, fire protection services are provided by the California Department of Forestry and Fire Protection. In the Sierra Nevada foothills and in the northern and southern San Joaquin Valley, fire protection services are also provided mainly by the aforementioned counties' fire departments in the unincorporated parts of each respective county, and city fire departments in each incorporated respective city.

SCHOOLS AND LIBRARIES

Numerous public schools are located along the proposed route. Appendix H provides the schools located within a 2-mile buffer of the proposed route. Also located on or near the proposed route are the county Offices of Education for all of the 17 affected counties. Community colleges include Yuba, Columbia, San Joaquin Delta, Merced, Yosemite, Reedley, Fresno City, College of the Sequoias, West Hills, Porterville, and Kern. CSU Fresno and CSU Bakersfield are also located along the proposed route. All of the affected counties have libraries along the route.

REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to public services are relevant to construction and operation under the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Under California law, CPUC is responsible for approving construction of utility facilities, including telecommunications lines. Under Public Utilities Code Section 1001, such facilities require a Certificate of Public Convenience and Necessity before construction and operation.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies During Project Construction and Operation," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

ANALYSIS METHODOLOGY

Effects on public services that would result from implementation of the proposed project were identified by comparing existing public services against those that would be required for construction and operation of the proposed project. Evaluation of potential public services impacts was based on a review of the general plans of the counties traversed by the proposed route.

DISCUSSION

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

No Impact. The proposed project would involve construction and operation of a fiber optic communications network. The proposed route and cabinet sites would be located within the rights-of-way of existing roads and state highways, and on developed properties at anchor and client institutions. As described under 3.13, no new homes or business are proposed as part of the project; therefore, the proposed project would not result in new population and would not affect the demand for or provision of public services (police, fire, schools, parks, or other public facilities). As a result, the proposed project would not result in substantial adverse impacts associated with the provisions of or need for new or physically altered governmental facilities, the construction of which

could cause adverse impacts, to maintain acceptable service ratios, response times, or other performance objectives. Therefore, no impact would occur. No mitigation is required.

3.15 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. Recreation. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

This section describes the park and recreation properties maintained by federal, state, and regional and local agencies that have the potential to be directly or indirectly affected by the proposed project. The study area for recreational resources is composed of federal, state, regional, and local parks and other recreation lands that could be affected by the proposed project because construction would occur close to the respective recreational facility (within 2 miles) or because specific access roads to these lands would be indirectly affected by project construction.

3.15.1 ENVIRONMENTAL SETTING

RECREATIONAL RESOURCES ALONG THE PROPOSED ROUTE

The proposed route would traverse state-maintained roadways, county-owned roads (both urban and rural), and local roadways. The project would be located within the rights-of-way of existing roads. The proposed route would pass through a variety of landscapes: urbanized commercial, retail, office, residential, and institutional areas, as well as more remote agricultural areas, open space, rivers and lakes, forestland, and woodland areas. Recreational areas and facilities identified near the proposed route include locally maintained public parks and recreational facilities, recreational uses on school properties, private golf courses and recreational facilities, and state-maintained parks. These recreational resources are located adjacent to the proposed route and facilities.

FEDERAL RECREATION LANDS IN THE STUDY AREA

A total of 12 BLM properties would be crossed by the proposed route. Seven of these properties are in El Dorado County, three in Amador County, and two in Calaveras County. These BLM properties are within rights-of-way that pass through forested rolling hills, either in remote areas or near rural residences. The BLM lands that would be crossed by the proposed route are within the rights-of-way of roads located in mostly forested and open space areas. No formally designated recreation sites (such as federal parks) exist along the proposed route. Lands that provide recreational opportunities to permitted users are located within one-quarter mile of the proposed route, but the route would not cross these lands. No U.S. Forest Service or USFWS lands or refuges are located along the proposed route.

CALIFORNIA STATE PARKS PROPERTIES ALONG THE PROPOSED ROUTE

Northern Sacramento Valley

One state park is located within the northern Sacramento Valley region. Colusa–Sacramento River State Recreation Area, located in Colusa, is maintained by State Parks, offering visitors campsites, picnic sites, and a launch ramp for small boats (State Parks 2010a). Exhibit 3.15-1 illustrates the proposed route in relation to the Colusa–Sacramento River State Recreation Area.

Sierra Nevada Foothills

In the Sierra Nevada foothills region, Empire Mine State Historic Park, Marshall Gold Discovery State Park, and Columbia Historic State Park are located along the proposed route.

Situated southeast of Grass Valley in Nevada County, Empire Mine State Historic Park is the site of one of the oldest, largest, deepest, longest, and richest gold mines in California. The mine operated for more than 100 years, producing 5.6 million ounces of gold before it was closed in 1956. The park contains many of the mine's buildings, the owner's home and restored gardens, and the entrance to 367 miles of abandoned and flooded mine shafts. The park consists of forested backcountry and 8 miles of trails used for hiking, mountain biking, and horseback riding (State Parks 2010b).

Marshall Gold Discovery State Historic Park in Coloma is the site where James W. Marshall discovered gold in 1848 (Exhibit 3.15-1). This event led to the mass migration of people to the West Coast. Today, the park provides visitors and opportunity to pan for gold, and hike and picnic within the oak woodlands. James W. Marshall is buried within the park, at a location overlooking the river canyon where he discovered gold. The park also includes California's first historic monument, a statue of James W. Marshall pointing at his gold discovery site (State Parks 2010c).

Columbia Historic State Park is a historic district, located in the community of Columbia in Tuolumne County (Exhibit 3.15-1). The historic park has been preserved with Gold Rush–era shops, restaurants, and two hotels. The park provides visitors with various educational opportunities including learning about the gold mining history of Columbia, riding a 100-year-old stagecoach, and panning for gold (State Parks 2010d).

Northern San Joaquin Valley

In the northern San Joaquin Valley region, the proposed route would not cross or be adjacent to any State Parks properties.

Southern San Joaquin Valley

In the southern San Joaquin Valley region, the proposed route would not cross or be adjacent to any State Parks properties.

Regional and Local Parks along the Proposed Route

Recreation along the proposed route consists mostly of regionally and locally maintained parks and educational facilities where connections to existing and new cabinets would be located. These regional and local parks are composed mostly of open landscaped areas, paved areas, trails, and outdoor sporting fields. Ranging in size, these local parks include mini, neighborhood, community, and regional parks. However, the proposed route would be located within the rights-of-way of existing roads and state highways and within cabinets, and other facilities would be located within existing client institutions. The proposed route would not be located within any regionally or locally maintained parks and recreational facilities.

3.15.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Recreation and Public Purposes Act

As described above, public lands under BLM jurisdiction are located along the proposed route. The Recreation and Public Purposes Act (Title 43, Section 869 et seq. of the USC) applies to all public lands, except lands within national forests, national parks and monuments, national wildlife refuges, Native American lands, and acquired lands. This law authorizes the sale or lease of public lands for recreational or public purposes to state and local governments and to qualified nonprofit organizations. Examples of typical uses under the Recreation and Public Purposes Act are historic monument sites, campgrounds, schools, firehouses, law enforcement facilities, municipal facilities, landfills, hospitals, parks, and fairgrounds (BLM 2010). Because BLM lands are located along the proposed route, this law could apply to the proposed project if any existing utility easements through which the proposed route would cross were granted by BLM.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

State Park Preservation Act

The primary instrument for protecting and preserving parkland is the State Park Preservation Act (PRC Section 5400). This law stipulates that cities and counties may not acquire any real property that is in use as a public park for any nonpark use unless compensation or land (or both) is provided to replace the parkland acquired. This requirement results in no net loss of parkland and facilities. If the proposed route would cross parkland, this law would apply and compensation may be required.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

No regional or local plans, policies, regulations, or laws related to transportation and traffic are relevant to construction and operation under the proposed project.

3.15.3 ANALYSIS METHODOLOGY

Impacts on recreational resources that would result from implementation of the proposed project were analyzed by identifying adjacent recreational areas and facilities along the proposed route.

3.15.4 DISCUSSION

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The proposed project would involve the installation of new fiber infrastructure within previously disturbed areas. The project would not result in the removal of any existing recreational opportunities that could result in an increase in recreational facility use elsewhere. Furthermore, the proposed project would not result in an increase in population that could have secondary impacts with respect to increases in recreational facility usage. As such, the proposed project would not result in increased use of recreational facilities, such that physical deterioration of existing facilities would occur as a result of project implementation. No impact would occur. No mitigation is required.

California State Parks Properties along the Proposed Route

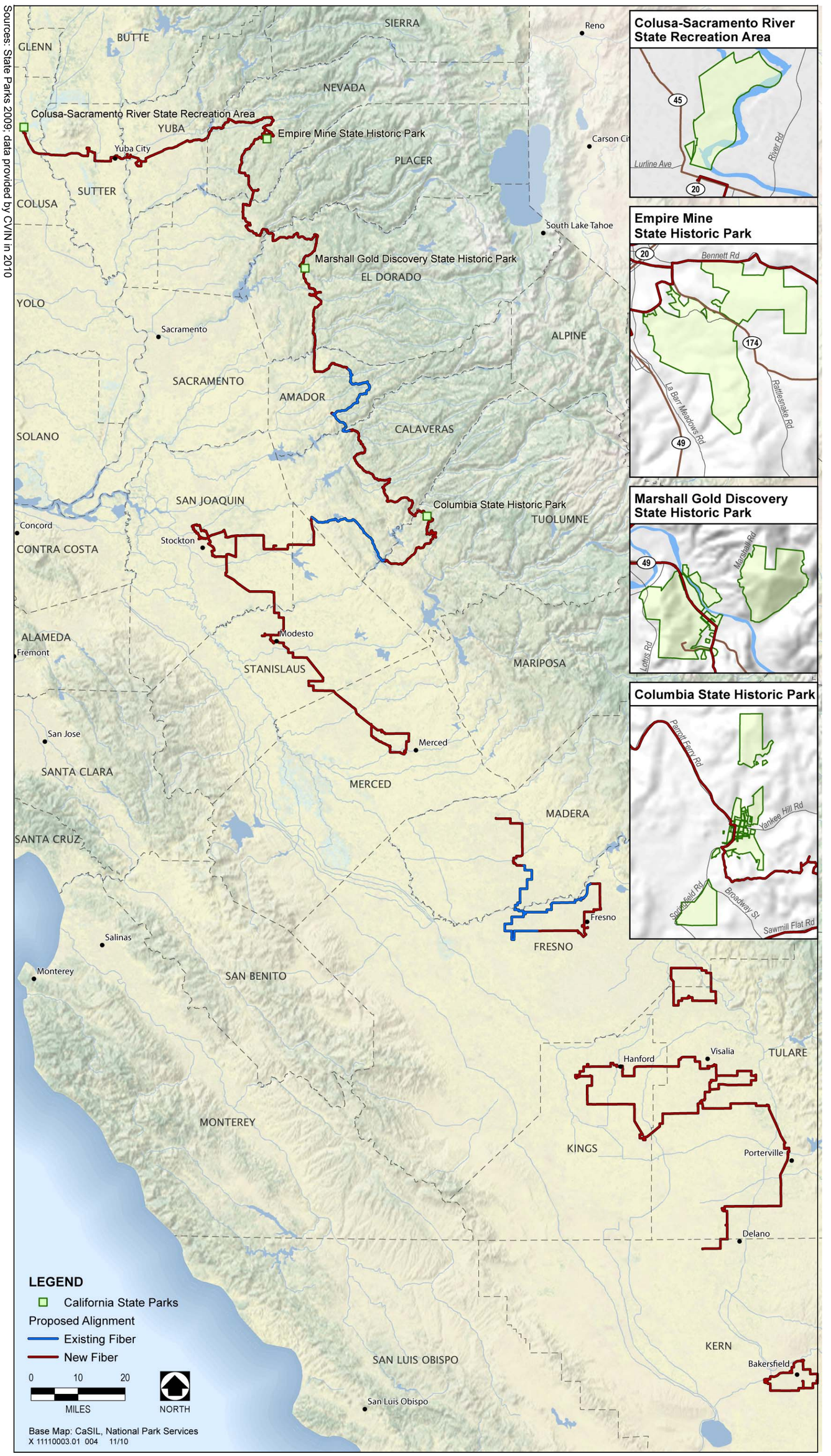


Exhibit 3.15-1

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No Impact. The proposed project would provide new underground fiber-based infrastructure and new cabinets would be installed at client institutions. The proposed project would neither increase the number of residents along the route nor involve the construction of residential units; therefore, demand for recreational facilities would not increase. In addition, no recreational facilities would be created as a result of project implementation. No impact would occur. No mitigation is required.

3.16 TRANSPORTATION/TRAFFIC

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. Transportation/Traffic. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

This section describes transportation infrastructure in terms of affected rights-of-way, transit services, and nearby airports in the study area. The study area for the analysis of transportation and traffic consists of the state highways and roadways within the 17 California counties that would serve as the primary means of access to the proposed route and new and existing fiber-based infrastructure. Access to the proposed route during project construction and operation would be located along the rights-of-way of state-maintained roadways, county-owned roads (both urban and rural), and local roadways for some of the client institutions at educational properties. Exhibit 3.16-1 shows the transportation network along the proposed route. See Appendix A for detailed maps that show county-owned and local roadways and access to client facilities along the proposed route.

3.16.1 ENVIRONMENTAL SETTING

Roadways in the Study Area

The roadways in the vicinity of the proposed route are described below by region and shown in the detailed maps presented in Appendix A.

Northern Sacramento Valley

In this region, the proposed route would be oriented primarily east-west and constructed within the rights-of-way of county-maintained roads that are mostly one lane in each direction. The route would also follow the right-of-way of SR 20, a state-maintained highway that traverses Colusa, Sutter, and Yuba Counties. Within the northern Sacramento Valley, the proposed route would also cross SR 99 in Sutter County and SR 70 in Yuba County.

Sierra Nevada Foothills

Within the Sierra Nevada foothills, the proposed route would run primarily north-south in a winding pattern along ascending and descending grades. Roads in this portion of the study area where project construction would occur in the right-of-way are a mixture of local, county, and state-maintained roadways. Affected state-maintained highways include SR 49 in Placer, El Dorado, Amador, and Calaveras Counties; SR 174 and SR 193 in Placer County; and SR 88 in Amador County. The proposed route would also cross Interstate 80 in Placer County and U.S. Highway 50 in El Dorado County.

Northern San Joaquin Valley

The northern San Joaquin Valley portion of the proposed route and facilities would be located within the rights-of-way of local and county-maintained roads, with some state-maintained roads also affected. Affected state-maintained highways include SR 26 and SR 120 in San Joaquin County and SR 132 in Stanislaus County. The proposed route would also cross SR 99 in San Joaquin County.

Southern San Joaquin Valley

The southern San Joaquin portion of the proposed route and facilities would also be located within the rights-of-way of local and county-maintained roads, with some state-maintained roads also affected. Affected state-maintained highways include SR 145 in Fresno County and SR 63 in Tulare County. The proposed route would also cross SR 41, SR 99, and SR 145 in Fresno County and SR 63 in Tulare County.

Transit Services

Transit services near the proposed route consist primarily of local bus service in the urban and suburban communities of Yuba City, Marysville, Auburn, Stockton, Modesto, Turlock, Merced, Fresno, and Bakersfield. These local bus services are operated by providers that serve areas at a citywide or regional level. Statewide and nationwide transit services are provided by Greyhound bus service and Amtrak passenger train and bus service.

Railroads

The Burlington Northern Santa Fe and Union Pacific Railroad rail lines pass through the study area. The proposed route and facilities would cross within the rights-of-way of and underneath active rail lines. Exhibit 3.16-1 illustrates where these rail lines are located near the proposed route and facilities.

Airports

Several airports are located within 2 miles of the proposed route. Smaller private airstrips, public regional airports, and a small international airport in Fresno are all located near the route. Airports along the proposed route are shown in Exhibit 3.16-1.

3.16.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to transportation and traffic are relevant to construction and operation under the proposed project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Caltrans is responsible for the design, construction, maintenance, and operation of California's state highway system, as well as a portion of the interstate highway system within the state's boundaries.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

3.16.3 ANALYSIS METHODOLOGY

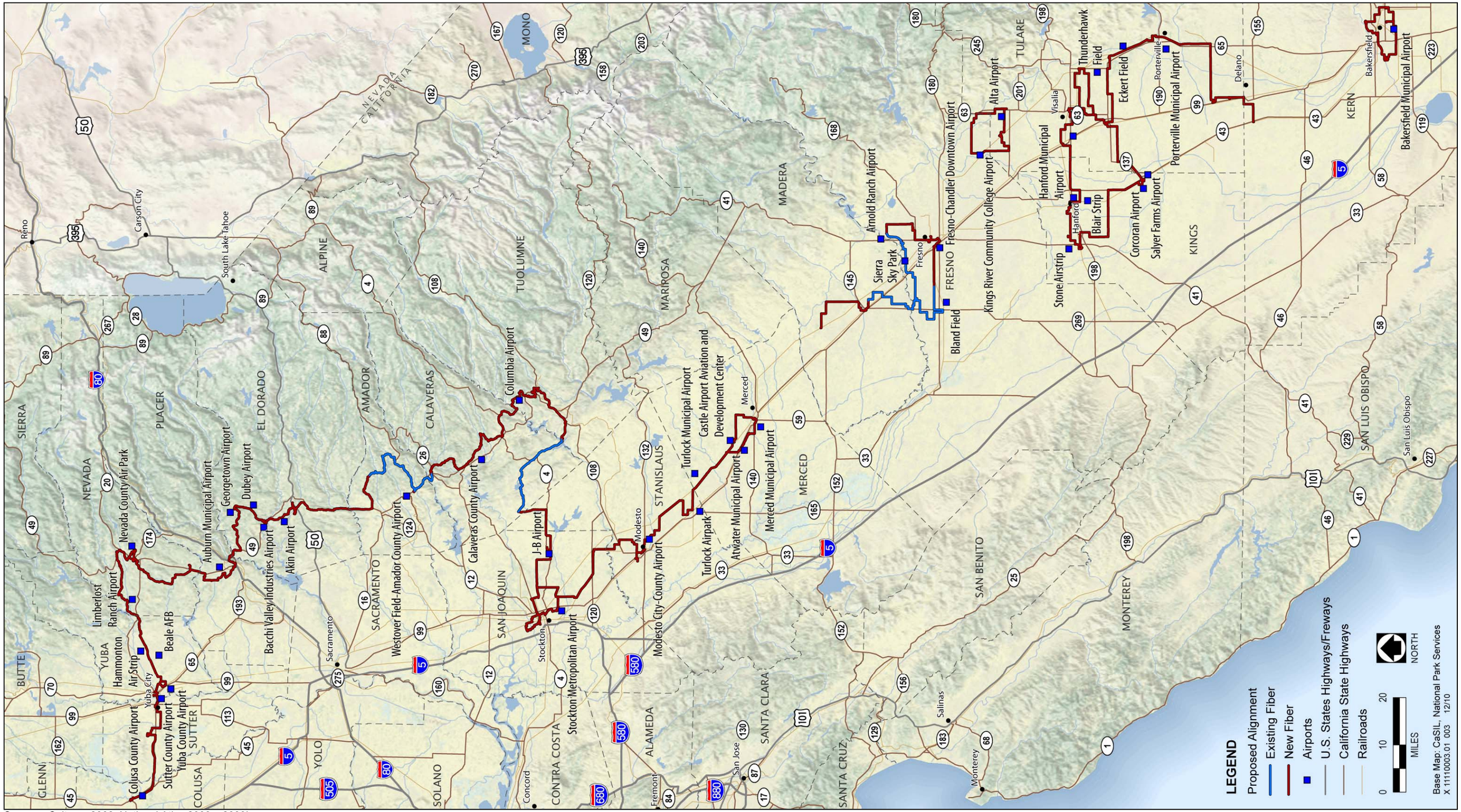
Impacts on transportation and traffic that would result from implementation of the proposed project were analyzed by identifying the transportation infrastructure for counties affected by the proposed route and evaluating whether the proposed project would result in changes to these circulation systems. As the proposed project would not involve the construction of additional traffic-generating uses, the potential impacts of the project are limited to temporary, short-term construction-related traffic and potential road closures/delays that could occur during construction. No traffic counts or modeling of existing or future traffic volumes is necessary to assess the potential impacts of the proposed project.

3.16.4 DISCUSSION

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less-Than-Significant Impact. Impacts of the proposed project on traffic levels during project construction are discussed below. Under the proposed project, the operation of fiber optic cable and cabinets infrastructure would not require new employment for maintenance; therefore, no new permanent trips would result and no impacts would occur with project operation.

Traffic patterns along state-maintained, county-owned, and local roads are related to urbanized commercial, retail, office, residential, and institutional uses, and to more remote residential, agricultural, and open space uses. During construction periods, multiple crews could be working simultaneously within the approximately 723 miles of proposed new conduit alignment. Construction vehicles and equipment that would be used during construction would vary depending on the construction techniques used at any specific location (such as plowing, trenching, and boring) and field conditions. Pickup/utility trucks, cable plows, trenchers, excavators with rock saw or rock breaker, dump trucks, backhoes, and boring rigs would all be used during construction; in addition, bucket trucks would be used for aerial installation. Truck traffic associated with the delivery of materials and equipment for plowing, trenching, directional drilling, and cabinet installation would also occur. Each crew could generate



Sources: Caltrans 2008; National Atlas 2009a, 2009b

Major Transportation Networks

Exhibit 3.16-1

approximately nine vehicle trips per day per segment. This level of traffic would remain fairly consistent throughout the construction period, typically occurring during the early morning and early evening hours. The equipment and materials would be transported to construction staging and equipment lay-down areas at as-yet-undetermined locations along the proposed route. The exact locations of construction staging and equipment lay-down areas would be selected by individual construction companies that would be awarded construction contracts for specific construction segments. In general, staging areas would be within the rights-of-way of roads in the construction areas, and at anchor and client institutions whenever possible. It is expected that construction staging and lay-down activities would last up to 6 hours at each location. As construction staging areas would be located away from existing roadways and each segment would generate fewer than 10 vehicle trips per day, construction of the proposed project is not anticipated to substantially increase roadway volumes/congestion or worsen intersection level of service (LOS) as a result of additional vehicle trips.

Construction along the proposed route may necessitate lane closures, which could affect local vehicle, bicycle, and pedestrian circulation. During construction, access to all roadway rights-of-way and driveways would be generally maintained, with any disruption lasting no more than 6 hours. Thus, construction could temporarily result in increased traffic delays, impede emergency response times within the area, and affect local bicycle and pedestrian facilities. The proposed project would also result in intermittent and temporary damage to roadway surfaces along the proposed route. However, all affected roads would be regraded and restored to resemble the existing road rights-of-way.

Incorporation of Environmental Protection Measures 3.16-1, "Prepare and Implement Traffic Control Plans," 3.16-2, "Notify Property Owners Concerning Blocked Driveways, Limit Hours of Disruption of Driveways, or Compensate Property Owners," and 3.16-3, "Reduce Potential Roadway Damage Resulting from Construction", as part of the project and as conditions of project approval, would maintain the flow of traffic to the extent feasible and reduce potential temporary traffic delays that could otherwise occur during construction within a particular roadway right-of-way. Specific components that would be implemented in the performance of these measures include detour routing, flagging, alternate routing of delivery/haul trucks to minimize impacts to commuter vehicles. As such, impacts would be less than significant. No mitigation is required.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less-Than-Significant. See response to question (a), above.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The proposed route is located near several public and private airports, as shown in Exhibit 3.16-1; however, based on the type of use proposed, the proposed project would not increase the need or demand for air traffic or result in a change in air traffic patterns. The proposed conduit would be largely located underground with minor supporting equipment located in cabinets above ground surface and would require minimal vehicle trips, none of which would be associated with air traffic, during operation of the proposed facilities. Furthermore, the proposed fiber conduit and cabinets would not be constructed within these airport properties, and the new infrastructure located outside of existing airport properties would not be tall enough to affect air traffic take-off and approach patterns, which could also create potential safety risks. See response to question 3.8.2 (e) above for further clarification. Thus, no impact would occur. No mitigation is required.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. No new roadways or realignment of existing roads would be required for project operation and maintenance. Access to the proposed route would be provided via existing state, county, and locally maintained roads and existing access to client institutions. Typically, conduits would be installed up to 12 feet beneath street intersections to avoid concentrations of other existing utilities. Under some circumstances or to accommodate a local jurisdiction's preference, the conduit may be installed by cutting pavement, excavating a narrow trench, and backfilling and repaving the cut pavement. All affected roadways would be regraded and restored to resemble pre-project conditions. The proposed project would not alter existing roadways or modify existing design features, and as such no impact would occur. No mitigation is required.

e) Result in inadequate emergency access?

Less-Than-Significant Impact. Roads adjacent to the proposed route currently provide adequate emergency access to commercial, retail, office, residential, and institutional areas, and to more remote agricultural areas, open space, rivers and lakes, forestland, and woodland areas. After completion of the proposed route, operation and maintenance of the new and replacement fiber conduit would not adversely affect circulation within and near the rights-of-way and would not involve construction or realignment of additional public access routes. However, as described in the response to question (a) above, construction of the proposed route may increase traffic delays, which could temporarily adversely affect emergency vehicle response times along the proposed route during construction. Incorporation of Environmental Protection Measure 3.16-1, "Prepare and Implement Traffic Control Plans," and Environmental Protection Measure 3.16-2, "Notify Property Owners Concerning Blocked Driveways, Limit Hours of Disruption of Driveways, or Compensate Property Owners," as part of the project and as conditions of project approval, would reduce the potential for effects on emergency vehicle response times by requiring the preparation of traffic control plans and other measures to allow traffic flow to continue during construction. As a result, this impact would be less than significant. No mitigation is required.

f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Less-Than-Significant Impact. The proposed project would not involve a permanent modification or reduction in the level of alternative transportation facilities or modes as a result of implementation, and it would not result in an increase in local population that could utilize alternative transportation opportunities in the project area. Existing facilities, which could be temporarily impacted as a result of a lane closure during construction activities, would be accommodated during construction as part of the performance of Environmental Protection Measure 3.16-1, "Prepare and Implement Traffic Control Plans." this Environmental Protection Measure is part of the project and is a condition of project approval; therefore, no loss of alternative transportation opportunities would occur, and the proposed project would not conflict with any adopted alternative transportation plans covering the proposed route. As such, a less-than-significant impact would occur. No mitigation is required.

3.17 UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. Utilities and Service Systems. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

The proposed route would be located within the service areas of multiple utility providers. Utilities in the vicinity of the proposed route include water, wastewater, storm drainage, electrical and natural gas service, and communications. The study area for this analysis includes a discussion of utilities in the vicinity of the proposed route that could potentially be directly or indirectly affected by construction or operation of the proposed project.

ENVIRONMENTAL SETTING

WATER

In the northern Sacramento Valley (Colusa, Yuba, and Sutter Counties), municipal water services are typically provided by community water systems from groundwater, while water for agricultural uses is supplied by irrigation districts from both surface water and groundwater sources.

In the affected counties of the Sierra Nevada foothills (Nevada, Placer, El Dorado, Amador, Calaveras, Tuolumne) and the northern and southern San Joaquin Valley (San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern), municipal water services are typically provided by county water agencies and districts from a combination of surface water reservoirs and groundwater.

WASTEWATER

In unincorporated areas, wastewater treatment services are typically provided by county government or by special districts. Medium and large cities typically operate their own wastewater treatment systems. In rural areas, wastewater is handled on a resident-to-resident basis, often with individual septic systems and disposal services.

STORMWATER DRAINAGE

Stormwater drainage systems located along most public road rights-of-way are operated by counties and cities. Counties crossed by the proposed route include El Dorado, Amador, Calaveras, Tuolumne, San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern. Incorporated cities along the proposed route are described in Chapter 1, "Introduction." Drainage systems along state highways are maintained by Caltrans.

SOLID WASTE

Solid waste pick-up and disposal services are typically handled by counties and large cities through contracts with private companies. Transfer stations and landfills are operated by both county governments and private companies, depending upon the county. Table 3.17-1 provides the disposal facilities for the 17 counties crossed by the proposed route.

OTHER UTILITIES

Electrical and natural gas service in the study area is primarily provided by Pacific Gas and Electric Company. Communications service in the study area is provided by multiple providers, including, but not limited to AT&T, Sprint, and Comcast.

REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to utilities and service systems are relevant to construction and operation under the proposed project.

Table 3.17-1
Solid Waste Disposal Facilities by County

County	Disposal Facilities
Colusa	Maxwell Transfer Station, Stonyford Disposal Site
Yuba	Yuba-Sutter Disposal, Inc. Landfill; the Yuba-Sutter Disposal Area; Ponderosa Landfill (Yuba County Public Works Department)
Sutter	None; nearest are located in Colusa and Butte Counties
Nevada	McCourtney Road Transfer Station and Recycling Center; nearest landfills are the Anderson Landfill located in Shasta County and the Eastern Regional Landfill in Placer County
Placer	Eastern Regional Landfill in Placer County
El Dorado	Diamond Springs Transfer Station; nearest landfill is Lockwood Landfill in Nevada
Amador	Amador County Landfill (Ione)
Calaveras	Rock Creek Solid Waste Facility located in Milton, Avery Transfer Station, Copperopolis Transfer Station, San Andreas Transfer Station, Paloma Transfer Station, Red Hill Transfer Station and Yard in Vallecito, Wilseyville Transfer Station and Yard, Gambi Disposal, San Andreas

Table 3.17-1 Solid Waste Disposal Facilities by County	
County	Disposal Facilities
Tuolumne	None located in county; nearest are Rock Creek Solid Waste Facility located in Milton (Calaveras County) and Foothill Sanitary Landfill in Linden (San Joaquin County).
San Joaquin	Foothill Sanitary Landfill; Forward Landfill, Inc.; North County Landfill
Stanislaus	Fink Road Landfill
Merced	Highway 59 Disposal Site
Madera	Fairmead Solid Waste Disposal Site
Fresno	American Avenue Disposal Site
Kings	Kettleman Hills—B18 Nonhaz Codisposal
Tulare	Teapot Dome Disposal Site, Visalia Disposal Site, Woodville Disposal Site
Kern	Bakersfield Metropolitan (Bena) SLF, Boron Sanitary Landfill
Source: CalRecycle 2010	

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Integrated Waste Management Act

In 1989, the Legislature adopted the Integrated Waste Management Act of 1989 (otherwise known as AB 939 or the Tanner Act), which established an integrated waste management hierarchy that consists of the following in order of importance: source reduction, recycling, composting, and land disposal of solid waste. The law also required that each county prepare a new integrated waste management plan. The Act further required each city to prepare a source reduction and recycling element (SRRE) by July 1, 1991. Each source reduction element includes a plan for achieving a solid waste goal of 25 percent by January 1, 1995, and 50 percent by January 1, 2000. A number of changes to the municipal solid waste diversion requirements under AB 939 were adopted, including a revision to the statutory requirement for 50 percent diversion of solid waste. Under these provisions, local governments shall continue to divert 50 percent of all solid waste on and after January 1, 2000.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Based on the proposed alignment, numerous regional and local plans, policies, regulations, and laws would apply to the proposed project. Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies," which is included as part of the proposed project and is a condition of project approval, requires CVIN to comply with all local, state and federal laws, regulations, policies and ordinances.

3.17.1 ANALYSIS METHODOLOGY

Impacts on utilities and service systems that could result from implementation of the proposed project were analyzed by identifying existing utilities in the study area and evaluating them against those that would be required during construction and operation of the proposed project. Evaluation of potential impacts on utilities was based on a review of the general plans of the counties traversed by the proposed route.

DISCUSSION

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. The proposed project would involve construction and operation of a fiber optic communications network, which would not generate wastewater as a result of project operation. The proposed facilities would not require potable water supplies for washing, cleaning, or other purposes that could subsequently result in wastewater supplies. As no wastewater would be generated, the proposed project would not be anticipated to exceed wastewater treatment requirements of the CVRWQCB. Therefore, no impact would occur. No mitigation is required.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The proposed project would involve construction and operation of a fiber optic communications network, which would not generate wastewater as a result of project operation. The proposed facilities would not require potable water supplies for washing, cleaning, or other purposes that could subsequently result in wastewater supplies. As no wastewater would be generated by the proposed project, no new wastewater treatment facilities or expansion of such facilities would be required. Therefore, no impact would occur. No mitigation is required.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. Proposed project construction would occur in the rights-of-way of existing roads and state highways that are served by existing stormwater drainage facilities. During construction, once fiber optic conduits are installed below ground, the ground surface along the proposed alignment would be restored to its existing condition (paved or unpaved). Therefore, the amount of pervious and impervious surfaces along the proposed alignment would be unchanged upon completion of the proposed project. As such, the proposed project would not increase the level of storm water runoff in the project area, and no new or expanded facilities would be required. Thus, no impact would occur. No mitigation is required.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. Construction of the proposed project would involve minor use of water for dust control, which could easily be served from existing sources. Operation of the proposed fiber optic facilities would not require additional water supplies as no on-site population would be generated by the proposed project. Furthermore, the proposed fiber optic cable and cabinets would be located largely underground and do not require water for their operation. Therefore, no impact would occur. No mitigation is required.

e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?

No Impact. The proposed project would involve construction and operation of a fiber optic communications network. As noted in response (a) above, it would not require wastewater treatment services and would not enable additional population growth in the community that could generate additional demand for such services. Therefore, no impact would occur. No mitigation is required.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less-Than-Significant Impact. Operation and maintenance of the proposed project would not generate substantial amounts of solid waste. Solid waste could be generated during the construction phase of the proposed project during ground-clearing activities conducted to remove debris before the installation of the underground fiber optic conduits. However, the volume of this material is anticipated to be minor and would not exceed more than 3 tons per day in each of the counties traversed by the proposed route. Based on a review of the California Integrated Waste Management Board's databases of existing disposal sites located in the project area, local landfills in the project vicinity would have adequate capacity to handle this level of solid waste disposal. Therefore, construction and operation of the proposed project would not cause existing regional landfill capacity to be exceeded. Therefore, this impact would be less than significant. No mitigation is required.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. The proposed project would not conflict with existing federal, state, and local statutes and regulations related to solid waste. As required by Environmental Protection Measure 2, "Comply With All Applicable Laws, Ordinances, Regulations, and Policies," which is part of the project and a condition of project approval, construction of the proposed project would comply with existing regulations related to waste stream reduction, including construction waste reduction requirements implemented by local agencies to achieve statewide goals under AB 939. Therefore, no impact would occur. No mitigation is required.

3.18 MANDATORY FINDINGS OF SIGNIFICANCE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. Mandatory Findings of Significance.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Authority: California Public Resources Code Sections 21083 and 21087

Reference: California Public Resources Code Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.3, 21093, 21094, and 21151; *Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296 (1988); *Leonoff v. Monterey Board of Supervisors*, 222 Cal.App.3d 1337 (1990)

3.18.1 DISCUSSION

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

Less-Than-Significant Impact. As noted above, impacts related to implementation of the proposed project are expected to be relatively minor, temporary, and would occur only during construction. Construction activities would occur within existing roadway and state highway rights-of-way, which are highly disturbed and subject to grading and other routine maintenance. As such, the proposed project would not be expected to substantially reduce habitat (acreage or viability) or affect local biological resources. Furthermore, as noted above under item 3.5 a), the environmental protection measures of the proposed project would require surveying and monitoring of construction activities, where appropriate, to ensure that the proposed project would not adversely affect potential biological or cultural resources located along the proposed alignment. As such, impacts would be considered less than significant. No mitigation is required.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less-Than-Significant Impact. As noted throughout this IS/ND, the potential impacts of the proposed project are largely restricted to temporary and short-term construction-related impacts and are site-specific. As noted above, all of the potential direct and indirect impacts of the proposed project were determined to be fully avoided or reduced to a less-than-significant level with incorporation of environmental protection measures. Furthermore, the relative amount of time during which the proposed project would be located in proximity to another potential construction project would be considered minimal (i.e. no more than two days). As a result, the potential impacts of the proposed project are not considered cumulatively considerable, and impacts would be less than significant. No mitigation is required.

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Less-Than-Significant Impact. The potential impacts of the proposed project are primarily temporary and short-term impacts related to grading, and construction activities. These impacts are all localized to the proposed route and its vicinity, and may include limited adverse effects upon air quality and ambient noise levels. However, the proposed project would not include any activities or uses that may cause substantial adverse effects on human beings either directly or indirectly or on the physical environment. The proposed project has been designed to meet the general development standards of the jurisdictions through which it proceeds and will incorporate conditions of project approval to meet local codes and regulations. Compliance with applicable local standards and incorporation as part of the project environmental protection measures, as part of the project and as conditions of project approval would ensure that impacts would either be avoided or reduced to less-than-significant levels. No mitigation is required.

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4 REFERENCES

CHAPTER 1, "INTRODUCTION"

No references cited.

CHAPTER 2, "PROJECT DESCRIPTION"

California Department of Transportation. 1996. *Manual of Traffic Controls for Construction and Maintenance Work Zones*. Chapter 5. Revision 2.

California Stormwater Quality Association. 2009. *California Stormwater Quality Association Stormwater Best Management Practice Handbook: New Development and Redevelopment.* Originally published in January 2003; updated in 2009.

CASQA. *See* California Stormwater Quality Association.

SECTION 3.1, "AESTHETICS"

BLM. *See* U.S. Bureau of Land Management.

California Department of Transportation. 2010. *Scenic Highway Guidelines*. Available: http://www.dot.ca.gov/hq/LandArch/scenic/guidelines/scenic_hwy_guidelines.pdf. Accessed November 29, 2010.

Caltrans. *See* California Department of Transportation.

U.S. Bureau of Land Management. 2010a. Visual Resource Management. Available: http://www.blm.gov/nstc/VRM/. Accessed December 3, 2010.

———. 2010b. Manual 8431—Visual Resource Contrast Rating. Appendix 2—RM Class Objectives. Available: http://www.blm.gov/nstc/VRM/8431App2.html. Accessed December 29, 2010.

SECTION 3.2, "AGRICULTURE AND FORESTRY RESOURCES"

California State Association of Counties. 2010. State Controller's Office Division of Accounting and Reporting, Open Space 2009–2010 Fiscal Year. Available: http://www.csac.counties.org/images/users/1/openspace_0910.pdf. Accessed December 7, 2010.

SECTION 3.3, "AIR QUALITY"

ARB. *See* California Air Resources Board.

California Air Resources Board. 2009 (December). *Air Designations for National Ambient Air Quality Standards—8-Hour Ozone.* Air Quality Data Branch. Sacramento, CA.

California Division of Mines and Geology. 2000 (August). *A General Location Guide for Ultramafic Rocks in California—Area More Likely to Contain Naturally Occurring Asbestos*. Compiled by R. K. Churchill and R. L. Hill. Sacramento, CA.

CDMG. *See* California Division of Mines and Geology.

Chang, Yushou. PCAPCD Air Pollution Control Officer. Placer County Air Pollution Control District. October 5, 2010—telephone conversation with Michael Wolf of AECOM regarding Placer County thresholds of significance.

EPA. *See* U.S. Environmental Protection Agency.

Godish, T. 2004. *Air Quality*. Fourth edition. Washington, DC: Lewis Publishers.

Higgins, C. T., and J. P. Clinkenbeard. 2006. *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California.* Sacramento, CA.

Sacramento Metropolitan Air Quality Management District. 2009 (December). *CEQA Guide to Air Quality Assessment in Sacramento County*. Sacramento, CA.

SMAQMD. *See* Sacramento Metropolitan Air Quality Management District.

U.S. Environmental Protection Agency. 2010. Particulate Matter, Basic Information. Available: http://www.epa.gov/pm/basic.html. Last updated October 28, 2010. Accessed January 13, 2011.

SECTION 3.4, "BIOLOGICAL RESOURCES"

California Natural Diversity Database. 2010. Results of electronic record search. Sacramento: California Department of Fish and Game, Wildlife and Habitat Data Analysis Branch. Accessed December 2, 2010.

CNDDB. *See* California Natural Diversity Database.

NAIP. *See* National Agriculture Imagery Program.

National Agriculture Imagery Program. 2009. Aerial Imagery for California. Available: http://www.atlas.ca.gov/download.html#/casil/imageryBaseMapsLandCover/imagery/naip/naip_2009/2009_NAIP_sid_county_compressions. Accessed December 7, 2009.

University of California, Santa Barbara. 2004. California Gap Analysis: Acknowledgments. Biogeography Lab. Available: http://www.biogeog.ucsb.edu/projects/gap/gap_rep_acknow.html. Last updated June 9, 2004. Accessed December 2, 2010.

———. 2005. California GAP: GIS data. Land Cover for California. Available: http://www.biogeog.ucsb.edu/projects/gap/gap_data2.html. Last updated May 25, 2005. Accessed December 2, 2010.

U.S. Fish and Wildlife Service. 2010. Federal Endangered and Threatened Species That Occur in or May Be Affected by Projects in the Counties and/or U.S.G.S. 7.5 Minute Quads. Available: http://www.fws.gov/sacramento/es/spp_list.htm. Last updated February 2, 2010. Accessed November 11, 2010.

USFWS. *See* U.S. Fish and Wildlife Service.

SECTION 3.5, "CULTURAL RESOURCES"

Berlo, R. C. 1998. *The U.S. Numbered Highways of the West: A Cartographic Study*. Livermore, CA.

Burcham, L. T. 1981. *California Range Land: An Historic-ecological Study of the Range Resources of California*. Publication 7. Davis, CA: Center for Archaeological Research at Davis.

Fredrickson. D. A. 1974a. *Cultural Diversity in Early Central California: A View from the North Coast Ranges.* Banning, CA: Malki Museum, Inc. Morongo Indian Reservation.

———. 1974b. *Early Cultures of the North Coast Ranges, California.* Davis, CA: University of California, Davis.

Hoover, M. B., H. E. Rensch, E. G. Rensch, and W. N. Abeloe. 2002. *Historic Spots in California*. Fifth edition. Revised by D. E. Kyle. Stanford, CA: Stanford University Press.

Jefferson, G. T. 1991a. *A Catalogue of Late Quaternary Vertebrates from California: Part One, Nonmarine Lower Vertebrate and Avian Taxa*. Natural History Museum of Los Angeles County, Technical Report No. 5.

———. 1991b. *A Catalogue of Late Quaternary Vertebrates from California: Part Two: Mammals*. Natural History Museum of Los Angeles County, Technical Report No. 7.

Jelinek, L. J. 1982. *Harvest Empire: A History of California Agriculture.* Second edition. Series eds. N. Hundley Jr. and J. A. Schutz. San Francisco: Boyd & Fraser Publishing Co.

Levy, R. 1978. Eastern Miwok. In *California,* ed. R. F. Heizer, 398–413. *Handbook of North American Indians,* Vol. 8. Gen. ed. W. C. Sturtevant. Washington, DC: Smithsonian Institution.

McGie, J. F. 1982. *History of Butte County, Volume II: 1920–1980.* Oroville, CA: Butte County Board of Education.

NRCS. *See* U.S. Natural Resources Conservation Service.

Rosenthal, J. S., G. G. White, and M. Q. Sutton. 2007. The Central Valley: A View from the Catbird's Seat. Chapter 10 in *California Prehistory: Colonization, Culture and Complexity*, ed. T. L. Jones and K. A. Klar. Lanham, MD: AltaMira Press.

Society of Vertebrate Paleontology. 1995. Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources-Standard Guidelines. *Society of Vertebrate Paleontology News Bulletin* 163:22–27.

———. 1996. Conditions of Receivership for Paleontologic Salvage Collections (final draft). *Society of Vertebrate Paleontology News Bulletin* 166:31–32.

University of California Museum of Paleontology. 2011. Museum of Paleontology Database. Accessed January 2011.

U.S. Natural Resources Conservation Service. 2010. U.S. General Soil Map (STATSGO2). GIS data of general soil association units for California. Soil Survey Staff. U.S. Department of Agriculture. Available: http://SoilDataMart.nrcs.usda.gov/. Accessed January 14, 2010.

Wallace, W. J. 1978. *Handbook of North American Indians*. Vol. 8. Gen. ed. W. C. Sturtevant, vol. ed. R. F. Heizer. Washington, DC: Smithsonian Institution.

SECTION 3.6, "GEOLOGY AND SOILS"

California Geological Survey. 1999a. Alquist-Priolo Earthquake Fault Zones. Available: http://www.consrv.ca.gov/cgs/rghm/ap/Pages/Index.aspx. Accessed December 8, 2010.

———. 1999b. California Geological Survey—Probabilistic Seismic Hazards Assessment—Soils. Available: http://www.consrv.ca.gov/CGS/rghm/psha/Pages/soils.aspx. Accessed December 9, 2010.

Helley, E. J., and D. S. Harwood. 1985. Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierran Foothills, California. Map MF-1790. Washington, DC: U.S. Geological Survey.

Jennings, C. W., and R. G. Strand. 1992. Geologic Map of California, Santa Cruz Sheet. Olaf P. Jenkins Edition. Originally published 1956; fifth printing 1992. Sacramento: California Division of Mines and Geology.

Kern County. 2007. *Kern County General Plan*. Safety Element. Bakersfield, CA.

Matthews, R. A., and J. L. Burnett. 1991. Geologic Map of California, Fresno Sheet. Olaf P. Jenkins Edition. Originally published 1965; fourth printing 1991. Sacramento: California Division of Mines and Geology.

NRCS. *See* U.S. Natural Resources Conservation Service.

Saucedo, G. J., and D. L. Wagner. 1992. Geologic Map of the Chico Quadrangle. Regional Geologic Map Series, Map No. 7A. Sacramento: California Division of Mines and Geology.

Smith, A. R. 1992. Geologic Map of California, Bakersfield Sheet. Olaf P. Jenkins Edition. Originally published 1965; fourth printing 1992. Sacramento: California Division of Mines and Geology.

Strand, R. G. 1967. Geologic Map of California, Mariposa Sheet. Olaf P. Jenkins Edition. Originally published 1967; fourth printing 1991. Sacramento: California Division of Mines and Geology.

U.S. Geological Survey. 2005. *Land Subsidence in the United States*. U.S. Geological Survey Circular 1182. Available: http://pubs.usgs.gov/circ/circ1182. Accessed December 29, 2010.

———. 2007. California's Landslide Hazards—Incidence and Susceptibility. Available: http://education.usgs.gov/california/maps/landslides2.htm. Accessed December 9, 2010.

U.S. Natural Resources Conservation Service. 2010. U.S. General Soils Map (STATSGO2). GIS data of general soil association units for California. Soil Survey Staff. U.S. Department of Agriculture. Available: http://SoilDataMart.nrcs.usda.gov/. Accessed January 14, 2010.

Wagner, D. L., C. W. Jennings, T. L. Bedrossian, and E. J. Bortugno. 1987. Geologic Map of the Sacramento Quadrangle. Regional Geologic Map Series, Map No. 1A. Sacramento: California Division of Mines and Geology.

Wagner, D. L., E. J. Bortugno, and R. D. McJunkin. 1991. Geologic Map of the San Francisco–San Jose Quadrangle. Regional Geologic Map Series, Map No. 5. Sacramento: California Division of Mines and Geology.

SECTION 3.7, "GREENHOUSE GAS EMISSIONS"

ARB. *See* California Air Resources Board.

Bartsh, George. Amador County Air Pollution Control District, Jackson, CA. December 15, 2010—telephone conversation with Michael Wolf of AECOM regarding district recommendations that projects be consistent with guidance published by the California Air Resources Board and California Air Pollution Control Officers Association.

California Air Resources Board. 2008a. *California Greenhouse Gas Inventory for 2000–2008 by Category as Defined in the Scoping Plan.* Sacramento, CA.

———. 2008b (December). M*andatory Reporting of Greenhouse Gas Emissions: Instructional Guidance for Operators.* Planning and Technical Support Division, Emission Inventory Branch. Sacramento, CA.

Fish, J. Northern Sierra Air Quality Management District. Grass Valley, CA. December 16, 2010—telephone conversation with Michael Wolf of AECOM regarding district recommendations that projects be consistent with guidance published by the California Air Resources Board and California Air Pollution Control Officers Association.

Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II, and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.* Geneva, Switzerland.

IPCC. *See* Intergovernmental Panel on Climate Change.

Kitamura, D. Colusa County Air Pollution Control District. Colusa, CA. December 15, 2010—telephone conversation with Michael Wolf of AECOM regarding district recommendations that projects be consistent with guidance published by the California Air Resources Board and California Air Pollution Control Officers Association.

Moss, B. Calaveras County Air Pollution Control District. San Andreas, CA. December 15, 2010—telephone conversation with Michael Wolf of AECOM regarding district recommendations that projects be consistent with guidance published by the California Air Resources Board and California Air Pollution Control Officers Association.

Office of the Governor. 2008 (June 19). *Technical Advisory: CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act.* Sacramento, CA.

Office of the White House. 2009. Presidential Memorandum—EPA Waiver. Available: http://www.whitehouse.gov/the-press-office/Presidential-Memorandum-EPA Waiver. Accessed January 14, 2011.

Otami, Dennis. El Dorado County Air Pollution Control District. Placerville, CA. December 15, 2010—telephone conversation with Michael Wolf of AECOM regarding district recommendations that projects be consistent with guidance published by the California Air Resources Board and California Air Pollution Control Officers Association.

Roehl, Jim. Tuolumne County Air Pollution Control District. Sonora, CA. December 15, 2010—telephone conversation with Michael Wolf of AECOM regarding district recommendations that projects be consistent with guidance published by the California Air Resources Board and California Air Pollution Control Officers Association.

Sacramento Metropolitan Air Quality Management District. 2009. *CEQA Guide to Air Quality Assessment in Sacramento County.* Sacramento, CA.

San Joaquin Valley Air Pollution Control District. 2009a (December 17). *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA.* Fresno, CA.

———. 2009b (December 17). *District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency.* Fresno, CA.

SCAQMD. *See* South Coast Air Quality Management District.

San Joaquin Valley APCD. *See* San Joaquin Valley Air Pollution Control District.

SMAQMD. *See* Sacramento Metropolitan Air Quality Management District.

South Coast Air Quality Management District. 2008 (December 5). Board Meeting December 5, 2008. Agenda No. 31. Available: http://www.aqmd.gov/hb/2008/December/0812ag.html.

SECTION 3.8, "HAZARDS AND HAZARDOUS MATERIALS"

California Department of Toxic Substances Control. 2010. EnviroStor—Hazardous Waste and Substances Site List. Search conducted in Colusa, Sutter, Yuba, Nevada, Placer, El Dorado, Amador, Calaveras, Tuolumne, San Joaquin, Stanislaus, Merced, Fresno, Tulare, Kings, and Kern Counties. Available: http://www.envirostor.dtsc.ca.gov/public/search.asp?cmd=search&reporttype=CORTESE&site_type=CSITES,ERAP,OPEN,FUDS,CLOSE&status=ACT,BKLG,COM&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST). Accessed August 2010.

DTSC. *See* California Department of Toxic Substances Control.

SECTION 3.9, "HYDROLOGY AND WATER QUALITY"

California Department of Water Resources. 2009a. *California Water Plan Update 2009.* Volume 3, Regional Reports: Sacramento River Integrated Water Management. Bulletin 160-09. Division of Integrated Regional Water Management, Northern Region Office. Red Bluff, CA. Available: http://www.waterplan.water.ca.gov/cwpu2009/index.cfm#volume3. Accessed December 3, 2010.

———. 2009b. *California Water Plan Update 2009*. Volume 3, Regional Reports: San Joaquin River Integrated Water Management. Bulletin 160-09. Division of Integrated Regional Water Management, South Central Region Office. Fresno, CA. Available: http://www.waterplan.water.ca.gov/cwpu2009/index.cfm#volume3. Accessed December 6, 2010.

———. 2009c. *California Water Plan Update 2009.* Volume 3, Regional Reports: Tulare Lake Integrated Water Management. Bulletin 160-09. Division of Integrated Regional Water Management, South Central Region Office. Fresno, CA. Available: http://www.waterplan.water.ca.gov/cwpu2009/index.cfm#volume3. Accessed December 7, 2010.

California Stormwater Quality Association. 2009. *California Stormwater Quality Association Stormwater Best Management Practice handbook: New Development and Redevelopment*. Originally published in January 2003; updated in 2009.

CASQA. *See* California Stormwater Quality Association.

Central Valley Regional Water Quality Control Board. 2009 (September). *The Water Quality Control Plan (Basin Plan) for the California Water Quality Control Board Central Valley Region: The Sacramento River and the San Joaquin River Basin.* Fourth Edition. Revised September 2009 (with approved amendments). Sacramento, CA.

CVRWQCB. *See* Central Valley Regional Water Quality Control Board.

DWR. *See* California Department of Water Resources.

Fire and Resource Assessment Program. 2010. Bioregions; CAL FIRE Administration Units; CAL FIRE Facilities/Names, SRA; and Precipitation Zones, Mean Annual 1900–1960. Maps. Available: http://frap.cdf.ca.gov/data/frapgismaps/select.asp. Accessed December 14, 2010.

FRAP. *See* Fire and Resource Assessment Program.

State Water Resources Control Board. 2010. Board Approved 2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments. Available: http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006.shtml. SWRCB Approval Date October 25, 2006. Accessed December 10, 2010.

SWRCB. *See* State Water Resources Control Board.

SECTION 3.10, "LAND USE AND PLANNING"

No references cited.

SECTION 3.11, "MINERAL RESOURCES"

California Division of Mines and Geology. 1986a. *Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region.* Special Report 158. California Department of Conservation. Sacramento, CA.

———. 1986b. *Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Yuba City–Marysville Production-Consumption Region.* Special Report 132. California Department of Conservation. Sacramento, CA.

———. 1988a. *Mineral Land Classification: Portland Cement Concrete Grade Aggregate in the Sacramento-Fairfield Production Consumption Region*. Special Report 156. California Department of Conservation. Sacramento, CA.

———. 1988b. *Mineral Land Classification: Aggregate Materials in the Bakersfield Production-Consumption Region.* Special Report 147. California Department of Conservation. Sacramento, CA.

———. 1990. *Mineral Land Classification of Nevada County, California.* Special Report 164. California Department of Conservation. Sacramento, CA.

———. 1993. *Mineral Land Classification of the San Andreas 15-Minute Quadrangle, Calaveras County, California.* Special Report 132. California Department of Conservation. Sacramento, CA.

California Division of Oil, Gas and Geothermal Resources. 2008. DOGGR [California Department of Oil, Gas, and Geothermal Resources] Online Mapping System, DOMS 2.0, Available: http://maps.conservation.ca.gov/doms/doms-app.html. Accessed December 18, 2010.

CDMG. *See* California Division of Mines and Geology.

SECTION 3.12, "NOISE"

Amador County. 1988. *Amador County General Plan* Noise Element. Adopted 1974, amended 1988, approved by Board of Supervisors September 6, 1988. Jackson, CA.

Calaveras County. 1996 (December 9). *Calaveras County General Plan* Noise Element. San Andreas, CA.

California Department of Transportation. 2004. *Transportation- and Construction-Induced Vibration Guidance Manual.* Environmental Program, Environmental Engineering; Noise, Vibration, and Hazardous Waste Management Office. Sacramento, CA.

Caltrans. *See* California Department of Transportation.

Colusa County. 1989. *Colusa County General Plan* Safety Element. Colusa, CA.

El Dorado County. 2009 (March). *El Dorado County General Plan* Public Health, Safety, and Noise Element. Adopted July 2004, amended March 2009. Placerville, CA.

Federal Highway Administration. 2006. *Federal Highway Administration Road User's Guide.* Washington, DC.

Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment.* Office of Planning and Environment. Washington, DC.

FHWA. *See* Federal Highway Administration.

Fresno County. 2000 (October). *Fresno County General Plan*, Health and Safety Element. Fresno, CA.

FTA. *See* Federal Transit Administration.

Kern County. 2009 (September 22). *Kern County General Plan* Noise Element. Bakersfield, CA.

Kings County. 2010 (January 26). *2035 Kings County General Plan.* Chapter 8, Noise Element. Adopted by the Kings County Board of Supervisors January 26, 2010, Board of Supervisors Resolutions No. 10-001 and 10-002. Hanford, CA.

Madera County. 1995 (October 24). *Madera County General Plan*. Section 7, Noise. Madera, CA.

Merced County. 1990 (December 4). *Merced County Year 2000 General Plan.* Chapter IV, Noise. Adopted by the Board of Supervisors on December 4, 1990. Merced, CA.

Nevada County. 1996. *Nevada County General Plan*. Chapter 9, Noise. Nevada City, CA.

Placer County. 1994 (August 16). *Placer County General Plan Update, Countywide General Plan Policy Document.* Section 9, Noise. Auburn, CA.

San Joaquin County. 1999. *San Joaquin County Countywide General Plan.* Section V, Public Health and Safety. Stockton, CA.

Stanislaus County. 2006 (April 18). *Stanislaus County General Plan.* Chapter 4, Noise Element. Updated April 18, 2006, with Board of Supervisors Resolution No. 2006-300. Modesto, CA.

Sutter County. 2010 (September). *Sutter County General Plan*. Chapter 11, Noise. Yuba City, CA.

Tulare County. 2010 (February). *Tulare County Revised Draft General Plan, 2030 Update*. Chapter 10, Health and Safety. Visalia, CA.

Tuolumne County. 1996. *Tuolumne County General Plan.* Chapter 5, Noise Element. Sonora, CA.

Yuba County. 2010 (August). *Yuba County General Plan 2030.* Chapter 6, Public Health & Safety Element. Marysville, CA.

SECTION 3.13, "POPULATION AND HOUSING"

California Department of Finance. 2007 (July). Population Projections by Race/Ethnicity for California and Its Counties 2000–2050. Sacramento, CA. Available: http://www.dof.ca.gov/research/demographic/reports/projections/p-1/. Accessed December 8, 2010.

California Employment Development Department. 2010 (November). California Labor Market Info, The Economy, Local Area Profiles. Available: http://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/localAreaProQSSelection.asp?menuChoice=localAreaPro. Accessed January 3, 2011.

EDD. *See* California Employment Development Department.

U.S. Census Bureau. 2010. American FactFinder. 2006–2008. Fact Sheet. American Community Survey 3-Year Estimates. Available: http://factfinder.census.gov/home/saff/main.html?_lang=en. Accessed December 8, 2010.

SECTION 3.14, "PUBLIC SERVICES"

No references cited.

SECTION 3.15, "RECREATION"

BLM. *See* U.S. Bureau of Land Management.

California Department of Parks and Recreation. 2009. GIS data of management boundaries of California state parks. Acquisition and Development Division. Available: http://www.atlas.ca.gov/download.html#/casil/boundaries. Accessed December 3, 2010.

———. 2010a. Colusa–Sacramento River SRA. Available: http://www.parks.ca.gov/default.asp?page_id=461. Accessed December 2, 2010.

———. 2010b. Empire Mine SHP. Available: http://www.parks.ca.gov/?page_id=499. Accessed December 29, 2010.

———. 2010c. Marshall Gold Discovery SHP. Available: http://www.parks.ca.gov/default.asp?page_id=484. Accessed December 2, 2010.

———. 2010d. Columbia SHP. Available: http://www.parks.ca.gov/default.asp?page_id=552. Accessed December 2, 2010.

State Parks. *See* California Department of Parks and Recreation.

U.S. Bureau of Land Management. 2010. Recreation and Public Purposes Act. http://www.blm.gov/wo/st/en/prog/more/lands/recreation_and_public.html. Accessed December 6, 2010.

SECTION 3.16, "TRANSPORTATION/TRAFFIC"

California Department of Transportation. 2008. GIS data of airports in California. Available: http://www.dot.ca.gov/hq/tsip/gis/datalibrary/gisdatalibrary.html. Accessed April 26, 2010.

Caltrans. *See* California Department of Transportation.

National Atlas. 2009a. GIS data of major roads in the United States, Puerto Rico, and the U.S. Virgin Islands. Available: http://nationalatlas.gov/atlasftp.html. Accessed January 5, 2009.

———. 2009b (September). GIS data of railroads in the conterminous United States and Alaska. Available: http://nationalatlas.gov/atlasftp.html. Accessed January 5, 2009.

SECTION 3.17, "UTILITIES AND SERVICE SYSTEMS"

CalRecycle. 2010. Solid Waste Information System. Available: http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx. Accessed December 6, 2010.

SECTION 3.18, "MANDATORY FINDINGS OF SIGNIFICANCE"

No references cited.

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Jake Weirich ..... Noise
Rachel Galaraga ..... Aesthetics, Population and Housing, Recreation, Transportation/Traffic
Anna Starkey ..... Cultural Resources
Traci O'Brien ..... Cultural Resources
Wendy Copeland ..... Geology and Soils (Senior Review)
Phi Ngo ..... GIS
Lorrie Jo Williams ..... Graphics
Julie Nichols ..... Technical Editor
Lauren Inglish ..... Technical Editor
Christy Seifert ..... Technical Editor
Charisse Case ..... Production Specialist
Deborah Jew ..... Production Specialist

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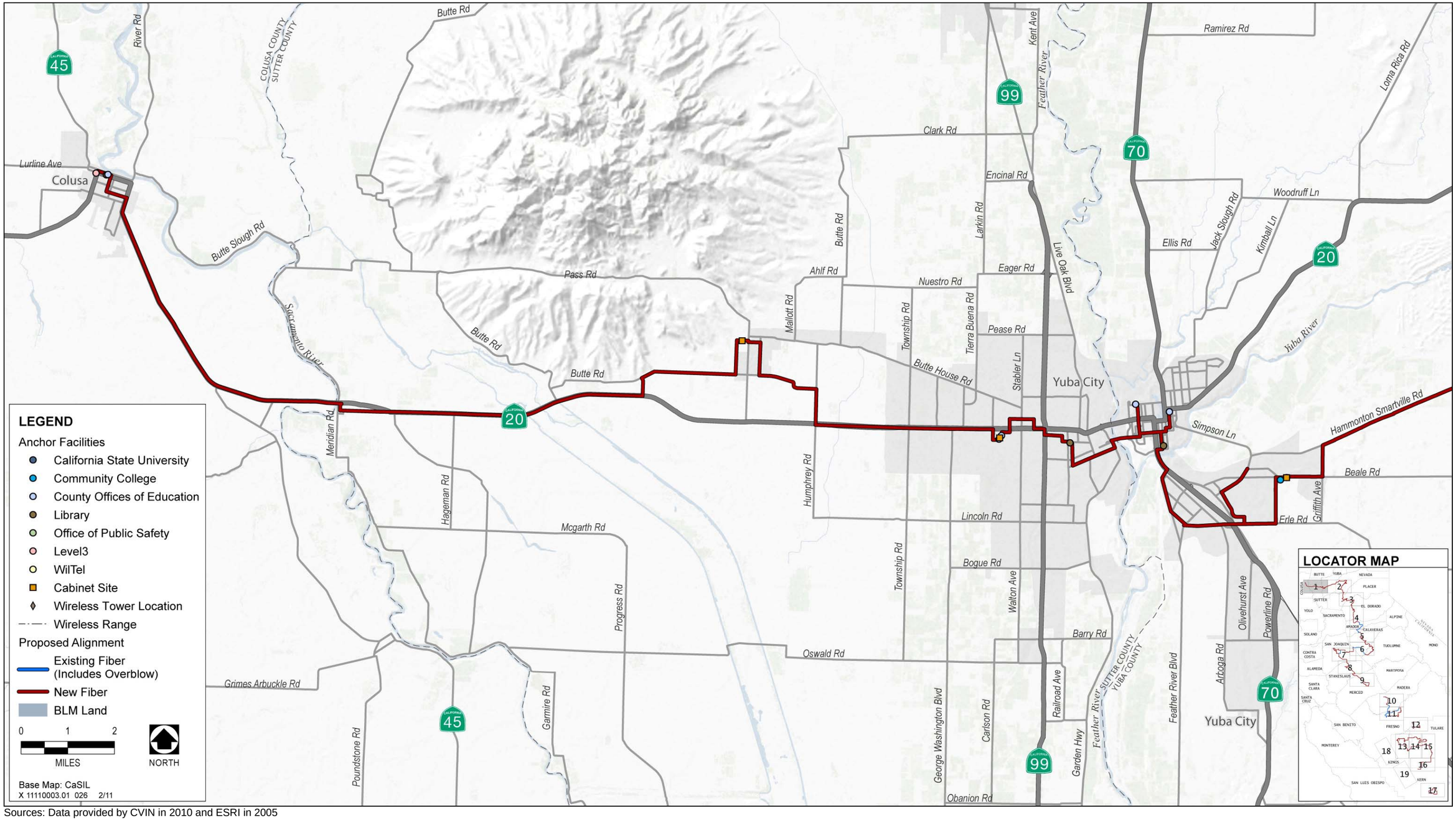
APPENDIX A

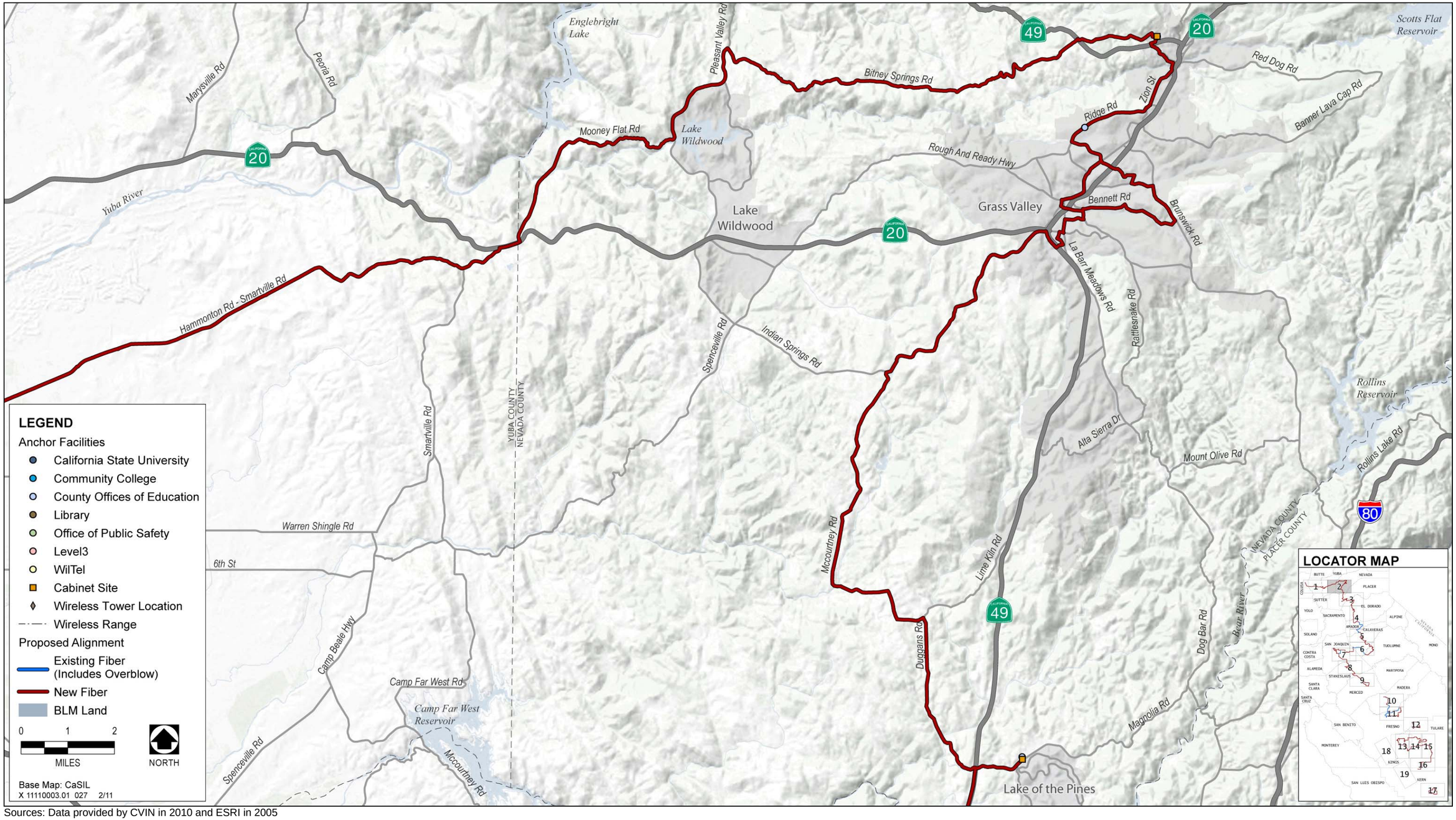
Maps of the Proposed Route and Photographs of Typical Cabinet Facilities



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 1 of 19

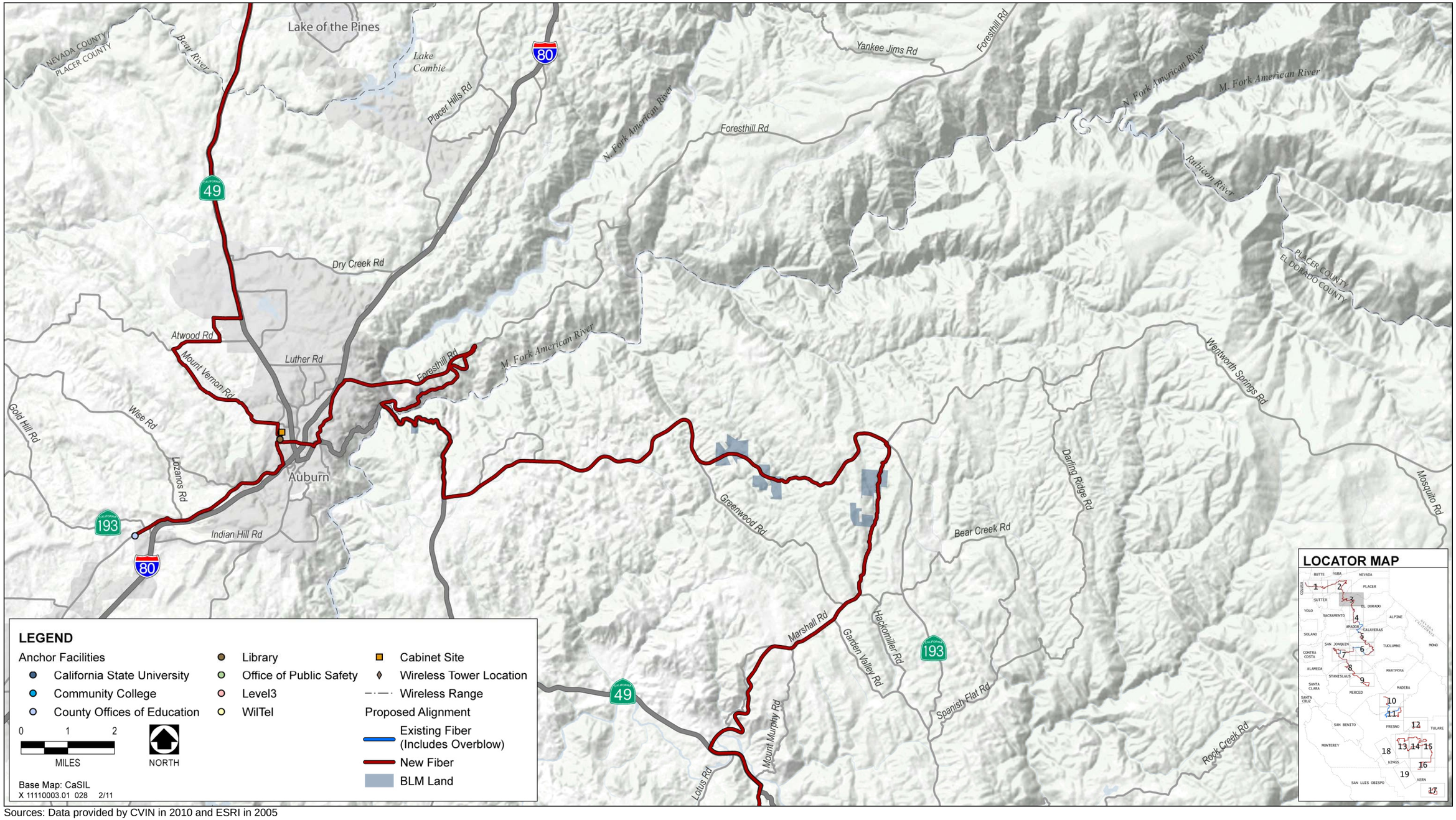
Exhibit A-1



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 2 of 19

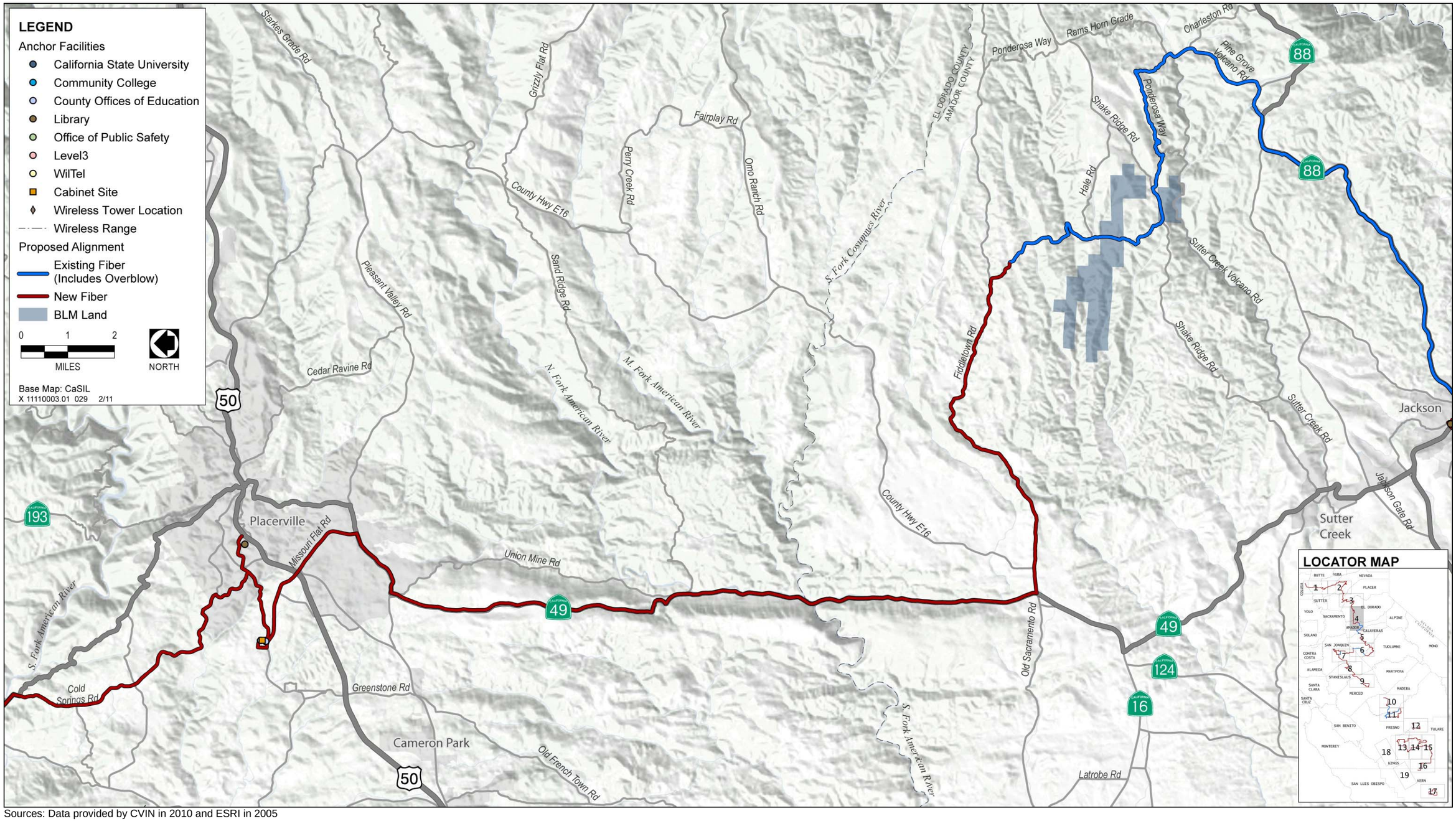
Exhibit A-2



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 3 of 19

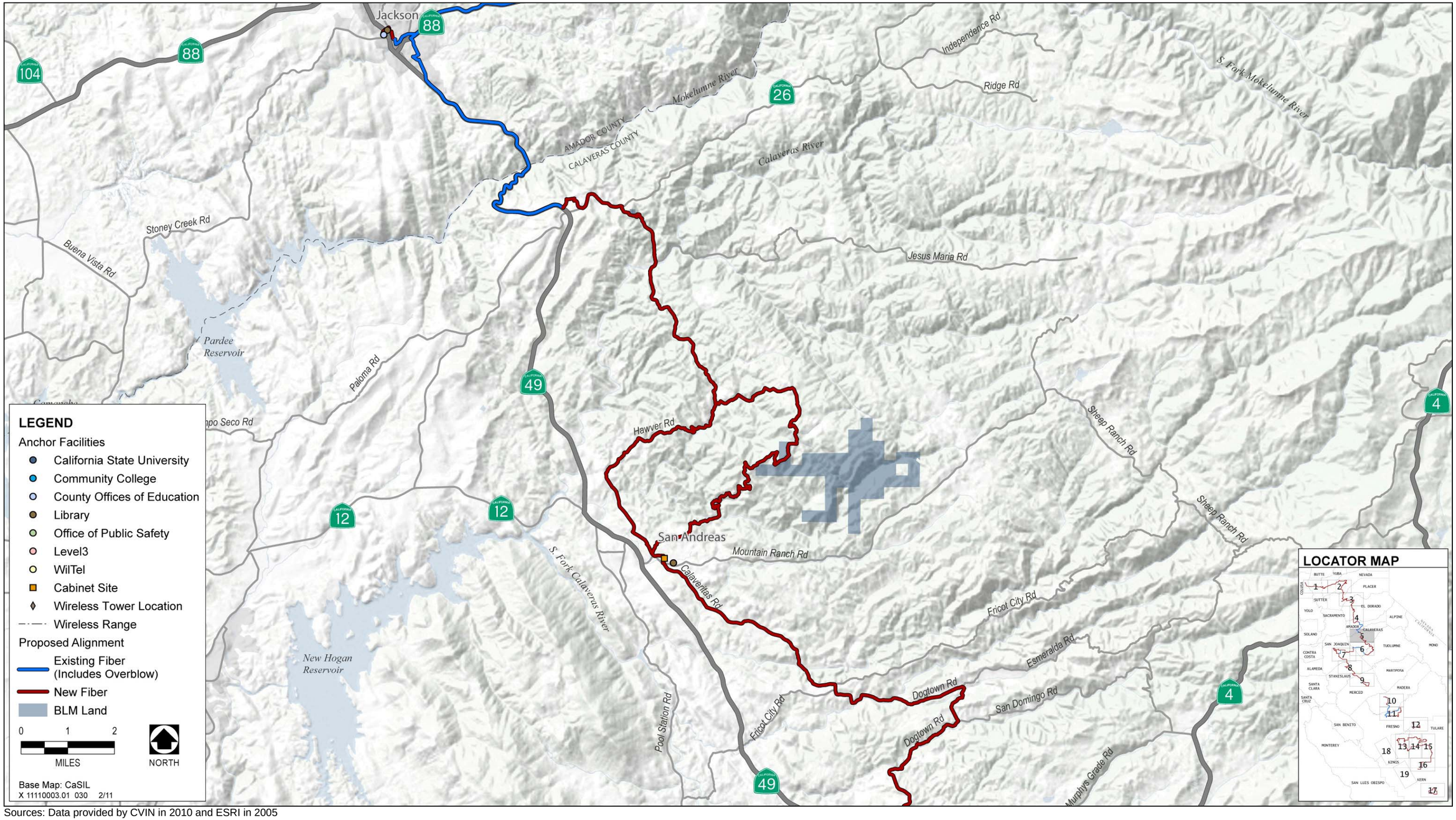
Exhibit A-3



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 4 of 19

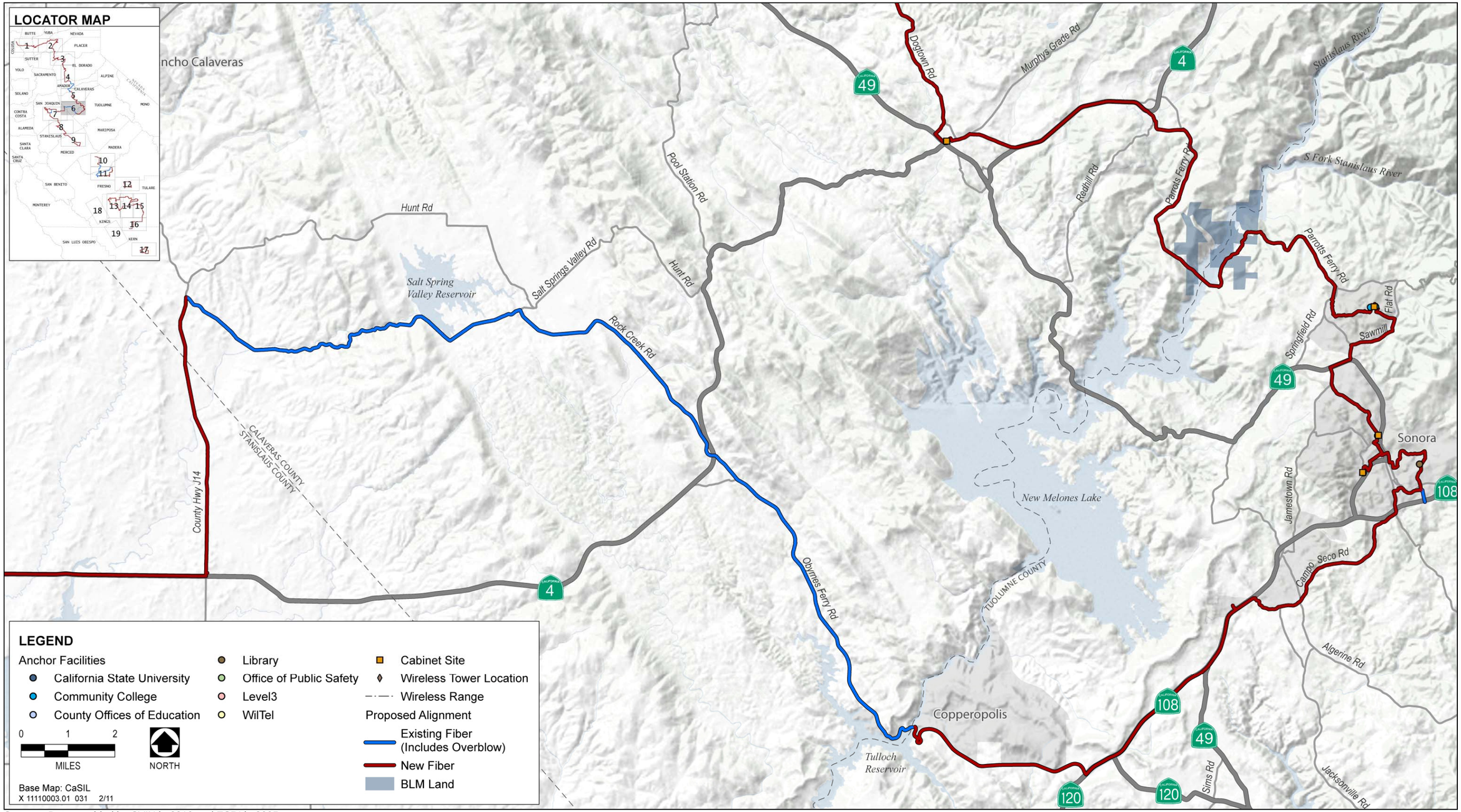
Exhibit A-4



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 5 of 19

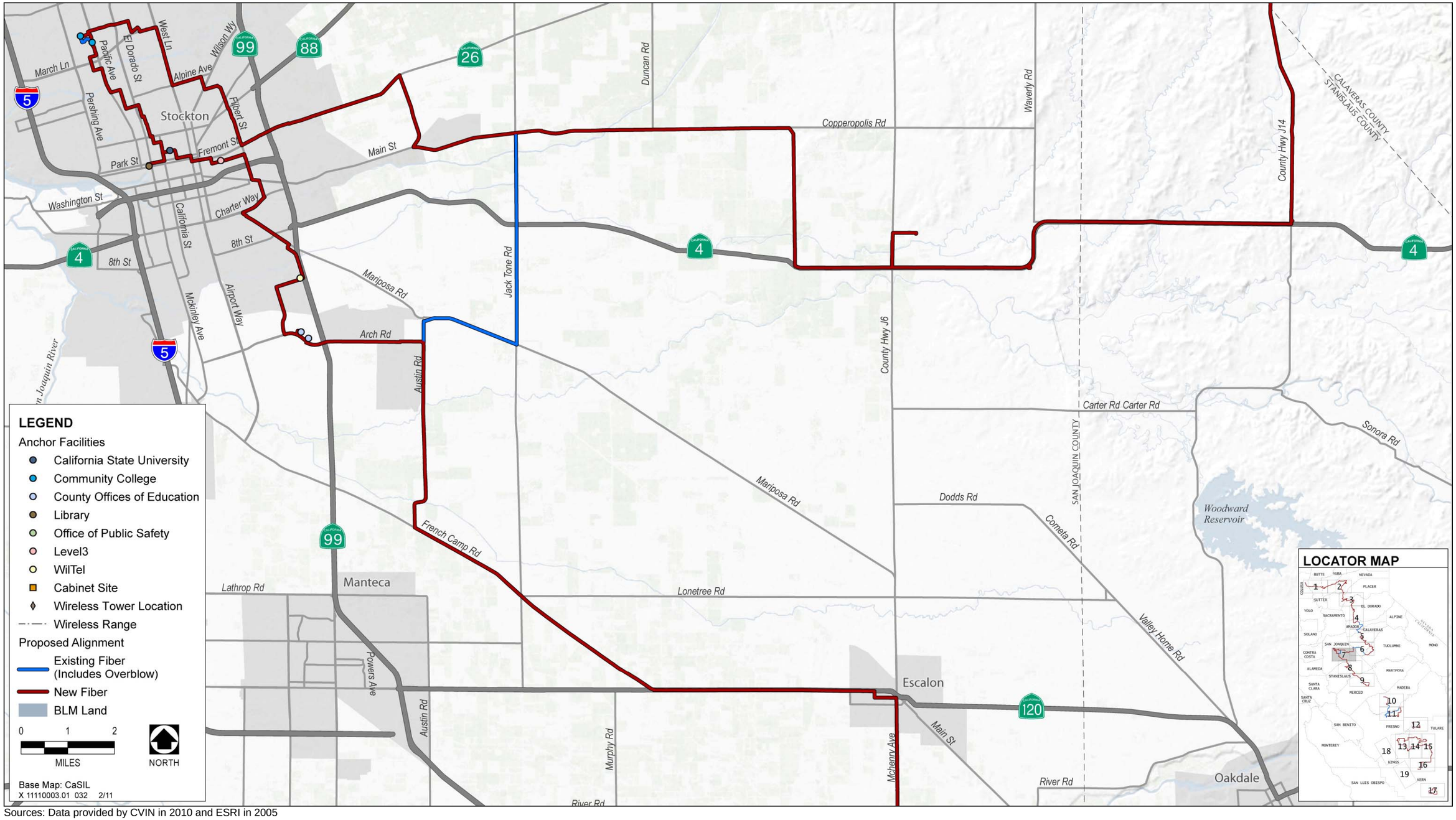
Exhibit A-5



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 6 of 19

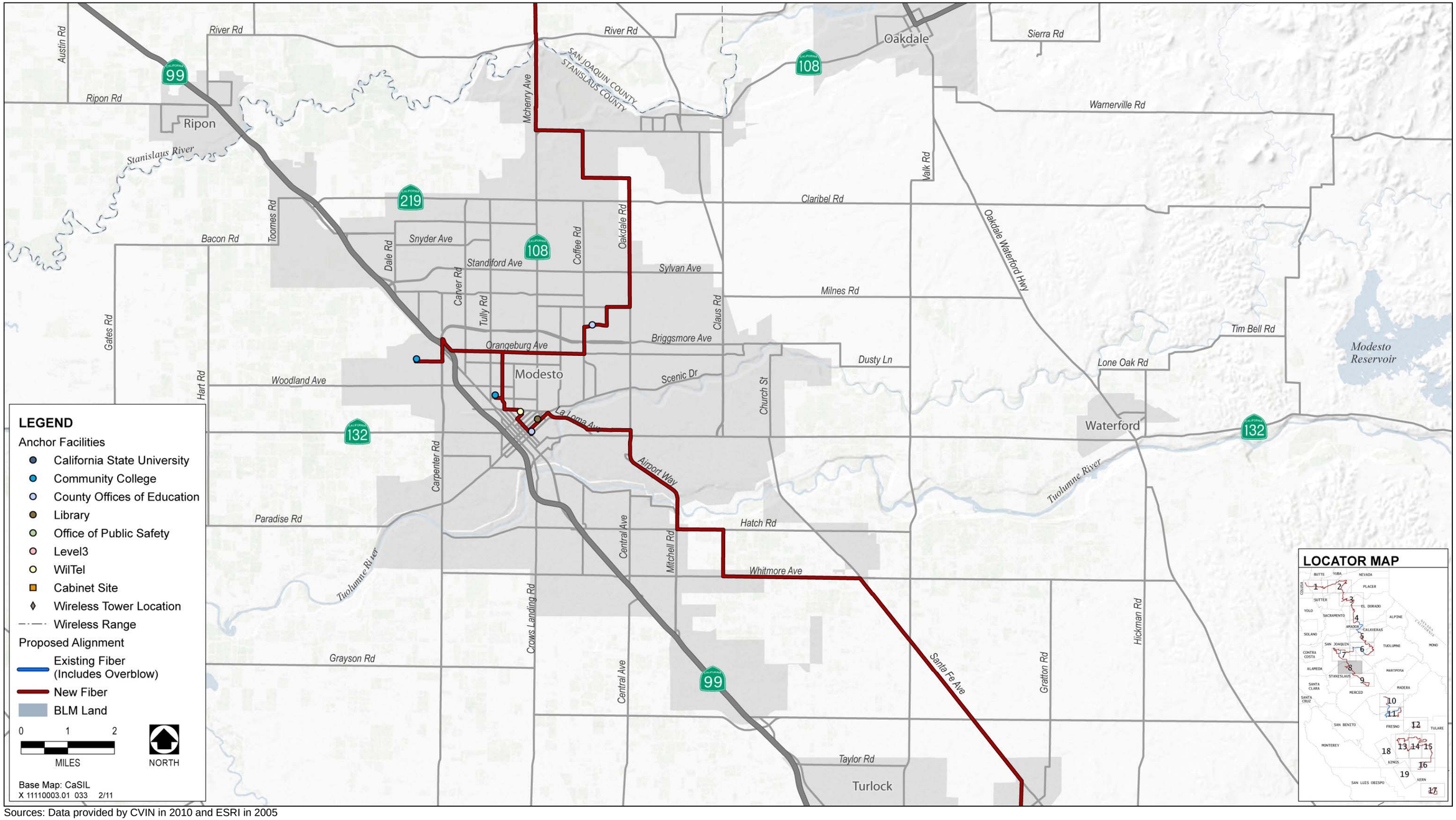
Exhibit A-6



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 7 of 19

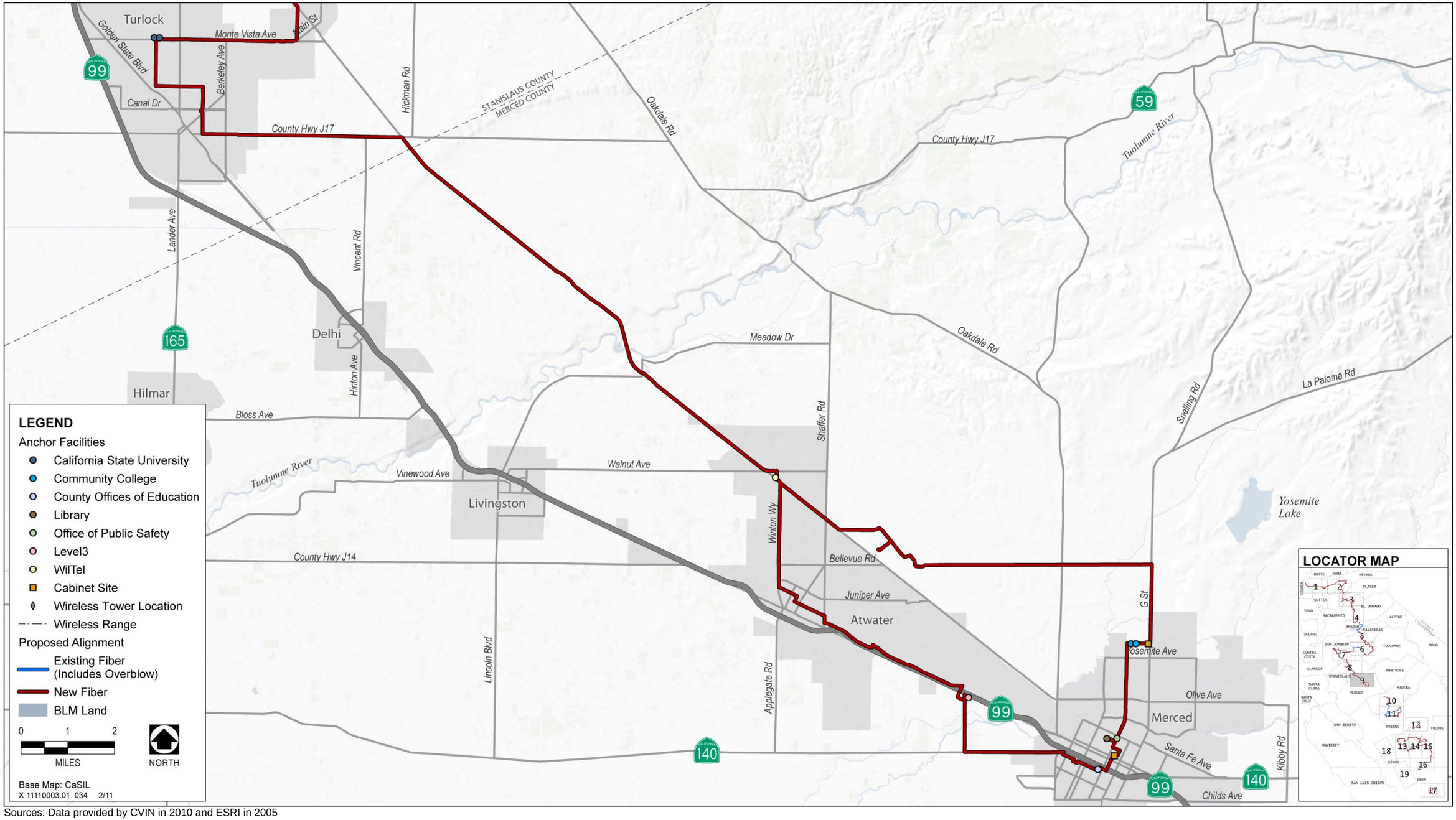
Exhibit A-7



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 8 of 19

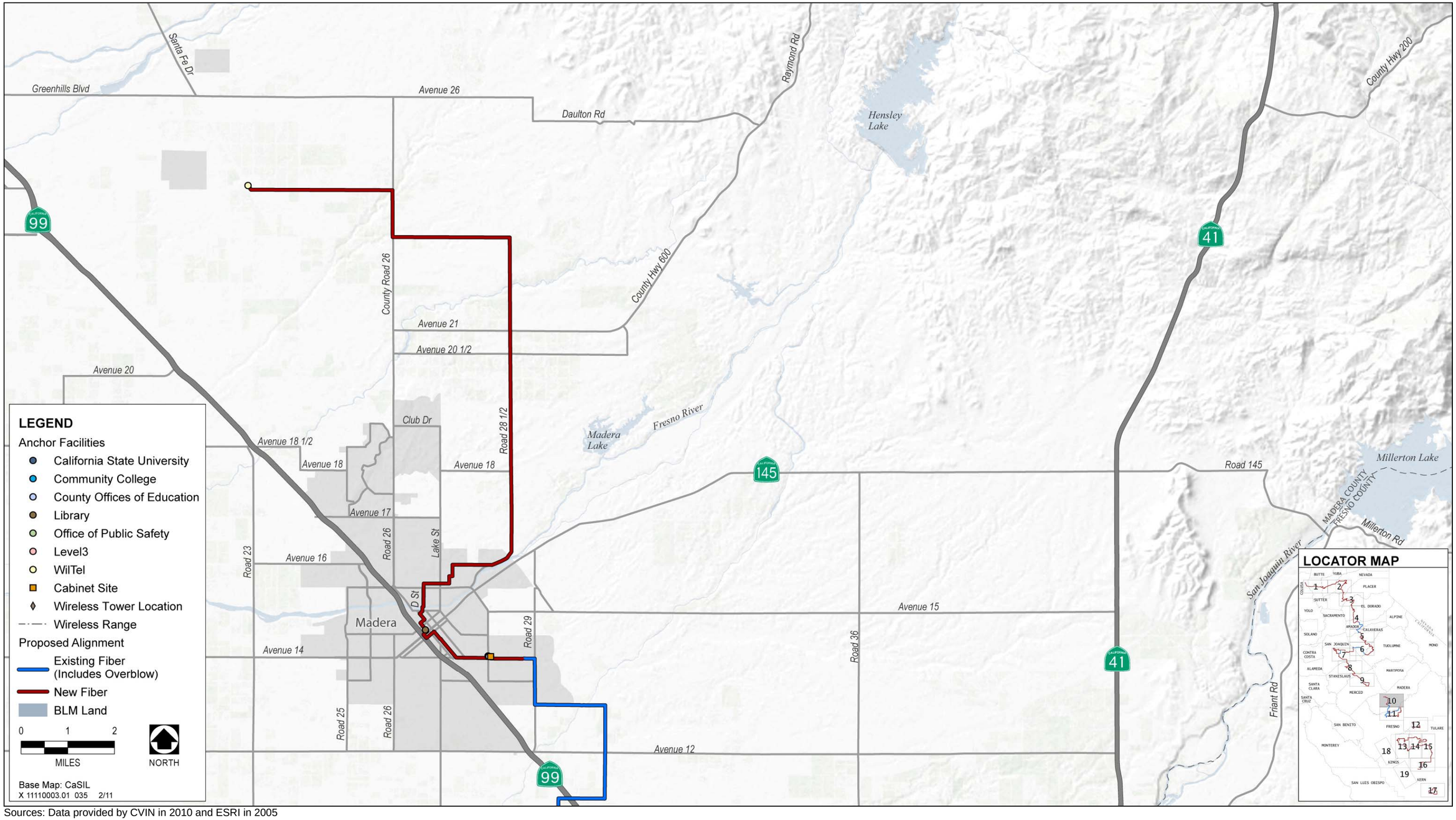
Exhibit A-8



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 9 of 19

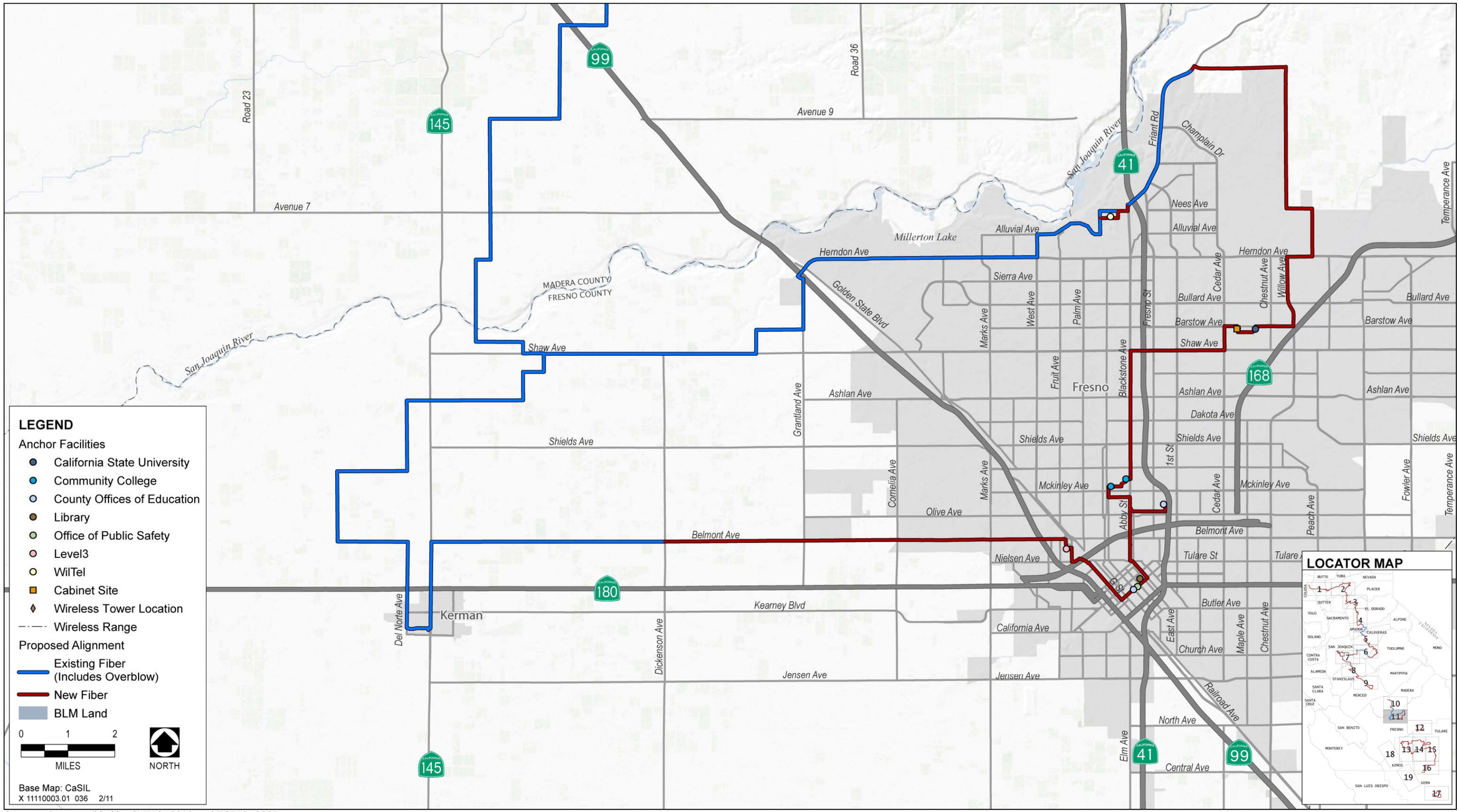
Exhibit A-9



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 10 of 19

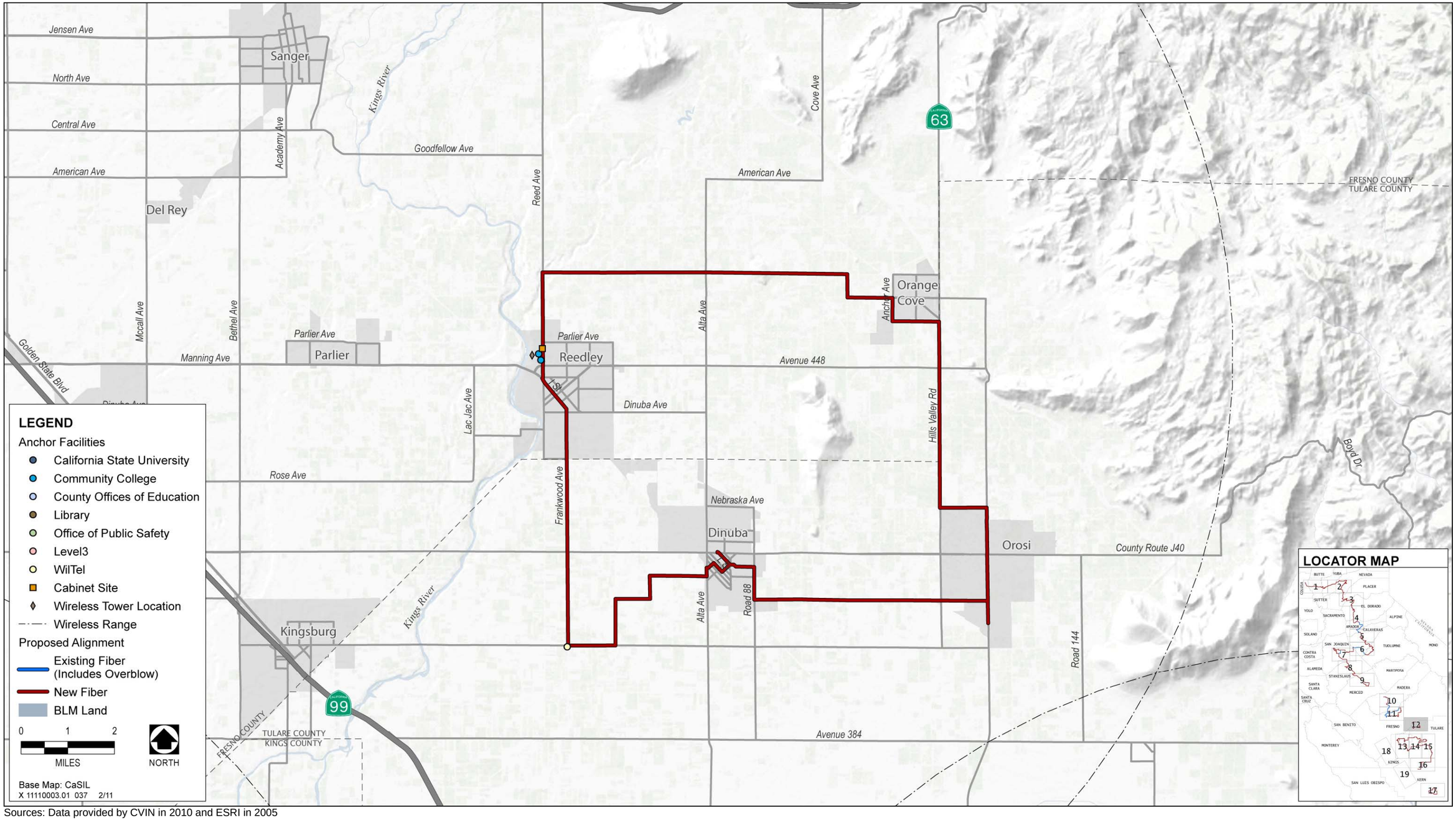
Exhibit A-10



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 11 of 19

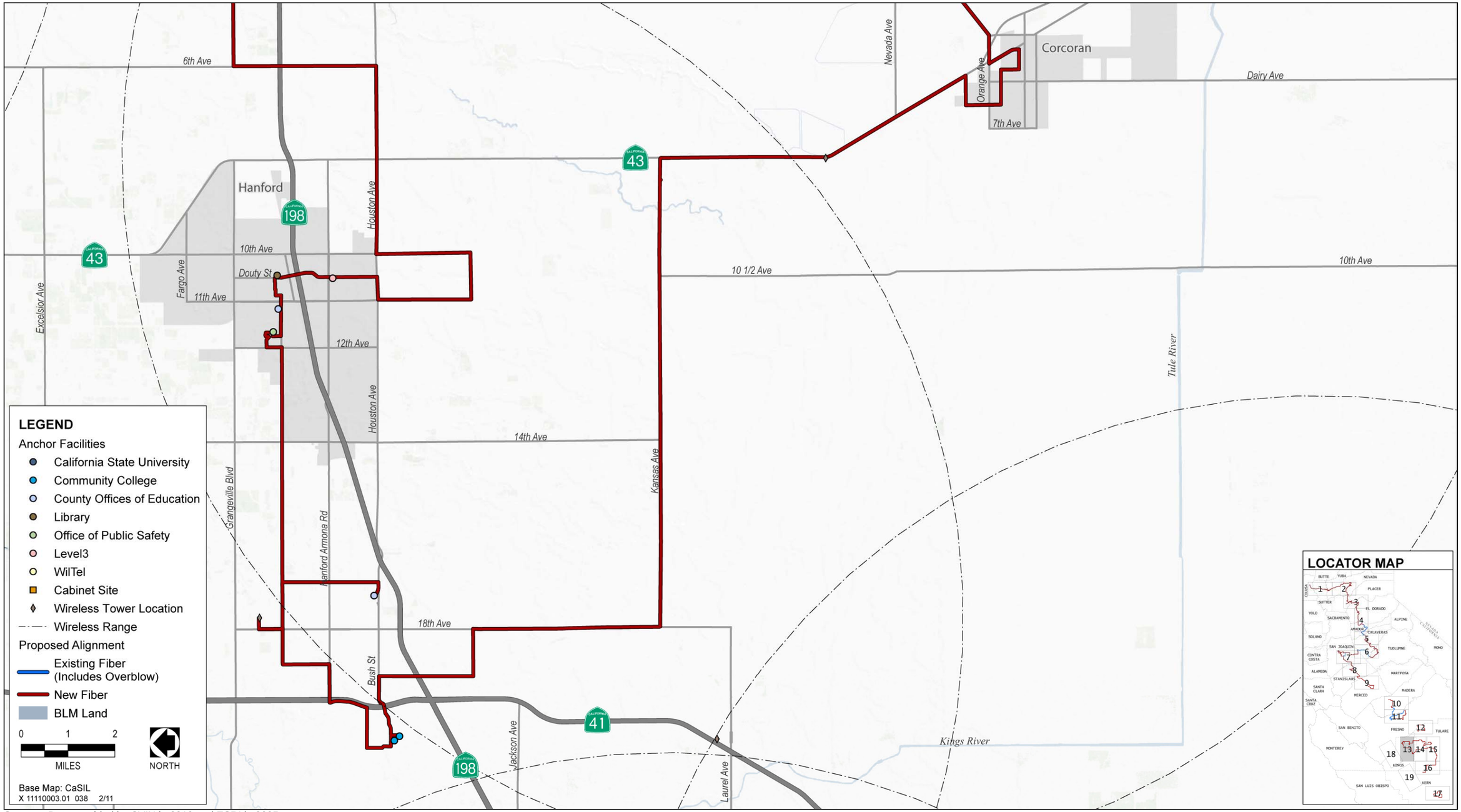
Exhibit A-11



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 12 of 19

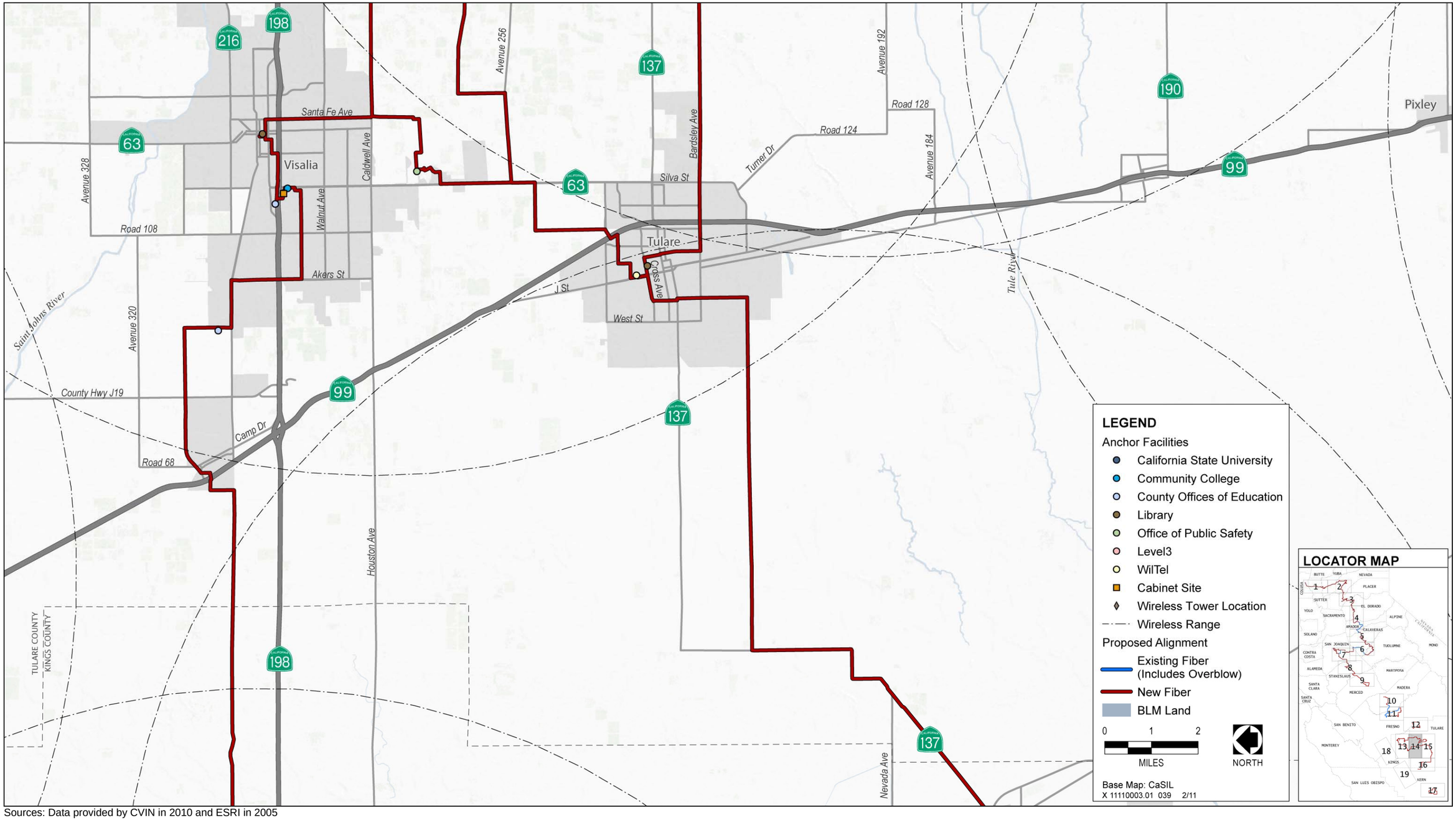
Exhibit A-12



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 13 of 19

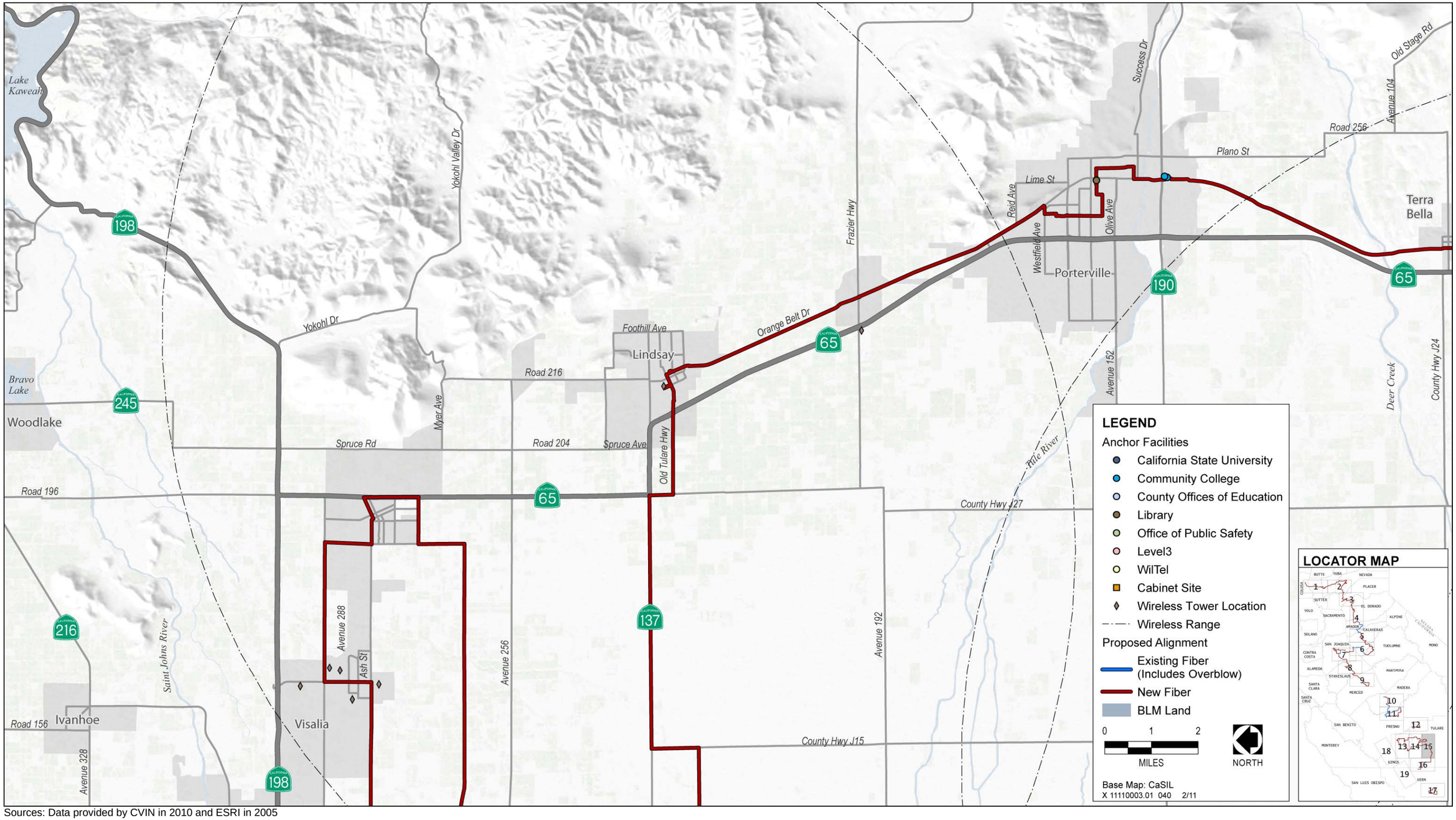
Exhibit A-13



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 14 of 19

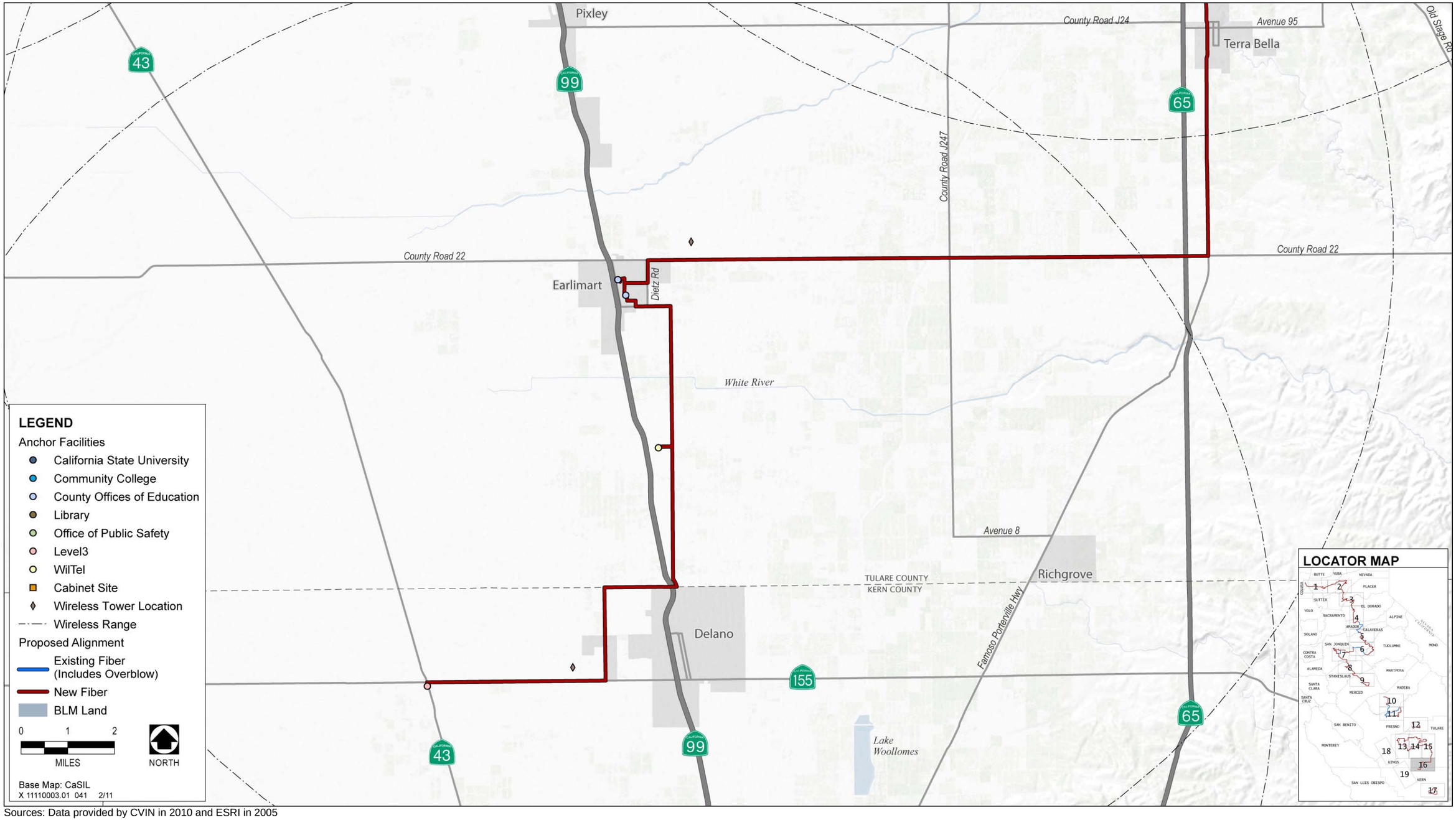
Exhibit A-14



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 15 of 19

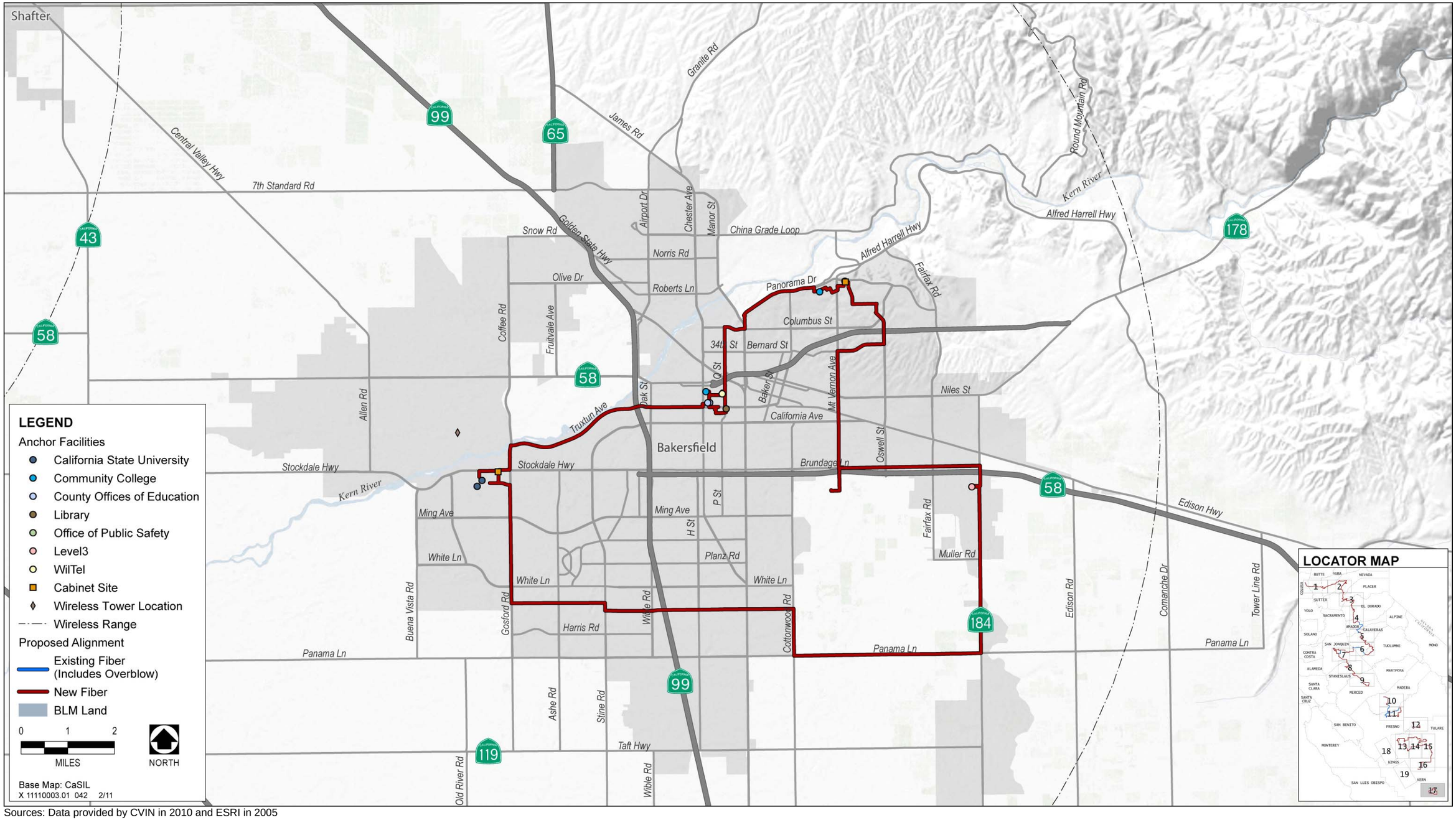
Exhibit A-15



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 16 of 19

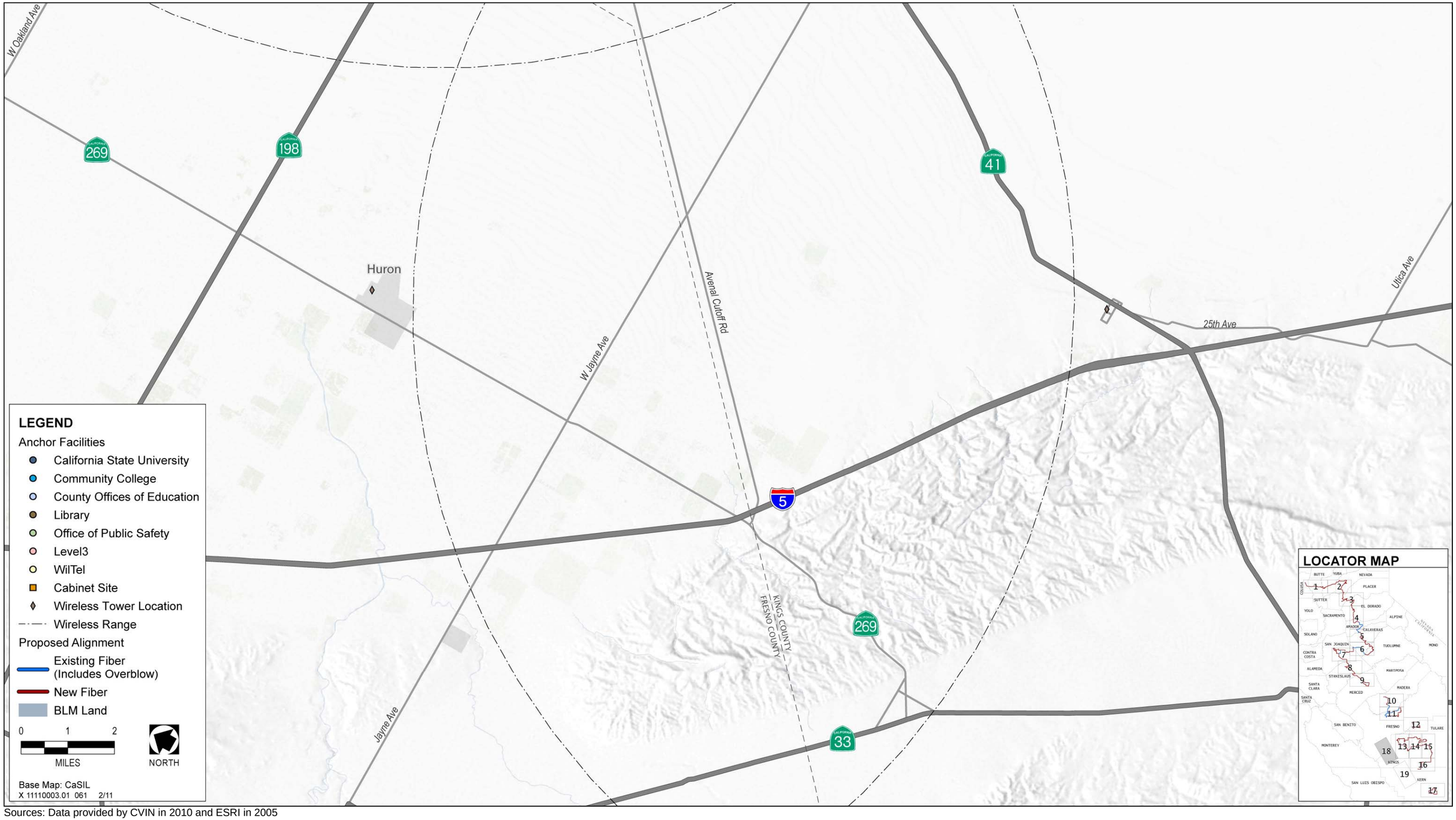
Exhibit A-16



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 17 of 19

Exhibit A-17



Sources: Data provided by CVIN in 2010 and ESRI in 2005

Proposed Route: Map 18 of 19

Exhibit A-18

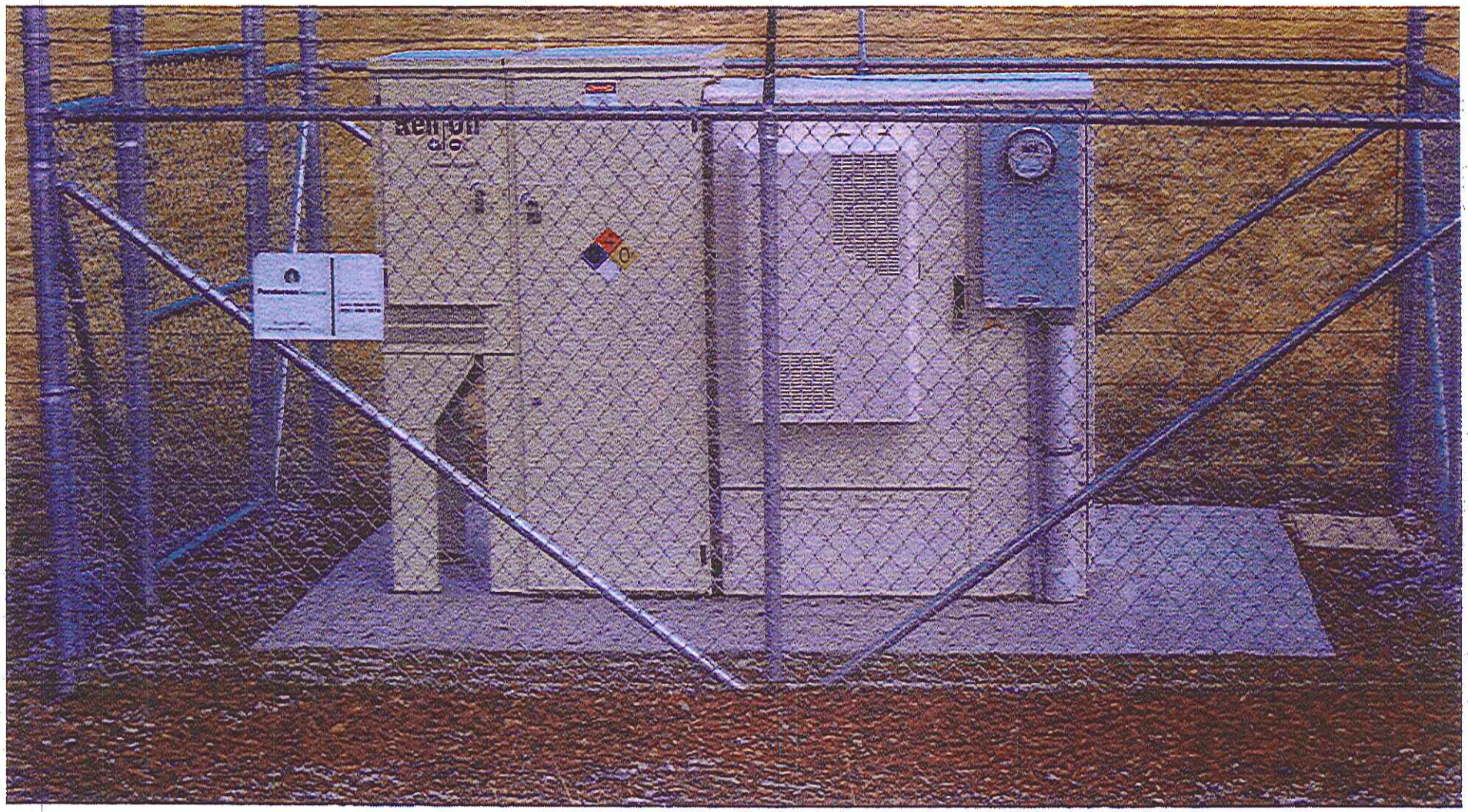
Sources: Data provided by CVIN in 2010 and ESRI in 2005

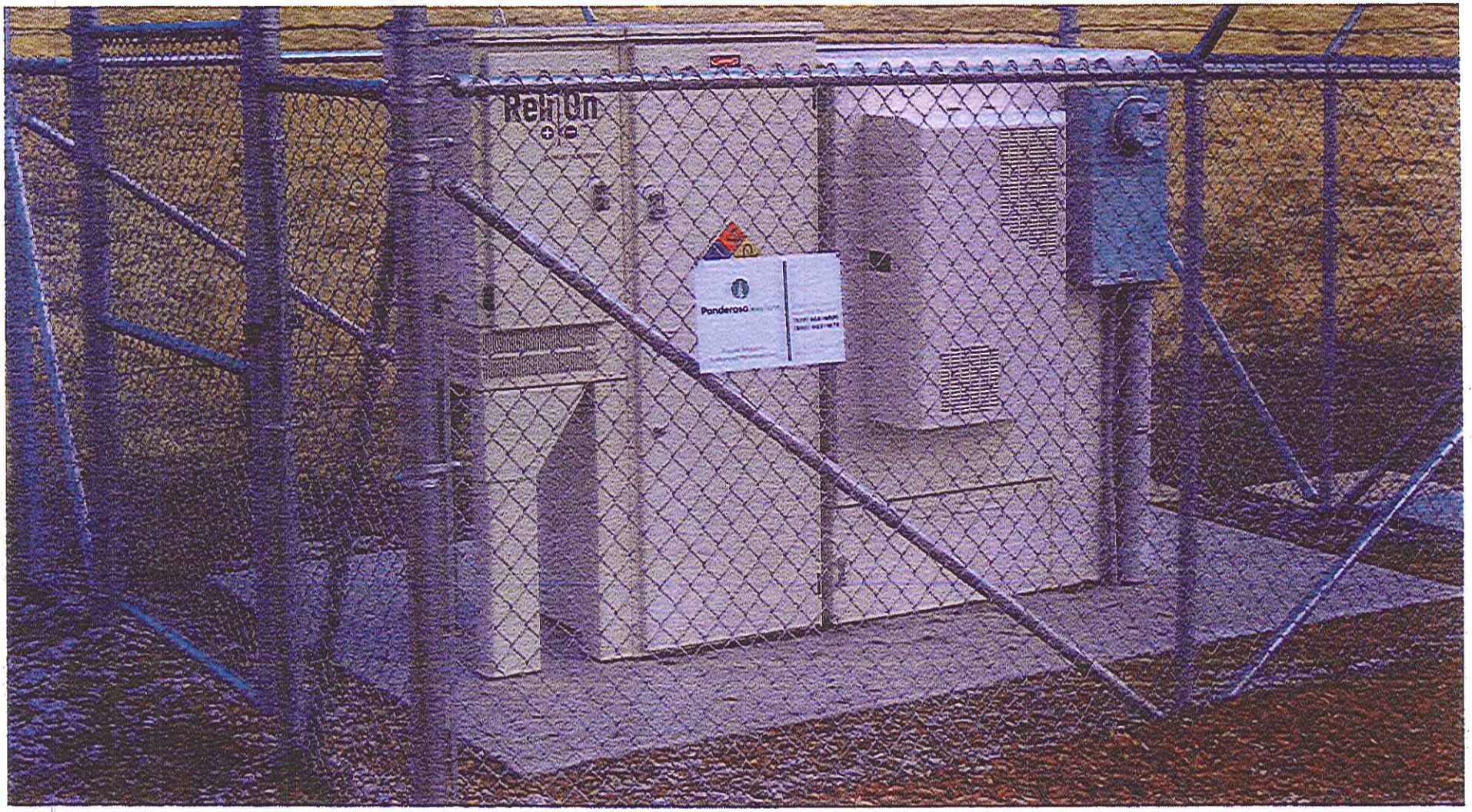
Proposed Route: Map 19 of 19

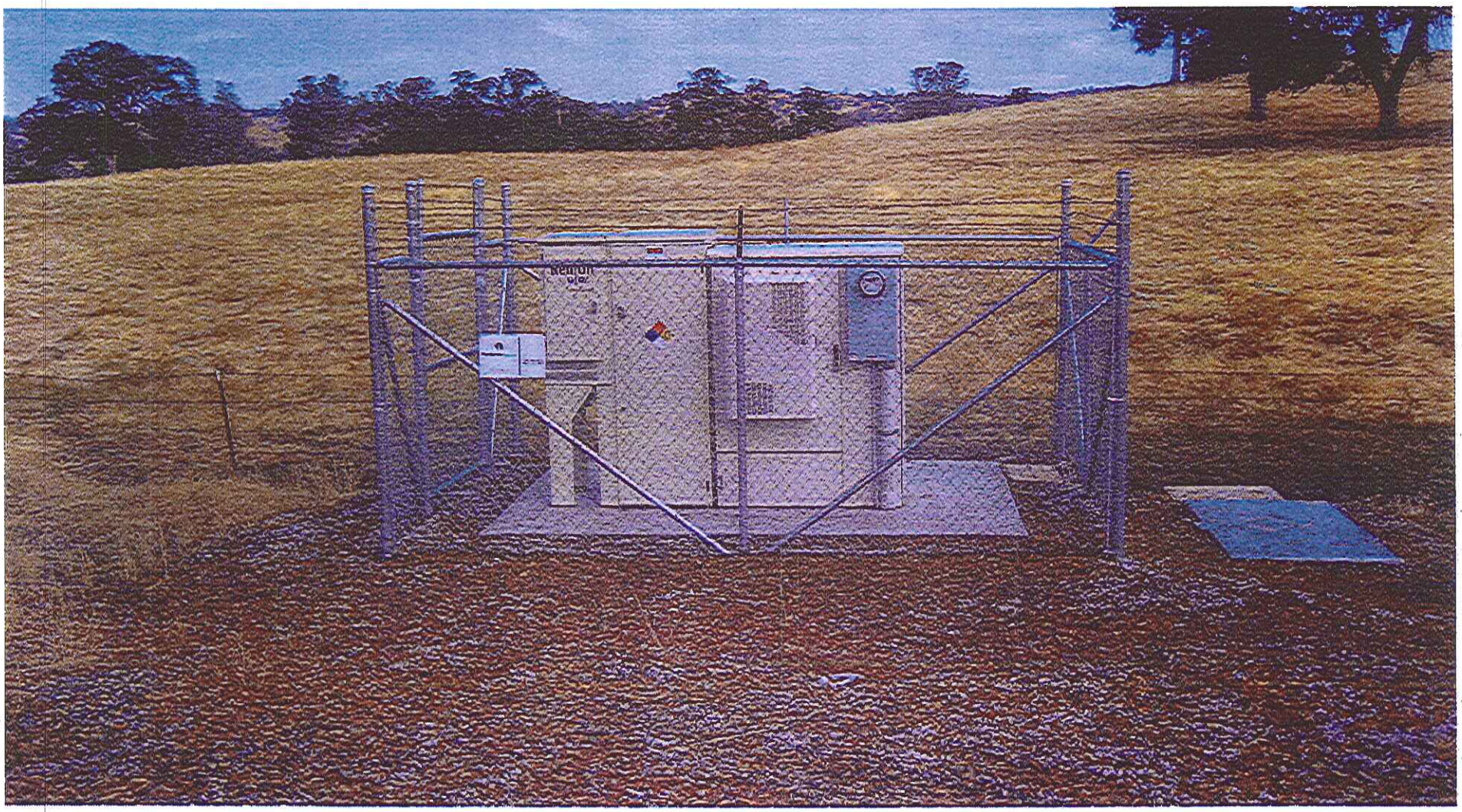
Exhibit A-19

Photographs of Typical Cabinet Facilities


Reli On
1-1

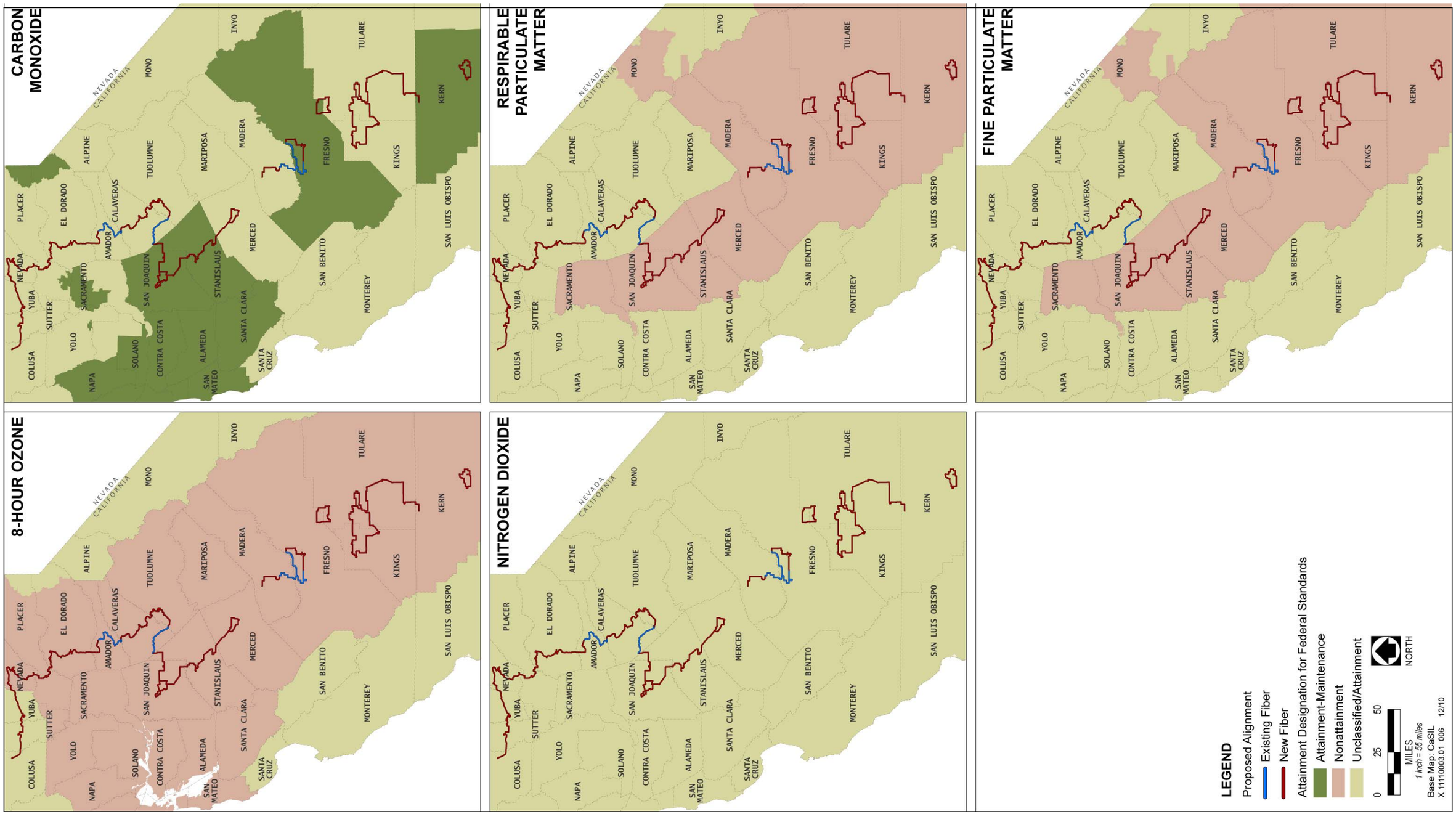



Ponderosa



APPENDIX B

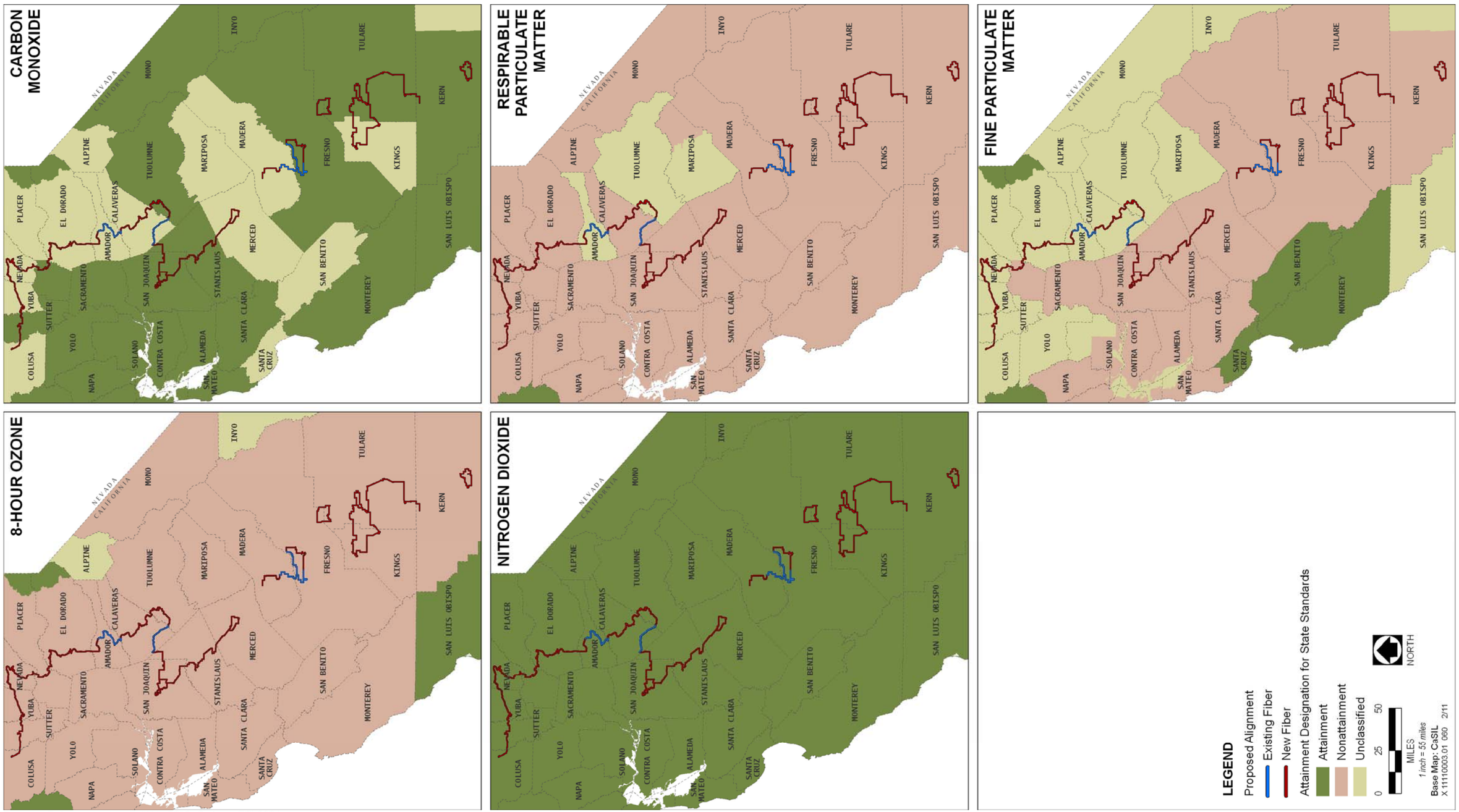
Federal and State Air Quality Attainment Designations in the Study Area and Modeling Results



Sources: Data provided by CVIN in 2010, Caltrans TSI 2004

Attainment Designation for Federal Standards in the Project Study Area

Appendix B



Sources: Data provided by CVIN in 2010, Caltrans TSI 2004

Attainment Designation for State Standards in the Project Study Area

Appendix B

Sect	Miles	Est	Map segment	Seg No	Segment	Route Miles	Const Start	Const Comp	Const Footage	Const Days	Ft/Day
6			1	29	Sutter+Colusa	26.35	9/26/11	5/14/12	139,128	232	600
6	140.00	$6	2	28	Yuba	22.65	9/9/11	2/15/12	119,592	159	750
6			3	27	Nevada	35.80	12/19/11	8/27/12	189,024	252	750
5			4	21	Red Mule North	16.70	9/9/11	1/4/12	88,176	118	750
5			4	24	Placer	26.02	9/26/11	3/27/12	137,386	183	750
6			4	26	El Dorado S	25.20	9/26/11	3/21/12	133,056	177	750
6			4	25	El Dorado N	30.00	10/27/11	5/25/12	158,400	211	750
5			4	4	Jackson Aerial Fiber*	0.52	7/27/11	8/1/11	2,746	5	500
5	135.54	$15	5	2	Calaveras Overblow	22.50	7/27/11	8/15/11	118,800	20	6000
5			5	20	Calaveras E	38.80	12/19/11	9/17/12	204,864	273	750
5			6	19	Tuolumne	31.00	10/27/11	6/1/12	163,680	218	750
4	113.75	$7	7	7	Stockton	15.44	7/27/11	12/9/11	81,523	136	600
4			7	8	Turlock	11.00	7/27/11	10/31/11	58,080	97	600
4			7	9	Modesto Urban	17.20	7/27/11	12/25/11	90,816	151	600
4			7	18	Modesto Rural	11.21	7/27/11	10/13/11	59,189	79	750
4			7	17	Stockton South	26.40	9/26/11	3/29/12	139,392	186	750
4			7	16	Stockton-Milton	32.50	10/27/11	6/11/12	171,600	229	750
3			8	11	Merced	38.50	10/27/11	9/29/12	203,280	339	600
3			9	10	Madera	19.60	9/9/11	2/28/12	103,488	172	600
3	145.99	$27	10	1	Fresno Overblow	56.36	7/27/11	9/14/11	297,581	50	6000
3			10	5	Fresno	31.53	9/26/11	6/29/12	166,478	277	600
1			11	23	Dinuba-Reedley	34.70	10/27/11	6/27/12	183,216	244	750
2			12	13	Visalia-Tulare	36.20	10/27/11	9/9/12	191,136	319	600
2			12	15	Waukena-Lemoore	46.70	12/19/11	11/11/12	246,576	329	750
2	127.40	$33	12	30	Tulare-Waukena	14.10	9/9/11	12/17/11	74,448	99	750
1	145.00	$27	13	3	Ducor Overblow	16.80	7/27/11	8/10/11	88,704	15	6000
1			13	14	Porterville-Tulare	29.90	9/26/11	6/15/12	157,872	263	600
1			13	22	Sandrini-Ducor	25.80	9/26/11	3/25/12	136,224	182	750
2			13	12	Hanford-Visalia	30.40	9/26/11	6/19/12	160,512	268	600
1			14	6	Bakersfield	37.80	10/27/11	9/23/12	199,584	333	600

* the map has Jackson overblow in Calaveras County but Jackson is in Amador County

Construction Scheduling									Trenching Per Crew Requirements																						
Orig Seg No	Segment	Route Miles	Const Start	Const Comp	Const Footage	Const Days	Ft/Day	Boxes	Crew	Workers	Days	Hrs/day Each	Pickup/Utility Truck	Hrs/Day Each	Days	Cable Plow	Hrs/Day Each	Days	Trencher	Hrs/Day Each	Days	Excavator/ Rock Saw/ Rock Breaker	Hrs/Day Each	Days	Dump Truck	Hrs/Day Each	Days	Backhoe	Hrs/Day Each	Days
29	Sutter+Colusa	26.35	9/26/11	5/14/12	139,128	232	600	56	3	3	186	8	3	3	186	2	6	131	2	6	55	2	3	140	2	2	186	3	2	186
28	Yuba	22.65	9/9/11	2/15/12	119,592	159	750	48	3	3	128	8	3	3	128	2	6	52	2	6	76	2	3	96	2	2	128	3	2	128
27	Nevada	35.80	12/19/11	8/27/12	189,024	252	750	76	3	3	202	8	3	3	202	2	6	81	2	6	121	2	3	152	2	2	202	3	2	202
21	Red Mule North	16.70	9/9/11	1/4/12	88,176	118	750	35	3	3	95	8	3	3	95	2	6	38	2	6	57	2	3	72	2	2	95	3	2	95
24	Placer	26.02	9/26/11	3/27/12	137,386	183	750	55	3	3	147	8	3	3	147	2	6	59	2	6	88	2	3	111	2	2	147	3	2	147
26	El Dorado S	25.20	9/26/11	3/21/12	133,056	177	750	53	3	3	142	8	3	3	142	2	6	57	2	6	85	2	3	107	2	2	142	3	2	142
25	El Dorado N	30.00	10/27/11	5/25/12	158,400	211	750	63	3	3	169	8	3	3	169	2	6	68	2	6	101	2	3	127	2	2	169	3	2	169
4	Jackson Aerial Fiber	0.52	7/27/11	8/1/11	2,746	5	500	1																						
2	Calaveras Overblow	22.50	7/27/11	8/15/11	118,800	20	6000																							
20	Calaveras E	38.80	12/19/11	9/17/12	204,864	273	750	82	3	3	219	8	3	3	219	2	6	88	2	6	131	2	3	165	2	2	219	3	2	219
19	Tuolumne	31.00	10/27/11	6/1/12	163,680	218	750	65	3	3	175	8	3	3	175	2	6	70	2	6	105	2	3	132	2	2	175	3	2	175
7	Stockton	15.44	7/27/11	12/9/11	81,523	136	600	33	3	3	109	8	3	3	109	2	6	22	2	6	87	2	3	82	2	2	109	3	2	109
8	Turlock	11.00	7/27/11	10/31/11	58,080	97	600	23	3	3	78	8	3	3	78	2	6	39	2	6	39	2	3	59	2	2	78	3	2	78
9	Modesto Urban	17.20	7/27/11	12/25/11	90,816	151	600	36	3	3	122	8	3	3	122															
18	Modesto Rural	11.21	7/27/11	10/13/11	59,189	79	750	24	3	3	64	8	3	3	64	2	6	45	2	6	19	2	3	48	2	2	64	3	2	64
17	Stockton South	26.40	9/26/11	3/29/12	139,392	186	750	56	3	3	149	8	3	3	149	2	6	75	2	6	74	2	3	112	2	2	149	3	2	149
16	Stockton-Milton	32.50	10/27/11	6/11/12	171,600	229	750	69	3	3	184	8	3	3	184	2	6	129	2	6	55	2	3	138	2	2	184	3	2	184
11	Merced	38.50	10/27/11	9/29/12	203,280	339	600	81	3	3	272	8	3	3	272	2	6	55	2	6	217	2	3	204	2	2	272	3	2	272
10	Madera	19.60	9/9/11	2/28/12	103,488	172	600	41	3	3	138	8	3	3	138	2	6	56	2	6	82	2	3	104	2	2	138	3	2	138
1	Fresno Overblow	56.36	7/27/11	9/14/11	297,581	50	6000																							
5	Fresno	31.53	9/26/11	6/29/12	166,478	277	600		3	3	222	8	3	3	222				2	6	222	2	3	167	2	2	222	3	2	222
23	Dinuba-Reedley	34.70	10/27/11	6/27/12	183,216	244	750	73	3	3	196	8	3	3	196	2	6	138	2	6	58	2	3	147	2	2	196	3	2	196
13	Visalia-Tulare	36.20	10/27/11	9/9/12	191,136	319	600	76	3	3	255	8	3	3	255	2	6	77	2	6	178	2	3	192	2	2	255	3	2	255
15	Waukena-Lemoore	46.70	12/19/11	11/11/12	246,576	329	750	99	3	3	264	8	3	3	264	2	6	159	2	6	105	2	3	198	2	2	264	3	2	264
30	Tulare-Waukena	14.10	9/9/11	12/17/11	74,448	99	750	30	3	3	80	8	3	3	80	2	6	56	2	6	24	2	3	60	2	2	80	3	2	80
3	Ducor Overblow	16.80	7/27/11	8/10/11	88,704	15	6000																							
14	Porterville-Tulare	29.90	9/26/11	6/15/12	157,872	263	600	63	3	3	211	8	3	3	211	2	6	85	2	6	126	2	3	159	2	2	211	3	2	211
22	Sandrini-Ducor	25.80	9/26/11	3/25/12	136,224	182	750	54	3	3	146	8	3	3	146	2	6	103	2	6	43	2	3	110	2	2	146	3	2	146
12	Hanford-Visalia	30.40	9/26/11	6/19/12	160,512	268	600	64	3	3	215	8	3	3	215	2	6	65	2	6	150	2	3	162	2	2	215	3	2	215
6	Bakersfield	37.80	10/27/11	9/23/12	199,584	333	600	80	3	3	267	8	3	3	267				2	6	267	2	4	201	2	2	267	3	2	267

Sect	Miles	Est	Map segment	Seg No	Segment	Route Miles	Const Start	Const Comp	Const Footage	Const Days	Ft/Day
6			1	29	Sutter+Colusa	26.35	9/26/11	5/14/12	139,128	232	600
6	140.00	$6	2	28	Yuba	22.65	9/9/11	2/15/12	119,592	159	750
6			3	27	Nevada	35.80	12/19/11	8/27/12	189,024	252	750
5			4	21	Red Mule North	16.70	9/9/11	1/4/12	88,176	118	750
5			4	24	Placer	26.02	9/26/11	3/27/12	137,386	183	750
6			4	26	El Dorado S	25.20	9/26/11	3/21/12	133,056	177	750
6			4	25	El Dorado N	30.00	10/27/11	5/25/12	158,400	211	750
5			4	4	Jackson Aerial Fiber*	0.52	7/27/11	8/1/11	2,746	5	500
5	135.54	$15	5	2	Calaveras Overblow	22.50	7/27/11	8/15/11	118,800	20	6000
5			5	20	Calaveras E	38.80	12/19/11	9/17/12	204,864	273	750
5			6	19	Tuolumne	31.00	10/27/11	6/1/12	163,680	218	750
4	113.75	$7	7	7	Stockton	15.44	7/27/11	12/9/11	81,523	136	600
4			7	8	Turlock	11.00	7/27/11	10/31/11	58,080	97	600
4			7	9	Modesto Urban	17.20	7/27/11	12/25/11	90,816	151	600
4			7	18	Modesto Rural	11.21	7/27/11	10/13/11	59,189	79	750
4			7	17	Stockton South	26.40	9/26/11	3/29/12	139,392	186	750
4			7	16	Stockton-Milton	32.50	10/27/11	6/11/12	171,600	229	750
3			8	11	Merced	38.50	10/27/11	9/29/12	203,280	339	600
3			9	10	Madera	19.60	9/9/11	2/28/12	103,488	172	600
3	145.99	$27	10	1	Fresno Overblow	56.36	7/27/11	9/14/11	297,581	50	6000
3			10	5	Fresno	31.53	9/26/11	6/29/12	166,478	277	600
1			11	23	Dinuba-Reedley	34.70	10/27/11	6/27/12	183,216	244	750
2			12	13	Visalia-Tulare	36.20	10/27/11	9/9/12	191,136	319	600
2			12	15	Waukena-Lemoore	46.70	12/19/11	11/11/12	246,576	329	750
2	127.40	$33	12	30	Tulare-Waukena	14.10	9/9/11	12/17/11	74,448	99	750
1	145.00	$27	13	3	Ducor Overblow	16.80	7/27/11	8/10/11	88,704	15	6000
1			13	14	Porterville-Tulare	29.90	9/26/11	6/15/12	157,872	263	600
1			13	22	Sandrini-Ducor	25.80	9/26/11	3/25/12	136,224	182	750
2			13	12	Hanford-Visalia	30.40	9/26/11	6/19/12	160,512	268	600
1			14	6	Bakersfield	37.80	10/27/11	9/23/12	199,584	333	600

* the map has Jackson overblow in Calaveras County but Jackson is in Amador County

Construction Scheduling									Directional Drilling Per Crew Requirements										Fiber Blowing Per Crew Requirements									
Orig Seg No	Segment	Route Miles	Const Start	Const Comp	Const Footage	Const Days	Ft/Day	Boxes	Crews	Days	Workers	Hrs/day Each	Pickup/Utility Truck	Hrs/Day Each	Boring Rig	Hrs/Day Each	Backhoe	Hrs/Day Each	Crews	Days	Workers	Hrs/day Each	Pickup/Utility Truck	Hrs/Day Each	Air Compressor	Hrs/Day Each	Backhoe	Hrs/Day Each
29	Sutter+Colusa	26.35	9/26/11	5/14/12	139,128	232	600	56	2	131	3	8	2	2	1	6	3	1.5	3	24	3	8	2	2	1	6	3	1.5
28	Yuba	22.65	9/9/11	2/15/12	119,592	159	750	48	1	90	3	8	2	2	1	6	3	1.5	3	16	3	8	2	2	1	6	3	1.5
27	Nevada	35.80	12/19/11	8/27/12	189,024	252	750	76	1	142	3	8	2	2	1	6	3	1.5	3	26	3	8	2	2	1	6	3	1.5
21	Red Mule North	16.70	9/9/11	1/4/12	88,176	118	750	35	1	67	3	8	2	2	1	6	3	1.5	3	12	3	8	2	2	1	6	3	1.5
24	Placer	26.02	9/26/11	3/27/12	137,386	183	750	55	1	103	3	8	2	2	1	6	3	1.5	3	19	3	8	2	2	1	6	3	1.5
26	El Dorado S	25.20	9/26/11	3/21/12	133,056	177	750	53	1	100	3	8	2	2	1	6	3	1.5	3	18	3	8	2	2	1	6	3	1.5
25	El Dorado N	30.00	10/27/11	5/25/12	158,400	211	750	63	1	119	3	8	2	2	1	6	3	1.5	3	22	3	8	2	2	1	6	3	1.5
4	Jackson Aerial Fiber	0.52	7/27/11	8/1/11	2,746	5	500	1																				
2	Calaveras Overblow	22.50	7/27/11	8/15/11	118,800	20	6000												3	16	3	8	2	2	1	6	3	1.5
20	Calaveras E	38.80	12/19/11	9/17/12	204,864	273	750	82	1	154	3	8	2	2	1	6	3	1.5	3	28	3	8	2	2	1	6	3	1.5
19	Tuolumne	31.00	10/27/11	6/1/12	163,680	218	750	65	1	123	3	8	2	2	1	6	3	1.5	3	22	3	8	2	2	1	6	3	1.5
7	Stockton	15.44	7/27/11	12/9/11	81,523	136	600	33	2	77	3	8	2	2	1	6	3	1.5	3	14	3	8	2	2	1	6	3	1.5
8	Turlock	11.00	7/27/11	10/31/11	58,080	97	600	23	2	55	3	8	2	2	1	6	3	1.5	3	10	3	8	2	2	1	6	3	1.5
9	Modesto Urban	17.20	7/27/11	12/25/11	90,816	151	600	36	2	86	3	8	2	2	1	6	3	1.5	3	16	3	8	2	2	1	6	3	1.5
18	Modesto Rural	11.21	7/27/11	10/13/11	59,189	79	750	24	1	45	3	8	2	2	1	6	3	1.5	3	8	3	8	2	2	1	6	3	1.5
17	Stockton South	26.40	9/26/11	3/29/12	139,392	186	750	56	1	105	3	8	2	2	1	6	3	1.5	3	19	3	8	2	2	1	6	3	1.5
16	Stockton-Milton	32.50	10/27/11	6/11/12	171,600	229	750	69	1	129	3	8	2	2	1	6	3	1.5	3	23	3	8	2	2	1	6	3	1.5
11	Merced	38.50	10/27/11	9/29/12	203,280	339	600	81	2	191	3	8	2	2	1	6	3	1.5	3	34	3	8	2	2	1	6	3	1.5
10	Madera	19.60	9/9/11	2/28/12	103,488	172	600	41	2	97	3	8	2	2	1	6	3	1.5	3	18	3	8	2	2	1	6	3	1.5
1	Fresno Overblow	56.36	7/27/11	9/14/11	297,581	50	6000												3	40	3	8	2	2	1	6	3	1.5
5	Fresno	31.53	9/26/11	6/29/12	166,478	277	600		2	156	3	8	2	2	1	6	3	1.5	3	28	3	8	2	2	1	6	3	1.5
23	Dinuba-Reedley	34.70	10/27/11	6/27/12	183,216	244	750	73	2	138	3	8	2	2	1	6	3	1.5	3	25	3	8	2	2	1	6	3	1.5
13	Visalia-Tulare	36.20	10/27/11	9/9/12	191,136	319	600	76	2	179	3	8	2	2	1	6	3	1.5	3	32	3	8	2	2	1	6	3	1.5
15	Waukena-Lemoore	46.70	12/19/11	11/11/12	246,576	329	750	99	2	185	3	8	2	2	1	6	3	1.5	3	33	3	8	2	2	1	6	3	1.5
30	Tulare-Waukena	14.10	9/9/11	12/17/11	74,448	99	750	30	1	56	3	8	2	2	1	6	3	1.5	3	10	3	8	2	2	1	6	3	1.5
3	Ducor Overblow	16.80	7/27/11	8/10/11	88,704	15	6000												3	12	3	8	2	2	1	6	3	1.5
14	Porterville-Tulare	29.90	9/26/11	6/15/12	157,872	263	600	63	2	148	3	8	2	2	1	6	3	1.5	3	27	3	8	2	2	1	6	3	1.5
22	Sandrini-Ducor	25.80	9/26/11	3/25/12	136,224	182	750	54	1	103	3	8	2	2	1	6	3	1.5	3	19	3	8	2	2	1	6	3	1.5
12	Hanford-Visalia	30.40	9/26/11	6/19/12	160,512	268	600	64	2	151	3	8	2	2	1	6	3	1.5	3	27	3	8	2	2	1	6	3	1.5
6	Bakersfield	37.80	10/27/11	9/23/12	199,584	333	600	80	2	187	3	8	2	2	1	6	3	1.5	3	34	3	8	2	2	1	6	3	1.5

Sect	Miles	Est	Map segment	Seg No	Segment	Route Miles	Const Start	Const Comp	Const Footage	Const Days	Ft/Day
6			1	29	Sutter+Colusa	26.35	9/26/11	5/14/12	139,128	232	600
6	140.00	$6	2	28	Yuba	22.65	9/9/11	2/15/12	119,592	159	750
6			3	27	Nevada	35.80	12/19/11	8/27/12	189,024	252	750
5			4	21	Red Mule North	16.70	9/9/11	1/4/12	88,176	118	750
5			4	24	Placer	26.02	9/26/11	3/27/12	137,386	183	750
6			4	26	El Dorado S	25.20	9/26/11	3/21/12	133,056	177	750
6			4	25	El Dorado N	30.00	10/27/11	5/25/12	158,400	211	750
5			4	4	Jackson Aerial Fiber*	0.52	7/27/11	8/1/11	2,746	5	500
5	135.54	$15	5	2	Calaveras Overblow	22.50	7/27/11	8/15/11	118,800	20	6000
5			5	20	Calaveras E	38.80	12/19/11	9/17/12	204,864	273	750
5			6	19	Tuolumne	31.00	10/27/11	6/1/12	163,680	218	750
4	113.75	$7	7	7	Stockton	15.44	7/27/11	12/9/11	81,523	136	600
4			7	8	Turlock	11.00	7/27/11	10/31/11	58,080	97	600
4			7	9	Modesto Urban	17.20	7/27/11	12/25/11	90,816	151	600
4			7	18	Modesto Rural	11.21	7/27/11	10/13/11	59,189	79	750
4			7	17	Stockton South	26.40	9/26/11	3/29/12	139,392	186	750
4			7	16	Stockton-Milton	32.50	10/27/11	6/11/12	171,600	229	750
3			8	11	Merced	38.50	10/27/11	9/29/12	203,280	339	600
3			9	10	Madera	19.60	9/9/11	2/28/12	103,488	172	600
3	145.99	$27	10	1	Fresno Overblow	56.36	7/27/11	9/14/11	297,581	50	6000
3			10	5	Fresno	31.53	9/26/11	6/29/12	166,478	277	600
1			11	23	Dinuba-Reedley	34.70	10/27/11	6/27/12	183,216	244	750
2			12	13	Visalia-Tulare	36.20	10/27/11	9/9/12	191,136	319	600
2			12	15	Waukena-Lemoore	46.70	12/19/11	11/11/12	246,576	329	750
2	127.40	$33	12	30	Tulare-Waukena	14.10	9/9/11	12/17/11	74,448	99	750
1	145.00	$27	13	3	Ducor Overblow	16.80	7/27/11	8/10/11	88,704	15	6000
1			13	14	Porterville-Tulare	29.90	9/26/11	6/15/12	157,872	263	600
1			13	22	Sandrini-Ducor	25.80	9/26/11	3/25/12	136,224	182	750
2			13	12	Hanford-Visalia	30.40	9/26/11	6/19/12	160,512	268	600
1			14	6	Bakersfield	37.80	10/27/11	9/23/12	199,584	333	600

* the map has Jackson overblow in Calaveras County but Jackson is in Amador County

Construction Scheduling									Aerial Fiber Installation Per Crew Requirements								Fiber Splicing Per Crew Requirements					
Orig Seg No	Segment	Route Miles	Const Start	Const Comp	Const Footage	Const Days	Ft/Day	Boxes	Crews	Days	Workers	Hrs/day Each	Pickup/Utility Truck	Hrs/Day Each	Bucket Truck	Hrs/Day Each	Crews	Days	Workers	Hrs/day Each	Pickup/Utility Truck	Hrs/Day Each
29	Sutter+Colusa	26.35	9/26/11	5/14/12	139,128	232	600	56									2	24	1	8	1	3
28	Yuba	22.65	9/9/11	2/15/12	119,592	159	750	48									2	16	1	8	1	3
27	Nevada	35.80	12/19/11	8/27/12	189,024	252	750	76									2	26	1	8	1	3
21	Red Mule North	16.70	9/9/11	1/4/12	88,176	118	750	35									2	12	1	8	1	3
24	Placer	26.02	9/26/11	3/27/12	137,386	183	750	55									2	19	1	8	1	3
26	El Dorado S	25.20	9/26/11	3/21/12	133,056	177	750	53									2	18	1	8	1	3
25	El Dorado N	30.00	10/27/11	5/25/12	158,400	211	750	63									2	22	1	8	1	3
4	Jackson Aerial Fiber	0.52	7/27/11	8/1/11	2,746	5	500	1	1	4	3	8	1	2	1	6	1	1	1	8	1	3
2	Calaveras Overblow	22.50	7/27/11	8/15/11	118,800	20	6000										2	2	1	8	1	3
20	Calaveras E	38.80	12/19/11	9/17/12	204,864	273	750	82									2	28	1	8	1	3
19	Tuolumne	31.00	10/27/11	6/1/12	163,680	218	750	65									2	22	1	8	1	3
7	Stockton	15.44	7/27/11	12/9/11	81,523	136	600	33									2	14	1	8	1	3
8	Turlock	11.00	7/27/11	10/31/11	58,080	97	600	23									2	10	1	8	1	3
9	Modesto Urban	17.20	7/27/11	12/25/11	90,816	151	600	36									2	16	1	8	1	3
18	Modesto Rural	11.21	7/27/11	10/13/11	59,189	79	750	24									2	8	1	8	1	3
17	Stockton South	26.40	9/26/11	3/29/12	139,392	186	750	56									2	19	1	8	1	3
16	Stockton-Milton	32.50	10/27/11	6/11/12	171,600	229	750	69									2	23	1	8	1	3
11	Merced	38.50	10/27/11	9/29/12	203,280	339	600	81									2	34	1	8	1	3
10	Madera	19.60	9/9/11	2/28/12	103,488	172	600	41									2	18	1	8	1	3
1	Fresno Overblow	56.36	7/27/11	9/14/11	297,581	50	6000										2	5	1	8	1	3
5	Fresno	31.53	9/26/11	6/29/12	166,478	277	600										2	28	1	8	1	3
23	Dinuba-Reedley	34.70	10/27/11	6/27/12	183,216	244	750	73									2	25	1	8	1	3
13	Visalia-Tulare	36.20	10/27/11	9/9/12	191,136	319	600	76									2	32	1	8	1	3
15	Waukena-Lemoore	46.70	12/19/11	11/11/12	246,576	329	750	99									2	33	1	8	1	3
30	Tulare-Waukena	14.10	9/9/11	12/17/11	74,448	99	750	30									2	10	1	8	1	3
3	Ducor Overblow	16.80	7/27/11	8/10/11	88,704	15	6000										2	2	1	8	1	3
14	Porterville-Tulare	29.90	9/26/11	6/15/12	157,872	263	600	63									2	27	1	8	1	3
22	Sandrini-Ducor	25.80	9/26/11	3/25/12	136,224	182	750	54									2	19	1	8	1	3
12	Hanford-Visalia	30.40	9/26/11	6/19/12	160,512	268	600	64									2	27	1	8	1	3
6	Bakersfield	37.80	10/27/11	9/23/12	199,584	333	600	80									2	34	1	8	1	3

Primarily Urban Construction
Primarily Rural Construction
Overblow in Existing Conduit
Aerial Fiber Construction

Sites Construction & Installation						Construction Crew Requirements Per Crew Requirements												
Seg No	Sites	Sites	Const Start	Const	Const	Crews	Workers	Days	Truck/	Mini	Days	Hours	Backhoe	Days	Hours	Dump	Days	Hours
1	Tower Site In	12	7/30/11	10/22/11	84	3	2	3.5	1									
2	WilTel Site In	9	7/30/11	8/26/11	27	1	2	13.5	1									
3	Level3 Site In	8	7/30/11	8/23/11	24	1	2	12	1									
4	CSU Site Ins	3	7/30/11	8/5/11	6	1	1	6	1									
5	CC Site Insta	13	7/30/11	8/25/11	26	1	1	26	1									
6	COE 10G Sit	1	7/30/11	8/1/11	2	1	1	2	1									
7	COE 1G Site	21	7/30/11	9/10/11	42	1	1	42	1									
8	Library Site I	20	7/30/11	9/8/11	40	1	1	40	1									
9	Public Safety	6	7/30/11	8/11/11	12	1	1	12	1									
10	Cabinet Site	52	7/22/11	7/20/12	364	3	3	121	2	1	121	3	1	121	2	1	121	1
11	Volcano Fibe	3	7/30/11	8/8/11	9	1	1	9.0	1									

Modeling Results

Summary of Modeling Results

Emission Estimates for -> CVIN Splicing Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)		
Grubbing/Land Clearing	-	-	-	-	-	-	-	-		
Grading/Excavation	-	-	-	-	-	-	-	-		
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-		
Paving	-	-	-	-	-	-	-	-		
Maximum (pounds/day)	-	-	-	-	-	-	-	-	-	-
Total (tons/construction project)	-	-	-	-	-	-	-	-	-	-

Emission Estimates for -> CVIN Trenching Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)		
Grubbing/Land Clearing	-	-	-	-	-	-	-	-		
Grading/Excavation	2.7	11.8	18.6	31.4	1.4	7.5	1.2	6.2		
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-		
Paving	-	-	-	-	-	-	-	-		
Maximum (pounds/day)	2.7	11.8	18.6	31.4	1.4	7.5	1.2	6.2	-	-
Total (tons/construction project)	0.4	1.8	2.9	2.1	0.2	0.6	0.2	0.4	-	-

Emission Estimates for -> CVIN Drilling Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)		
Grubbing/Land Clearing	-	-	-	-	-	-	-	-		
Grading/Excavation	1.4	6.7	14.3	30.5	0.5	6.7	0.5	6.2		
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-		
Paving	-	-	-	-	-	-	-	-		
Maximum (pounds/day)	1.4	6.7	14.3	30.5	0.5	6.7	0.5	6.2	-	-
Total (tons/construction project)	0.2	1.0	2.2	1.9	0.1	0.5	0.1	0.4	-	-

Emission Estimates for -> CVIN Fiber Blowing Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)		
Grubbing/Land Clearing	-	-	-	-	-	-	-	-		
Grading/Excavation	-	-	-	-	-	-	-	-		
Drainage/Utilities/Sub-Grade	0.4	3.3	3.1	30.2	0.2	6.5	0.2	6.2		
Paving	-	-	-	-	-	-	-	-		
Maximum (pounds/day)	0.4	3.3	3.1	30.2	0.2	6.5	0.2	6.2	-	-
Total (tons/construction project)	0.1	0.5	0.5	0.0	0.0	0.0	0.0	-	-	-

Emission Estimates for -> CVIN Aerial Hanging Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)		
Grubbing/Land Clearing	-	-	-	-	-	-	-	-		
Grading/Excavation	-	-	-	-	-	-	-	-		
Drainage/Utilities/Sub-Grade	0.2	0.6	1.1	0.1	0.1	0.1	0.1	-		
Paving	-	-	-	-	-	-	-	-		
Maximum (pounds/day)	0.2	0.6	1.1	0.1	0.1	0.1	0.1	-	-	-
Total (tons/construction project)	0.0	0.1	0.2	0.0	0.0	0.0	0.0	-	-	-

APCD	Operation	Days	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Amador	Jackson Aerial Fiber	6	0.2	0.6	1.1	0.1	0.1	-	0.1	0.1	-	96.2
	Red Mule North	118	1.5	7.2	12.0	30.7	0.7	30.0	6.9	0.7	6.2	1,706.1
	Total Short Tons/construction period		0.09	0.43	0.71	1.81	0.04	1.77	0.41	0.04	0.37	100.95

APCD	Operation	Days	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Calaveras	Calaveras Overblow	20	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Calaveras E	273	1.5	7.2	12.0	30.7	0.7	30.0	6.9	0.7	6.2	1,706.1
	Total Short Tons/construction period		0.21	1.02	1.67	4.50	0.10	4.40	1.01	0.09	0.91	237.53

APCD	Operation	Days	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Colusa and Sutter	Sutter and Colusa	232	1.5	7.2	12.0	30.7	0.7	30.0	6.9	0.7	6.2	1,706.1
	Total Short Tons/construction period		0.18	0.84	1.39	3.56	0.08	3.48	0.80	0.08	0.72	197.90
	Mitigated				9.59	lbs/day						
					1.11	tpy						
	With 1 crew per activity type per segment per day assumption				3.16	lbs/day						

APCD	Operation	Days	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
El Dorado	El Dorado N	178	1.5	7.2	12.0	30.7	0.7	30.0	6.9	0.7	6.2	1,706.1
	El Dorado S	212	1.5	7.2	12.0	30.7	0.7	30.0	6.9	0.7	6.2	1,706.1
	Total Short Tons/construction period		0.29	1.41	2.34	5.99	0.14	5.85	1.34	0.13	1.22	332.68

APCD	Operation	Days	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Feather River	Yuba	160	1.5	7.2	12.0	30.7	0.7	30.0	6.9	0.7	6.2	1,706.1
	Sutter and Colusa	231	1.5	7.2	12.0	30.7	0.7	30.0	6.9	0.7	6.2	1,706.1
	Total Short Tons/construction period		0.30	1.42	2.34	6.01	0.14	5.87	1.35	0.13	1.22	333.53
	Mitigated				9.59	lbs/day						
					1.87	tpy						
	With 1 crew per activity type per segment per day assumption				3.16	lbs/day						

APCD	Operation	Days	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Northern Sierra	Nevada	252	1.5	7.2	12.0	30.7	0.7	30.0	6.9	0.7	6.2	1,706.1
	Total Short Tons/construction period		0.19	0.91	1.51	3.87	0.09	3.78	0.87	0.08	0.79	214.96

APCD	Operation	Days	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Placer	Placer	183	1.5	7.2	12.0	30.7	0.7	30.0	6.9	0.7	6.2	1,706.1
	Total Short Tons/construction period		0.14	0.66	1.10	2.81	0.07	2.75	0.63	0.06	0.57	156.10

APCD	Operation	Days	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Tuolomne	Tuolomne	218	1.5	7.2	12.0	30.7	0.7	30.0	6.9	0.7	6.2	1,706.1
	Total Short Tons/construction period		0.16	0.79	1.31	3.35	0.08	3.27	0.75	0.07	0.68	185.96

APCD	Operation	Days	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
San Joaquin	Ducor Overblow											
TRENCHING	Porterville-Tulare	211	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Sandrini-Ducor	146	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Bakersfield	267	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Dinuba-Reedley	196	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Tulare-Waukena	80	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Hanford-Visalia	215	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Visalia-Tulare	255	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Waukena-Lemoore	264	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Fresno Overblow											
	Madera	138	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Fresno	222	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Merced	272	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Stockton	109	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Turlock	78	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Modesto Urban	122	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Modesto Rural	64	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Stockton South	149	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Stockton-Milton	184	2.7	11.8	18.6	31.4	1.4	30.0	7.5	1.2	6.2	1,864.7
	Total Short Tons/construction period		4.04	17.53	27.58	46.60	2.02	44.58	11.13	1.85	9.27	2,770.90

APCD	Operation	Days	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
San Joaquin	Ducor Overblow											
DRILLING	Porterville-Tulare	148	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Sandrini-Ducor	103	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Bakersfield	187	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Dinuba-Reedley	138	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Tulare-Waukena	56	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Hanford-Visalia	151	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Visalia-Tulare	179	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Waukena-Lemoore	185	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Fresno Overblow											
	Madera	97	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Fresno	156	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Merced	191	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Stockton	77	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Turlock	55	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Modesto Urban	86	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Modesto Rural	45	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Stockton South	105	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Stockton-Milton	129	1.4	6.7	14.3	30.5	0.5	30.0	6.7	0.5	6.2	2,788.1
	Total Short Tons/construction period		1.46	6.96	14.95	31.89	0.57	31.32	7.03	0.52	6.51	2,910.80

APCD	Operation	Days	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
San Joaquin	Ducor Overblow	12	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
FIBER BLOWING	Porterville-Tulare	27	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Sandrini-Ducor	19	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Bakersfield	34	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Dinuba-Reedley	25	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Tulare-Waukena	10	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Hanford-Visalia	27	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Visalia-Tulare	32	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Waukena-Lemoore	33	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Fresno Overblow	40	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Madera	18	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Fresno	28	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Merced	34	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Stockton	14	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Turlock	10	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Modesto Urban	16	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Modesto Rural	8	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Stockton South	19	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
	Stockton-Milton	23	0.4	3.3	3.1	30.2	0.2	30.0	6.5	0.2	6.2	465.4
		Total Short Tons/construction period	0.09	0.70	0.66	6.49	0.05	6.44	1.39	0.05	1.34	99.82

APCD	Operation	Days	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
San Joaquin	Ducor Overblow											
AERIAL HANGING	Porterville-Tulare											
	Sandrini-Ducor											
	Bakersfield											
	Dinuba-Reedley											
	Tulare-Waukena											
	Hanford-Visalia											
	Visalia-Tulare											
	Waukena-Lemoore											
	Fresno Overblow											
	Madera											
	Fresno											
	Merced											
	Stockton											
	Turlock											
	Modesto Urban											
	Modesto Rural											
	Stockton South											
	Stockton-Milton											
		Total Short Tons/construction period	-	-	-	-	-	-	-	-	-	-

APCD	Operation	Days		ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
San Joaquin	Ducor Overblow		2	-	-	-	-	-	-	-	-	-	-
FIBER SPLICING	Porterville-Tulare		27	-	-	-	-	-	-	-	-	-	-
	Sandrini-Ducor		19	-	-	-	-	-	-	-	-	-	-
	Bakersfield		34	-	-	-	-	-	-	-	-	-	-
	Dinuba-Reedley		25	-	-	-	-	-	-	-	-	-	-
	Tulare-Waukena		10	-	-	-	-	-	-	-	-	-	-
	Hanford-Visalia		27	-	-	-	-	-	-	-	-	-	-
	Visalia-Tulare		32	-	-	-	-	-	-	-	-	-	-
	Waukena-Lemoore		33	-	-	-	-	-	-	-	-	-	-
	Fresno Overblow		5	-	-	-	-	-	-	-	-	-	-
	Madera		18	-	-	-	-	-	-	-	-	-	-
	Fresno		28	-	-	-	-	-	-	-	-	-	-
	Merced		34	-	-	-	-	-	-	-	-	-	-
	Stockton		14	-	-	-	-	-	-	-	-	-	-
	Turlock		10	-	-	-	-	-	-	-	-	-	-
	Modesto Urban		16	-	-	-	-	-	-	-	-	-	-
	Modesto Rural		8	-	-	-	-	-	-	-	-	-	-
	Stockton South		19	-	-	-	-	-	-	-	-	-	-
	Stockton-Milton		23	-	-	-	-	-	-	-	-	-	-
		Total Short Tons/construction period		-	-	-	-	-	-	-	-	-	-

APCD	Operation	Days	ROG	CO	Nox	PM10 Total	PM10 Exh	PM10 Dust	PM2.5 Total	PM2.5 Exh	PM2.5 Dust	CO2
San Joaquin	TOTALS	Pounds Per Day	77.9	376.0	617.2	1,627.0	37.0	1,590.0	364.6	33.9	330.7	87,939.7
		TPY (dispersed over 14 months)	4.8	21.6	37.0	72.8	2.3	70.6	16.8	2.1	14.7	4,955.6
		Mitigated lbs/day	62.3	300.8	493.8	1,301.6	29.6	1,272.0	291.7	27.1	264.6	70,351.7
		Mitigated TPY	3.8	17.3	29.6	58.3	1.8	56.5	13.4	1.7	11.7	3,964.5
	With 1 crew per activity type per segment per day assumption (TPY)		1.26	5.70	9.77	19.23	0.60	18.63	4.42	0.55	3.88	1,308.28

Construction Scheduling

Sect	Miles	Est	Map segment	Seg No	Segment	Route Miles	Const Start	Const Comp	Const Footage	Const Days	Ft/Day
6			1	29	Sutter+Colusa	26.35	9/26/11	5/14/12	139,128	232	600
6	140.00	$6	2	28	Yuba	22.65	9/9/11	2/15/12	119,592	159	750
6			3	27	Nevada	35.80	12/19/11	8/27/12	189,024	252	750
5			4	21	Red Mule North	16.70	9/9/11	1/4/12	88,176	118	750
5			4	24	Placer	26.02	9/26/11	3/27/12	137,386	183	750
6			4	26	El Dorado S	25.20	9/26/11	3/21/12	133,056	177	750
6			4	25	El Dorado N	30.00	10/27/11	5/25/12	158,400	211	750
5			4	4	Jackson Aerial Fiber*	0.52	7/27/11	8/1/11	2,746	5	500
5	135.54	$15	5	2	Calaveras Overblow	22.50	7/27/11	8/15/11	118,800	20	6000
5			5	20	Calaveras E	38.80	12/19/11	9/17/12	204,864	273	750
5			6	19	Tuolumne	31.00	10/27/11	6/1/12	163,680	218	750
4	113.75	$7	7	7	Stockton	15.44	7/27/11	12/9/11	81,523	136	600
4			7	8	Turlock	11.00	7/27/11	10/31/11	58,080	97	600
4			7	9	Modesto Urban	17.20	7/27/11	12/25/11	90,816	151	600
4			7	18	Modesto Rural	11.21	7/27/11	10/13/11	59,189	79	750
4			7	17	Stockton South	26.40	9/26/11	3/29/12	139,392	186	750
4			7	16	Stockton-Milton	32.50	10/27/11	6/11/12	171,600	229	750
3			8	11	Merced	38.50	10/27/11	9/29/12	203,280	339	600
3			9	10	Madera	19.60	9/9/11	2/28/12	103,488	172	600
3	145.99	$27	10	1	Fresno Overblow	56.36	7/27/11	9/14/11	297,581	50	6000
3			10	5	Fresno	31.53	9/26/11	6/29/12	166,478	277	600
1			11	23	Dinuba-Reedley	34.70	10/27/11	6/27/12	183,216	244	750
2			12	13	Visalia-Tulare	36.20	10/27/11	9/9/12	191,136	319	600
2			12	15	Waukena-Lemoore	46.70	12/19/11	11/11/12	246,576	329	750
2	127.40	$33	12	30	Tulare-Waukena	14.10	9/9/11	12/17/11	74,448	99	750
1	145.00	$27	13	3	Ducor Overblow	16.80	7/27/11	8/10/11	88,704	15	6000
1			13	14	Porterville-Tulare	29.90	9/26/11	6/15/12	157,872	263	600
1			13	22	Sandrini-Ducor	25.80	9/26/11	3/25/12	136,224	182	750
2			13	12	Hanford-Visalia	30.40	9/26/11	6/19/12	160,512	268	600
1			14	6	Bakersfield	37.80	10/27/11	9/23/12	199,584	333	600

Construction Scheduling									Trenching																						
									Per Crew Requirements																						
Orig Seg No	Segment	Route Miles	Const Start	Const Comp	Const Footage	Const Days	Ft/Day	Boxes	Crew	Workers	Days	Hrs/day Each	Pickup/Utility Truck	Hrs/Day Each	Days	Cable Plow	Hrs/Day Each	Days	Trencher	Hrs/Day Each	Days	Excavator/ Rock Saw/ Rock Breaker	Hrs/Day Each	Days	Dump Truck	Hrs/Day Each	Days	Backhoe	Hrs/Day Each	Days
29	Sutter+Colusa	26.35	9/26/11	5/14/12	139,128	232	600	56	3	3	186	8	3	3	186	2	6	131	2	6	55	2	3	140	2	2	186	3	2	186
28	Yuba	22.65	9/9/11	2/15/12	119,592	159	750	48	3	3	128	8	3	3	128	2	6	52	2	6	76	2	3	96	2	2	128	3	2	128
27	Nevada	35.80	12/19/11	8/27/12	189,024	252	750	76	3	3	202	8	3	3	202	2	6	81	2	6	121	2	3	152	2	2	202	3	2	202
21	Red Mule North	16.70	9/9/11	1/4/12	88,176	118	750	35	3	3	95	8	3	3	95	2	6	38	2	6	57	2	3	72	2	2	95	3	2	95
24	Placer	26.02	9/26/11	3/27/12	137,386	183	750	55	3	3	147	8	3	3	147	2	6	59	2	6	88	2	3	111	2	2	147	3	2	147
26	El Dorado S	25.20	9/26/11	3/21/12	133,056	177	750	53	3	3	142	8	3	3	142	2	6	57	2	6	85	2	3	107	2	2	142	3	2	142
25	El Dorado N	30.00	10/27/11	5/25/12	158,400	211	750	63	3	3	169	8	3	3	169	2	6	68	2	6	101	2	3	127	2	2	169	3	2	169
4	Jackson Aerial Fiber	0.52	7/27/11	8/1/11	2,746	5	500	1																						
2	Calaveras Overblow	22.50	7/27/11	8/15/11	118,800	20	6000																							
20	Calaveras E	38.80	12/19/11	9/17/12	204,864	273	750	82	3	3	219	8	3	3	219	2	6	88	2	6	131	2	3	165	2	2	219	3	2	219
19	Tuolumne	31.00	10/27/11	6/1/12	163,680	218	750	65	3	3	175	8	3	3	175	2	6	70	2	6	105	2	3	132	2	2	175	3	2	175
7	Stockton	15.44	7/27/11	12/9/11	81,523	136	600	33	3	3	109	8	3	3	109	2	6	22	2	6	87	2	3	82	2	2	109	3	2	109
8	Turlock	11.00	7/27/11	10/31/11	58,080	97	600	23	3	3	78	8	3	3	78	2	6	39	2	6	39	2	3	59	2	2	78	3	2	78
9	Modesto Urban	17.20	7/27/11	12/25/11	90,816	151	600	36	3	3	122	8	3	3	122															
18	Modesto Rural	11.21	7/27/11	10/13/11	59,189	79	750	24	3	3	64	8	3	3	64	2	6	45	2	6	19	2	3	48	2	2	64	3	2	64
17	Stockton South	26.40	9/26/11	3/29/12	139,392	186	750	56	3	3	149	8	3	3	149	2	6	75	2	6	74	2	3	112	2	2	149	3	2	149
16	Stockton-Milton	32.50	10/27/11	6/11/12	171,600	229	750	69	3	3	184	8	3	3	184	2	6	129	2	6	55	2	3	138	2	2	184	3	2	184
11	Merced	38.50	10/27/11	9/29/12	203,280	339	600	81	3	3	272	8	3	3	272	2	6	55	2	6	217	2	3	204	2	2	272	3	2	272
10	Madera	19.60	9/9/11	2/28/12	103,488	172	600	41	3	3	138	8	3	3	138	2	6	56	2	6	82	2	3	104	2	2	138	3	2	138
1	Fresno Overblow	56.36	7/27/11	9/14/11	297,581	50	6000																							
5	Fresno	31.53	9/26/11	6/29/12	166,478	277	600		3	3	222	8	3	3	222				2	6	222	2	3	167	2	2	222	3	2	222
23	Dinuba-Reedley	34.70	10/27/11	6/27/12	183,216	244	750	73	3	3	196	8	3	3	196	2	6	138	2	6	58	2	3	147	2	2	196	3	2	196
13	Visalia-Tulare	36.20	10/27/11	9/9/12	191,136	319	600	76	3	3	255	8	3	3	255	2	6	77	2	6	178	2	3	192	2	2	255	3	2	255
15	Waukena-Lemoore	46.70	12/19/11	11/11/12	246,576	329	750	99	3	3	264	8	3	3	264	2	6	159	2	6	105	2	3	198	2	2	264	3	2	264
30	Tulare-Waukena	14.10	9/9/11	12/17/11	74,448	99	750	30	3	3	80	8	3	3	80	2	6	56	2	6	24	2	3	60	2	2	80	3	2	80
3	Ducor Overblow	16.80	7/27/11	8/10/11	88,704	15	6000																							
14	Porterville-Tulare	29.90	9/26/11	6/15/12	157,872	263	600	63	3	3	211	8	3	3	211	2	6	85	2	6	126	2	3	159	2	2	211	3	2	211
22	Sandrini-Ducor	25.80	9/26/11	3/25/12	136,224	182	750	54	3	3	146	8	3	3	146	2	6	103	2	6	43	2	3	110	2	2	146	3	2	146
12	Hanford-Visalia	30.40	9/26/11	6/19/12	160,512	268	600	64	3	3	215	8	3	3	215	2	6	65	2	6	150	2	3	162	2	2	215	3	2	215
6	Bakersfield	37.80	10/27/11	9/23/12	199,584	333	600	80	3	3	267	8	3	3	267				2	6	267	2	4	201	2	2	267	3	2	267

* the map has Jackson overblow in Calaveras County but Jackson is in Amador County

Sect	Miles	Est	Map segment	Seg No	Segment	Route Miles	Const Start	Const Comp	Const Footage	Const Days	Ft/Day
6			1	29	Sutter+Colusa	26.35	9/26/11	5/14/12	139,128	232	600
6	140.00	$6	2	28	Yuba	22.65	9/9/11	2/15/12	119,592	159	750
6			3	27	Nevada	35.80	12/19/11	8/27/12	189,024	252	750
5			4	21	Red Mule North	16.70	9/9/11	1/4/12	88,176	118	750
5			4	24	Placer	26.02	9/26/11	3/27/12	137,386	183	750
6			4	26	El Dorado S	25.20	9/26/11	3/21/12	133,056	177	750
6			4	25	El Dorado N	30.00	10/27/11	5/25/12	158,400	211	750
5			4	4	Jackson Aerial Fiber*	0.52	7/27/11	8/1/11	2,746	5	500
5	135.54	$15	5	2	Calaveras Overblow	22.50	7/27/11	8/15/11	118,800	20	6000
5			5	20	Calaveras E	38.80	12/19/11	9/17/12	204,864	273	750
5			6	19	Tuolumne	31.00	10/27/11	6/1/12	163,680	218	750
4	113.75	$7	7	7	Stockton	15.44	7/27/11	12/9/11	81,523	136	600
4			7	8	Turlock	11.00	7/27/11	10/31/11	58,080	97	600
4			7	9	Modesto Urban	17.20	7/27/11	12/25/11	90,816	151	600
4			7	18	Modesto Rural	11.21	7/27/11	10/13/11	59,189	79	750
4			7	17	Stockton South	26.40	9/26/11	3/29/12	139,392	186	750
4			7	16	Stockton-Milton	32.50	10/27/11	6/11/12	171,600	229	750
3			8	11	Merced	38.50	10/27/11	9/29/12	203,280	339	600
3			9	10	Madera	19.60	9/9/11	2/28/12	103,488	172	600
3	145.99	$27	10	1	Fresno Overblow	56.36	7/27/11	9/14/11	297,581	50	6000
3			10	5	Fresno	31.53	9/26/11	6/29/12	166,478	277	600
1			11	23	Dinuba-Reedley	34.70	10/27/11	6/27/12	183,216	244	750
2			12	13	Visalia-Tulare	36.20	10/27/11	9/9/12	191,136	319	600
2			12	15	Waukena-Lemoore	46.70	12/19/11	11/11/12	246,576	329	750
2	127.40	$33	12	30	Tulare-Waukena	14.10	9/9/11	12/17/11	74,448	99	750
1	145.00	$27	13	3	Ducor Overblow	16.80	7/27/11	8/10/11	88,704	15	6000
1			13	14	Porterville-Tulare	29.90	9/26/11	6/15/12	157,872	263	600
1			13	22	Sandrini-Ducor	25.80	9/26/11	3/25/12	136,224	182	750
2			13	12	Hanford-Visalia	30.40	9/26/11	6/19/12	160,512	268	600
1			14	6	Bakersfield	37.80	10/27/11	9/23/12	199,584	333	600

Construction Scheduling									Directional Drilling										Fiber Blowing									
									Per Crew Requirements										Per Crew Requirements									
Orig Seg No	Segment	Route Miles	Const Start	Const Comp	Const Footage	Const Days	Ft/Day	Boxes	Crews	Days	Workers	Hrs/day Each	Pickup/Utility Truck	Hrs/Day Each	Boring Rig	Hrs/Day Each	Backhoe	Hrs/Day Each	Crews	Days	Workers	Hrs/day Each	Pickup/Utility Truck	Hrs/Day Each	Air Compressor	Hrs/Day Each	Backhoe	Hrs/Day Each
29	Sutter+Colusa	26.35	9/26/11	5/14/12	139,128	232	600	56	2	131	3	8	2	2	1	6	3	1.5	3	24	3	8	2	2	1	6	3	1.5
28	Yuba	22.65	9/9/11	2/15/12	119,592	159	750	48	1	90	3	8	2	2	1	6	3	1.5	3	16	3	8	2	2	1	6	3	1.5
27	Nevada	35.80	12/19/11	8/27/12	189,024	252	750	76	1	142	3	8	2	2	1	6	3	1.5	3	26	3	8	2	2	1	6	3	1.5
21	Red Mule North	16.70	9/9/11	1/4/12	88,176	118	750	35	1	67	3	8	2	2	1	6	3	1.5	3	12	3	8	2	2	1	6	3	1.5
24	Placer	26.02	9/26/11	3/27/12	137,386	183	750	55	1	103	3	8	2	2	1	6	3	1.5	3	19	3	8	2	2	1	6	3	1.5
26	El Dorado S	25.20	9/26/11	3/21/12	133,056	177	750	53	1	100	3	8	2	2	1	6	3	1.5	3	18	3	8	2	2	1	6	3	1.5
25	El Dorado N	30.00	10/27/11	5/25/12	158,400	211	750	63	1	119	3	8	2	2	1	6	3	1.5	3	22	3	8	2	2	1	6	3	1.5
4	Jackson Aerial Fiber	0.52	7/27/11	8/1/11	2,746	5	500	1																				
2	Calaveras Overblow	22.50	7/27/11	8/15/11	118,800	20	6000												3	16	3	8	2	2	1	6	3	1.5
20	Calaveras E	38.80	12/19/11	9/17/12	204,864	273	750	82	1	154	3	8	2	2	1	6	3	1.5	3	28	3	8	2	2	1	6	3	1.5
19	Tuolumne	31.00	10/27/11	6/1/12	163,680	218	750	65	1	123	3	8	2	2	1	6	3	1.5	3	22	3	8	2	2	1	6	3	1.5
7	Stockton	15.44	7/27/11	12/9/11	81,523	136	600	33	2	77	3	8	2	2	1	6	3	1.5	3	14	3	8	2	2	1	6	3	1.5
8	Turlock	11.00	7/27/11	10/31/11	58,080	97	600	23	2	55	3	8	2	2	1	6	3	1.5	3	10	3	8	2	2	1	6	3	1.5
9	Modesto Urban	17.20	7/27/11	12/25/11	90,816	151	600	36	2	86	3	8	2	2	1	6	3	1.5	3	16	3	8	2	2	1	6	3	1.5
18	Modesto Rural	11.21	7/27/11	10/13/11	59,189	79	750	24	1	45	3	8	2	2	1	6	3	1.5	3	8	3	8	2	2	1	6	3	1.5
17	Stockton South	26.40	9/26/11	3/29/12	139,392	186	750	56	1	105	3	8	2	2	1	6	3	1.5	3	19	3	8	2	2	1	6	3	1.5
16	Stockton-Milton	32.50	10/27/11	6/11/12	171,600	229	750	69	1	129	3	8	2	2	1	6	3	1.5	3	23	3	8	2	2	1	6	3	1.5
11	Merced	38.50	10/27/11	9/29/12	203,280	339	600	81	2	191	3	8	2	2	1	6	3	1.5	3	34	3	8	2	2	1	6	3	1.5
10	Madera	19.60	9/9/11	2/28/12	103,488	172	600	41	2	97	3	8	2	2	1	6	3	1.5	3	18	3	8	2	2	1	6	3	1.5
1	Fresno Overblow	56.36	7/27/11	9/14/11	297,581	50	6000												3	40	3	8	2	2	1	6	3	1.5
5	Fresno	31.53	9/26/11	6/29/12	166,478	277	600		2	156	3	8	2	2	1	6	3	1.5	3	28	3	8	2	2	1	6	3	1.5
23	Dinuba-Reedley	34.70	10/27/11	6/27/12	183,216	244	750	73	2	138	3	8	2	2	1	6	3	1.5	3	25	3	8	2	2	1	6	3	1.5
13	Visalia-Tulare	36.20	10/27/11	9/9/12	191,136	319	600	76	2	179	3	8	2	2	1	6	3	1.5	3	32	3	8	2	2	1	6	3	1.5
15	Waukena-Lemoore	46.70	12/19/11	11/11/12	246,576	329	750	99	2	185	3	8	2	2	1	6	3	1.5	3	33	3	8	2	2	1	6	3	1.5
30	Tulare-Waukena	14.10	9/9/11	12/17/11	74,448	99	750	30	1	56	3	8	2	2	1	6	3	1.5	3	10	3	8	2	2	1	6	3	1.5
3	Ducor Overblow	16.80	7/27/11	8/10/11	88,704	15	6000												3	12	3	8	2	2	1	6	3	1.5
14	Porterville-Tulare	29.90	9/26/11	6/15/12	157,872	263	600	63	2	148	3	8	2	2	1	6	3	1.5	3	27	3	8	2	2	1	6	3	1.5
22	Sandrini-Ducor	25.80	9/26/11	3/25/12	136,224	182	750	54	1	103	3	8	2	2	1	6	3	1.5	3	19	3	8	2	2	1	6	3	1.5
12	Hanford-Visalia	30.40	9/26/11	6/19/12	160,512	268	600	64	2	151	3	8	2	2	1	6	3	1.5	3	27	3	8	2	2	1	6	3	1.5
6	Bakersfield	37.80	10/27/11	9/23/12	199,584	333	600	80	2	187	3	8	2	2	1	6	3	1.5	3	34	3	8	2	2	1	6	3	1.5

* the map has Jackson overblow in Calaveras County but Jackson is in Amador County

Sect	Miles	Est	Map segment	Seg No	Segment	Route Miles	Const Start	Const Comp	Const Footage	Const Days	Ft/Day
6			1	29	Sutter+Colusa	26.35	9/26/11	5/14/12	139,128	232	600
6	140.00	$6	2	28	Yuba	22.65	9/9/11	2/15/12	119,592	159	750
6			3	27	Nevada	35.80	12/19/11	8/27/12	189,024	252	750
5			4	21	Red Mule North	16.70	9/9/11	1/4/12	88,176	118	750
5			4	24	Placer	26.02	9/26/11	3/27/12	137,386	183	750
6			4	26	El Dorado S	25.20	9/26/11	3/21/12	133,056	177	750
6			4	25	El Dorado N	30.00	10/27/11	5/25/12	158,400	211	750
5			4	4	Jackson Aerial Fiber*	0.52	7/27/11	8/1/11	2,746	5	500
5	135.54	$15	5	2	Calaveras Overblow	22.50	7/27/11	8/15/11	118,800	20	6000
5			5	20	Calaveras E	38.80	12/19/11	9/17/12	204,864	273	750
5			6	19	Tuolumne	31.00	10/27/11	6/1/12	163,680	218	750
4	113.75	$7	7	7	Stockton	15.44	7/27/11	12/9/11	81,523	136	600
4			7	8	Turlock	11.00	7/27/11	10/31/11	58,080	97	600
4			7	9	Modesto Urban	17.20	7/27/11	12/25/11	90,816	151	600
4			7	18	Modesto Rural	11.21	7/27/11	10/13/11	59,189	79	750
4			7	17	Stockton South	26.40	9/26/11	3/29/12	139,392	186	750
4			7	16	Stockton-Milton	32.50	10/27/11	6/11/12	171,600	229	750
3			8	11	Merced	38.50	10/27/11	9/29/12	203,280	339	600
3			9	10	Madera	19.60	9/9/11	2/28/12	103,488	172	600
3	145.99	$27	10	1	Fresno Overblow	56.36	7/27/11	9/14/11	297,581	50	6000
3			10	5	Fresno	31.53	9/26/11	6/29/12	166,478	277	600
1			11	23	Dinuba-Reedley	34.70	10/27/11	6/27/12	183,216	244	750
2			12	13	Visalia-Tulare	36.20	10/27/11	9/9/12	191,136	319	600
2			12	15	Waukena-Lemoore	46.70	12/19/11	11/11/12	246,576	329	750
2	127.40	$33	12	30	Tulare-Waukena	14.10	9/9/11	12/17/11	74,448	99	750
1	145.00	$27	13	3	Ducor Overblow	16.80	7/27/11	8/10/11	88,704	15	6000
1			13	14	Porterville-Tulare	29.90	9/26/11	6/15/12	157,872	263	600
1			13	22	Sandrini-Ducor	25.80	9/26/11	3/25/12	136,224	182	750
2			13	12	Hanford-Visalia	30.40	9/26/11	6/19/12	160,512	268	600
1			14	6	Bakersfield	37.80	10/27/11	9/23/12	199,584	333	600

Construction Scheduling									Aerial Fiber Installation								Fiber Splicing					
									Per Crew Requirements								Per Crew Requirements					
Orig Seg No	Segment	Route Miles	Const Start	Const Comp	Const Footage	Const Days	Ft/Day	Boxes	Crews	Days	Workers	Hrs/day Each	Pickup/Utility Truck	Hrs/Day Each	Bucket Truck	Hrs/Day Each	Crews	Days	Workers	Hrs/day Each	Pickup/Utility Truck	Hrs/Day Each
29	Sutter+Colusa	26.35	9/26/11	5/14/12	139,128	232	600	56									2	24	1	8	1	3
28	Yuba	22.65	9/9/11	2/15/12	119,592	159	750	48									2	16	1	8	1	3
27	Nevada	35.80	12/19/11	8/27/12	189,024	252	750	76									2	26	1	8	1	3
21	Red Mule North	16.70	9/9/11	1/4/12	88,176	118	750	35									2	12	1	8	1	3
24	Placer	26.02	9/26/11	3/27/12	137,386	183	750	55									2	19	1	8	1	3
26	El Dorado S	25.20	9/26/11	3/21/12	133,056	177	750	53									2	18	1	8	1	3
25	El Dorado N	30.00	10/27/11	5/25/12	158,400	211	750	63									2	22	1	8	1	3
4	Jackson Aerial Fiber	0.52	7/27/11	8/1/11	2,746	5	500	1	1	4	3	8	1	2	1	6	1	1	1	8	1	3
2	Calaveras Overblow	22.50	7/27/11	8/15/11	118,800	20	6000										2	2	1	8	1	3
20	Calaveras E	38.80	12/19/11	9/17/12	204,864	273	750	82									2	28	1	8	1	3
19	Tuolumne	31.00	10/27/11	6/1/12	163,680	218	750	65									2	22	1	8	1	3
7	Stockton	15.44	7/27/11	12/9/11	81,523	136	600	33									2	14	1	8	1	3
8	Turlock	11.00	7/27/11	10/31/11	58,080	97	600	23									2	10	1	8	1	3
9	Modesto Urban	17.20	7/27/11	12/25/11	90,816	151	600	36									2	16	1	8	1	3
18	Modesto Rural	11.21	7/27/11	10/13/11	59,189	79	750	24									2	8	1	8	1	3
17	Stockton South	26.40	9/26/11	3/29/12	139,392	186	750	56									2	19	1	8	1	3
16	Stockton-Milton	32.50	10/27/11	6/11/12	171,600	229	750	69									2	23	1	8	1	3
11	Merced	38.50	10/27/11	9/29/12	203,280	339	600	81									2	34	1	8	1	3
10	Madera	19.60	9/9/11	2/28/12	103,488	172	600	41									2	18	1	8	1	3
1	Fresno Overblow	56.36	7/27/11	9/14/11	297,581	50	6000										2	5	1	8	1	3
5	Fresno	31.53	9/26/11	6/29/12	166,478	277	600										2	28	1	8	1	3
23	Dinuba-Reedley	34.70	10/27/11	6/27/12	183,216	244	750	73									2	25	1	8	1	3
13	Visalia-Tulare	36.20	10/27/11	9/9/12	191,136	319	600	76									2	32	1	8	1	3
15	Waukena-Lemoore	46.70	12/19/11	11/11/12	246,576	329	750	99									2	33	1	8	1	3
30	Tulare-Waukena	14.10	9/9/11	12/17/11	74,448	99	750	30									2	10	1	8	1	3
3	Ducor Overblow	16.80	7/27/11	8/10/11	88,704	15	6000										2	2	1	8	1	3
14	Porterville-Tulare	29.90	9/26/11	6/15/12	157,872	263	600	63									2	27	1	8	1	3
22	Sandrini-Ducor	25.80	9/26/11	3/25/12	136,224	182	750	54									2	19	1	8	1	3
12	Hanford-Visalia	30.40	9/26/11	6/19/12	160,512	268	600	64									2	27	1	8	1	3
6	Bakersfield	37.80	10/27/11	9/23/12	199,584	333	600	80									2	34	1	8	1	3

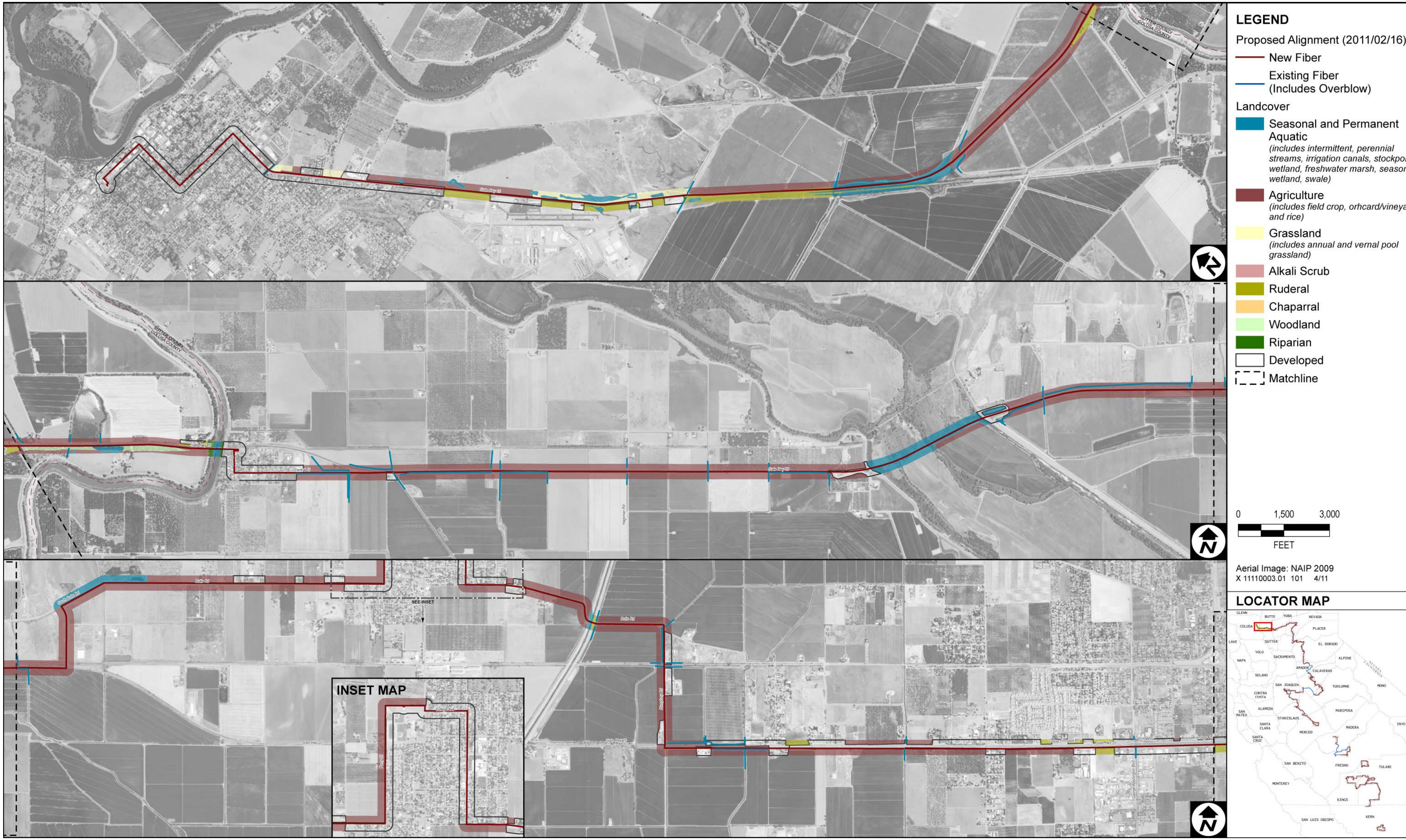
* the map has Jackson overblow in Calaveras County but Jackson is in Amador County

Primarily Urban Construction
Primarily Rural Construction
Overblow in Existing Conduit
Aerial Fiber Construction

Sites Construction & Installation						Construction Crew Requirements												
							Per Crew Requirements											
Seg No	Sites	Sites	Const Start	Const	Const	Crews	Workers	Days	Truck/	Mini	Days	Hours	Backhoe	Days	Hours	Dump	Days	Hours
1	Tower Site In	12	7/30/11	10/22/11	84	3	2	3.5	1									
2	WilTel Site In	9	7/30/11	8/26/11	27	1	2	13.5	1									
3	Level3 Site In	8	7/30/11	8/23/11	24	1	2	12	1									
4	CSU Site Ins	3	7/30/11	8/5/11	6	1	1	6	1									
5	CC Site Insta	13	7/30/11	8/25/11	26	1	1	26	1									
6	COE 10G Sit	1	7/30/11	8/1/11	2	1	1	2	1									
7	COE 1G Site	21	7/30/11	9/10/11	42	1	1	42	1									
8	Library Site I	20	7/30/11	9/8/11	40	1	1	40	1									
9	Public Safety	6	7/30/11	8/11/11	12	1	1	12	1									
10	Cabinet Site	52	7/22/11	7/20/12	364	3	3	121	2	1	121	3	1	121	2	1	121	1
11	Volcano Fibe	3	7/30/11	8/8/11	9	1	1	9.0	1									

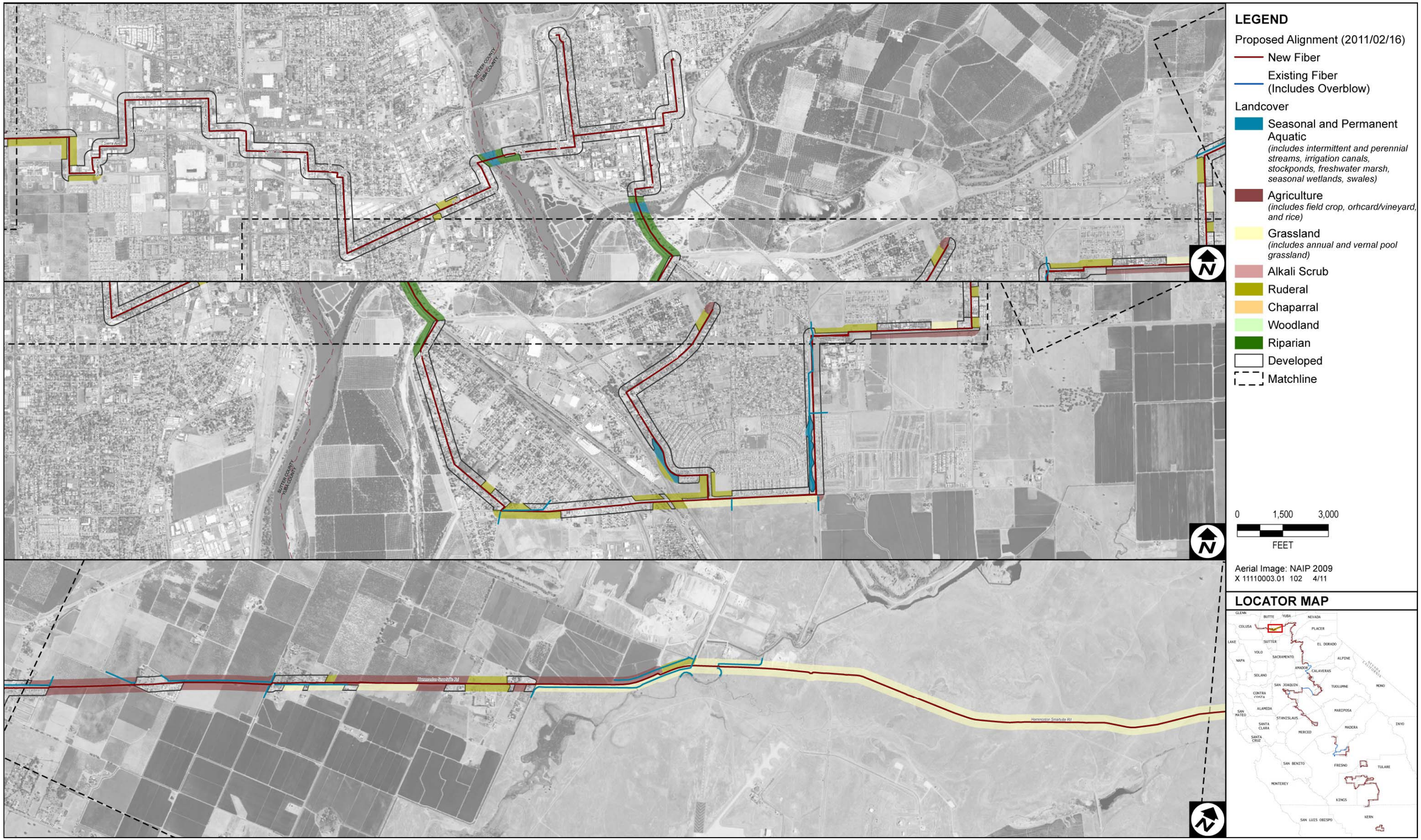
APPENDIX C

Land Cover Types Along the Proposed Route



Source: CVIN 2010, ESRI 2005

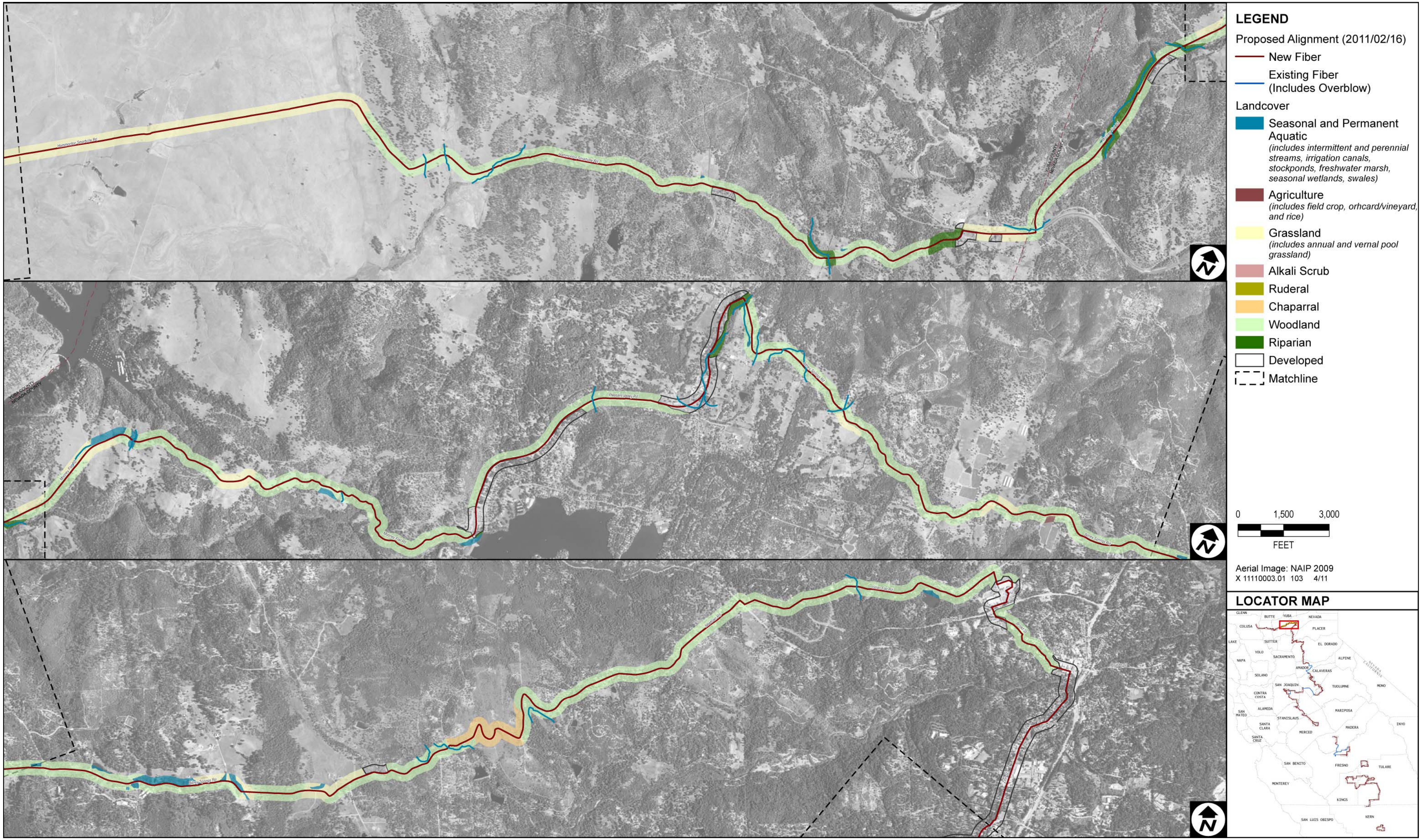
Section 6, Segment 29 Sutter-Colusa
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment **Map 1**



Source: CVIN 2010, ESRI 2005

Section 6, Segment 28 Yuba and Segment 29 Sutter-Colusa
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

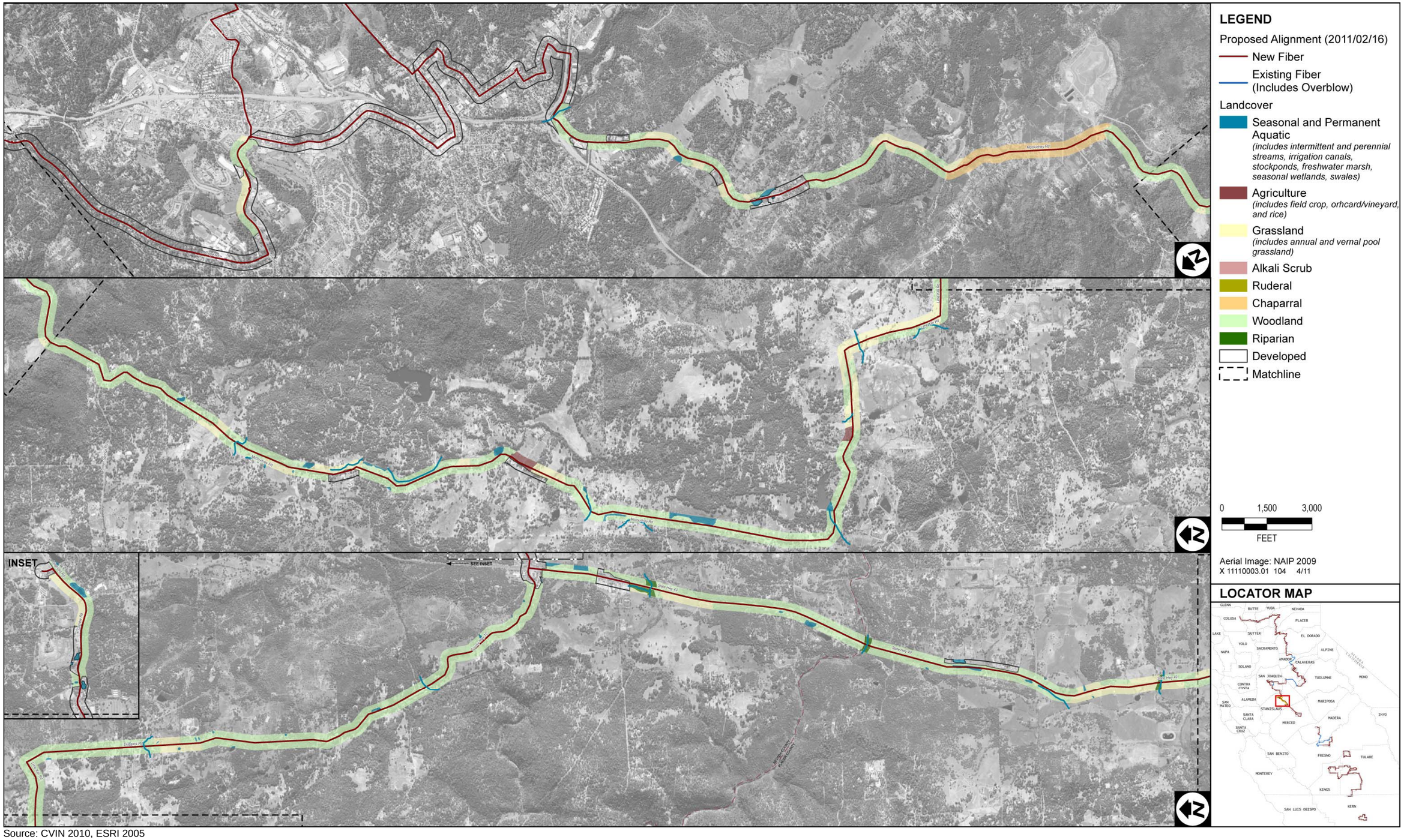
Map 2



Source: CVIN 2010, ESRI 2005

Section 6, Segment 27 Nevada and Segment 28 Yuba
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

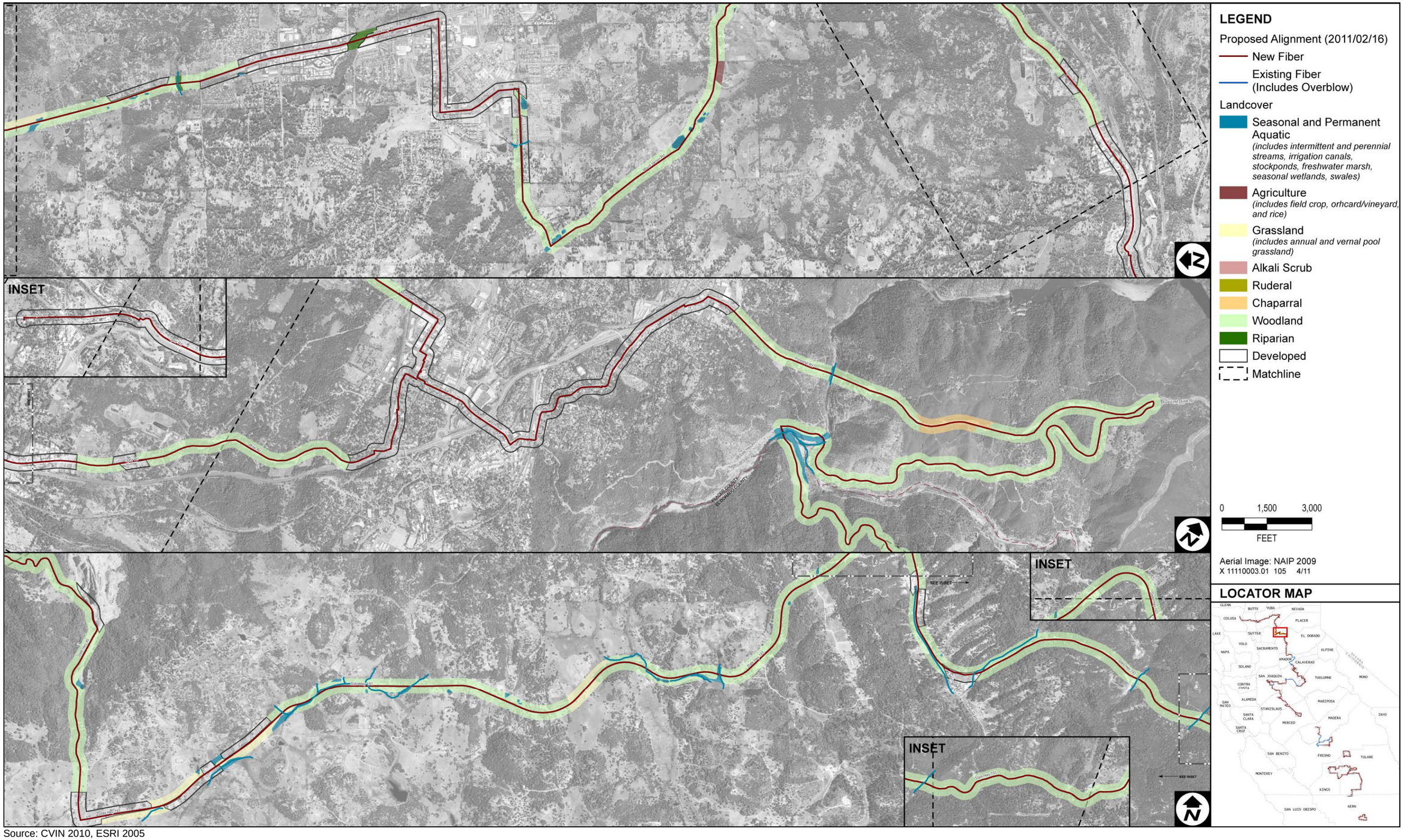
Map 3



Source: CVIN 2010, ESRI 2005

Section 6, Segment 24 Placer, Segment 27 Nevada, and Segment 28 Yuba
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 4



Source: CVIN 2010, ESRI 2005

Section 5, Segment 24 Placer and Section 6, Segment 25 El Dorado North
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 5

INSET

SEE INSET

LEGEND

Proposed Alignment (2011/02/16)

- New Fiber
- Existing Fiber (Includes Overblow)

Landcover

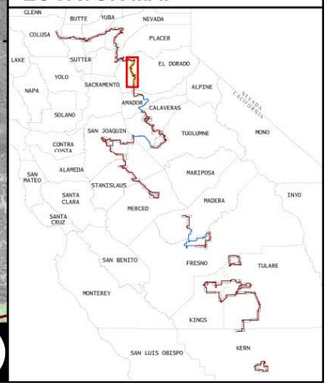
- Seasonal and Permanent Aquatic *(includes intermittent and perennial streams, irrigation canals, stockponds, freshwater marsh, seasonal wetlands, swales)*
- Agriculture *(includes field crop, orhcard/vineyard, and rice)*
- Grassland *(includes annual and vernal pool grassland)*
- Alkali Scrub
- Ruderal
- Chaparral
- Woodland
- Riparian
- Developed
- Matchline

0 1,500 3,000

FEET

Aerial Image: NAIP 2009
X 11110003.01 106 4/11

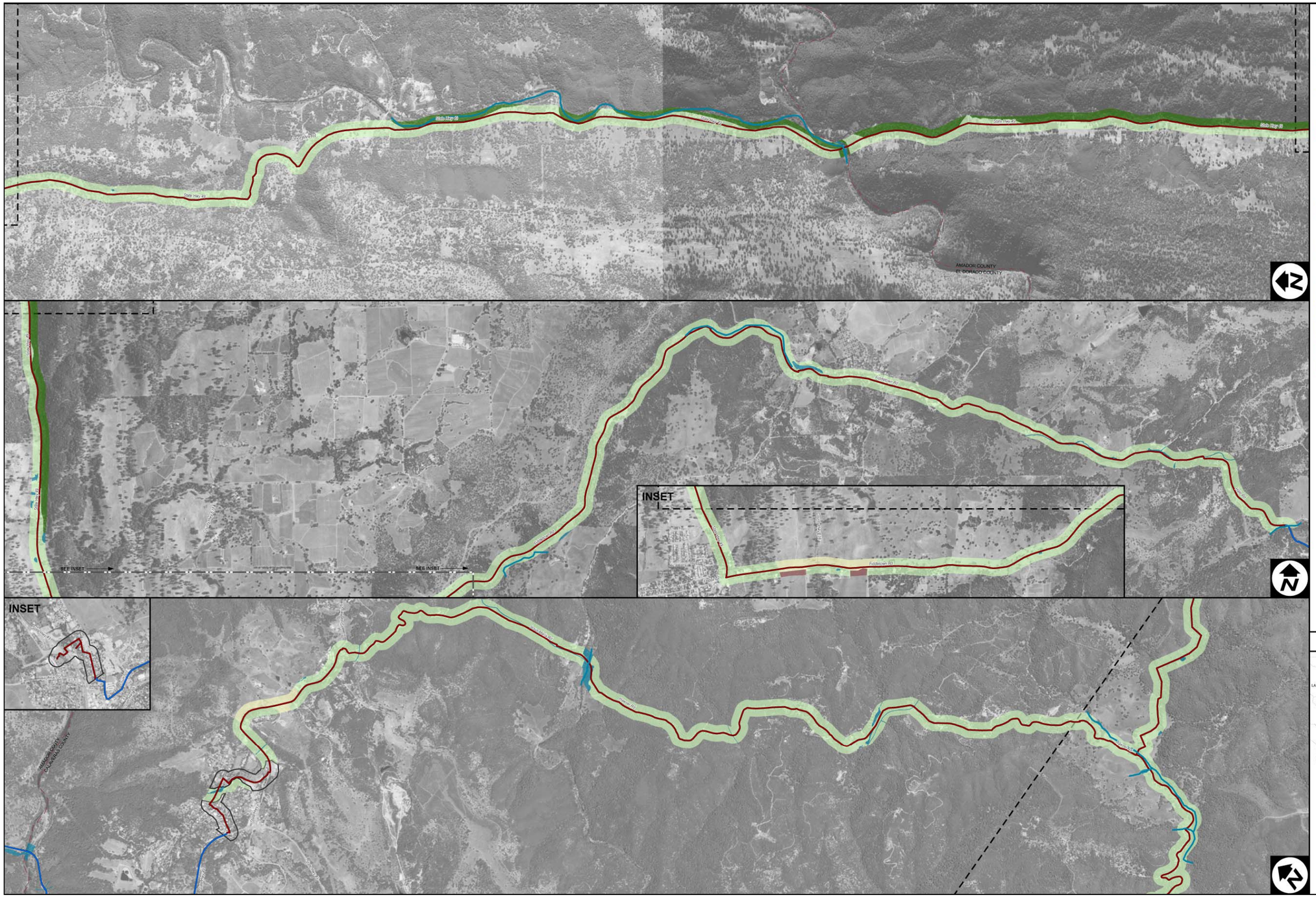
LOCATOR MAP



Source: CVIN 2010, ESRI 2005

Section 6, Segment 25 El Dorado North and Segment 26 El Dorado South
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 6



LEGEND

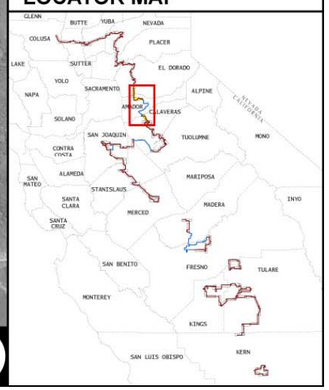
Proposed Alignment (2011/02/16)
- New Fiber
- Existing Fiber (Includes Overblow)

Landcover
- Seasonal and Permanent Aquatic *(includes intermittent and perennial streams, irrigation canals, stockponds, freshwater marsh, seasonal wetlands, swales)*
- Agriculture *(includes field crop, orhcard/vineyard, and rice)*
- Grassland *(includes annual and vernal pool grassland)*
- Alkali Scrub
- Ruderal
- Chaparral
- Woodland
- Riparian
- Developed
- Matchline

0 1,500 3,000
FEET

Aerial Image: NAIP 2009
X 11110003.01 107 4/11

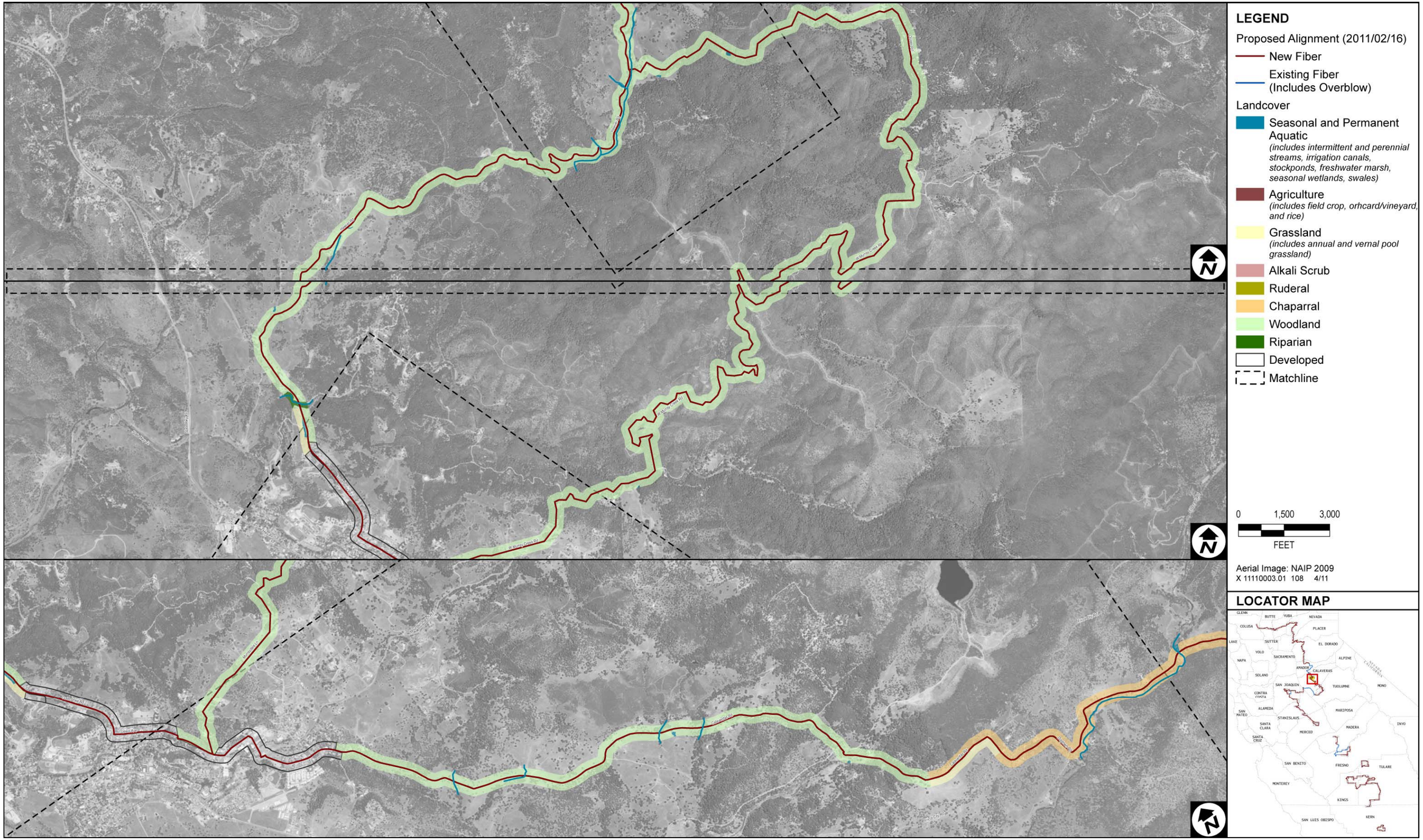
LOCATOR MAP



Source: CVIN 2010, ESRI 2005

Section 5, Segment 20 Calaveras E, Segment 21 Red Mule North, and Section 6, Segment 26 El Dorado North
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 7



Source: CVIN 2010, ESRI 2005

Section 4, Segment 9 Modesto Urban, Section 5, Segment 2 Calaveras Overblow, and Segment 20 Calaveras E.
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 8

Source: CVIN 2010, ESRI 2005

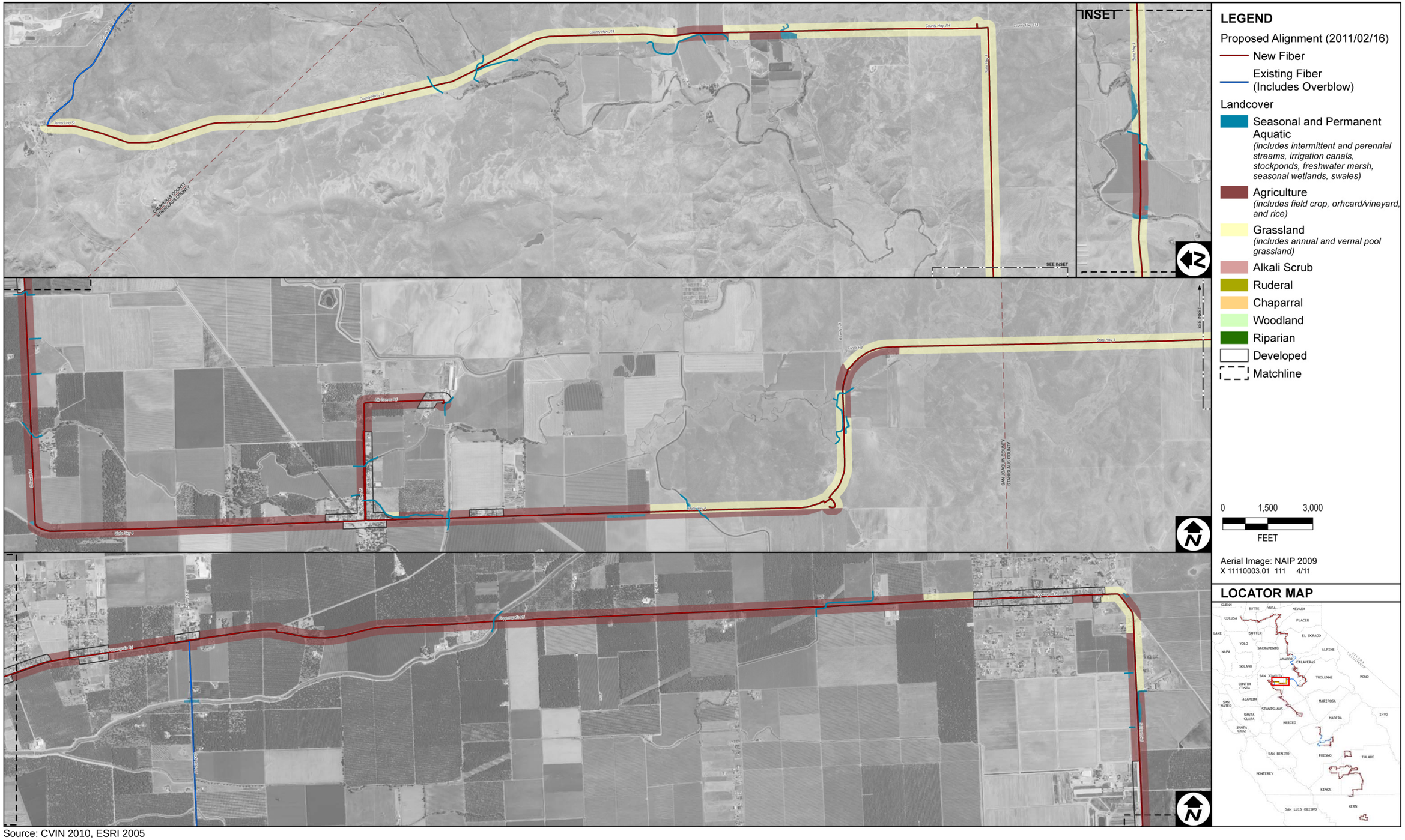
Section 4, Segment 9 Modesto Urban, Section 5, Segment 2 Calaveras Overblow, Segment 19 Tuolumne, and Segment 20 Calaveras E
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 9

Source: CVIN 2010, ESRI 2005

Section 4, Segment 9 Modesto Urban, Section 5, Segment 2 Calaveras Overblow, Segment 19 Tuolumne, and Segment 20 Calaveras E
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

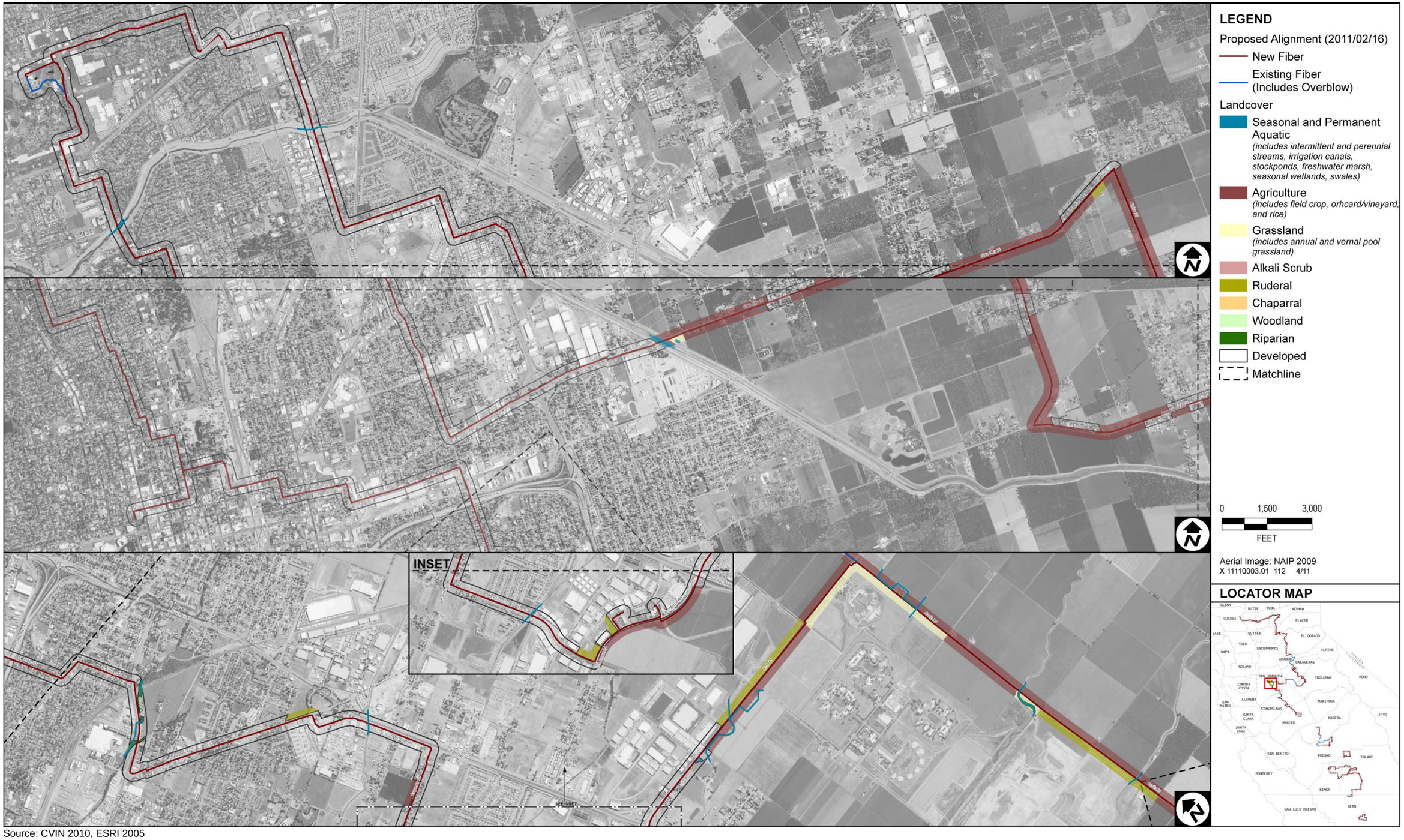
Map 10



Source: CVIN 2010, ESRI 2005

Section 4, Segment 9 Modesto Urban, and Segment 16 Stockton-Milton, Section 5, Segment 2 Calaveras Overblow
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

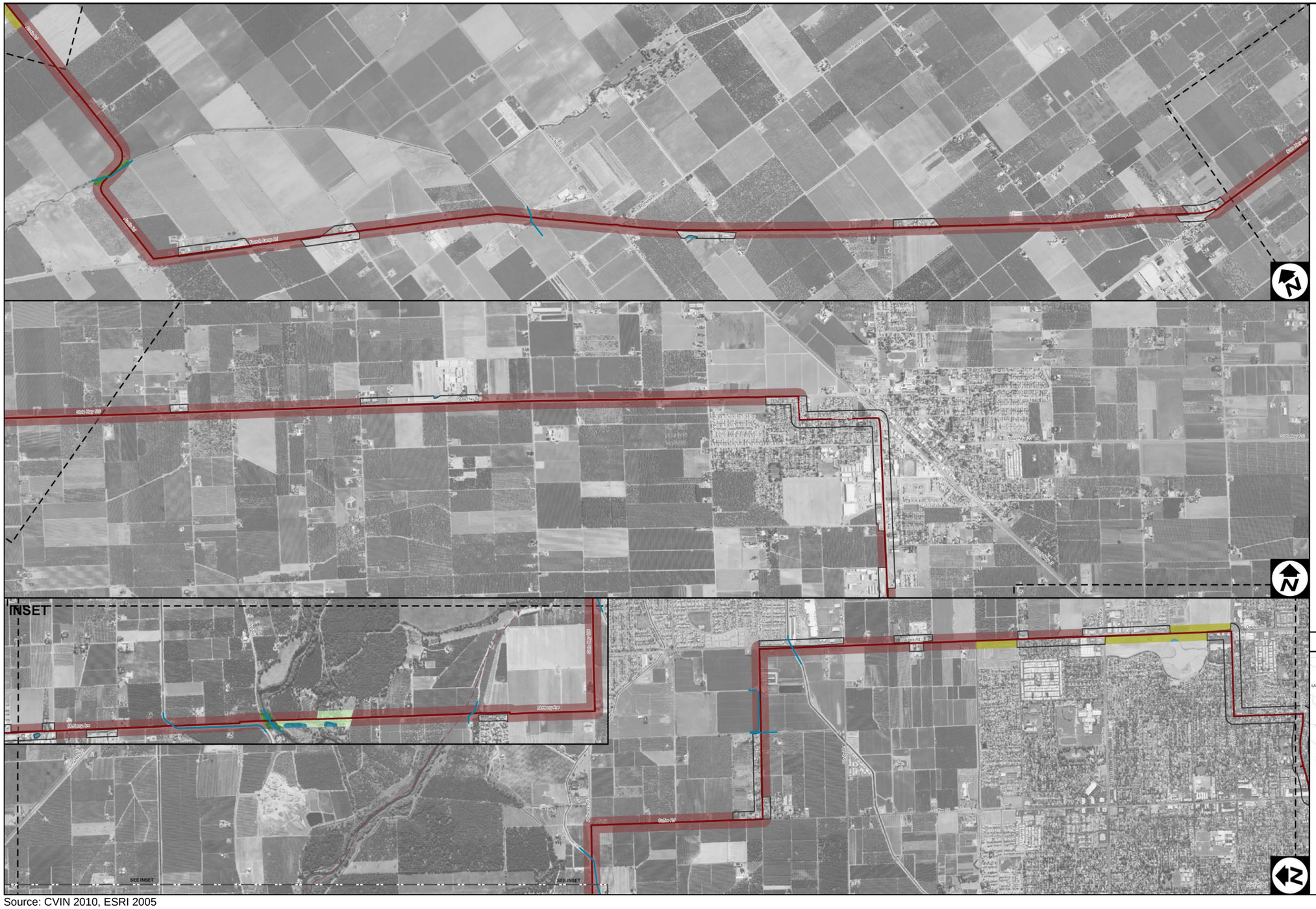
Map 11



Source: CVIN 2010, ESRI 2005

Section 4, Segment 16 Stockton-Milton, Segment 17 Stockton-South, Segment 7 Stockton, and Segment 9 Modesto Urban
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

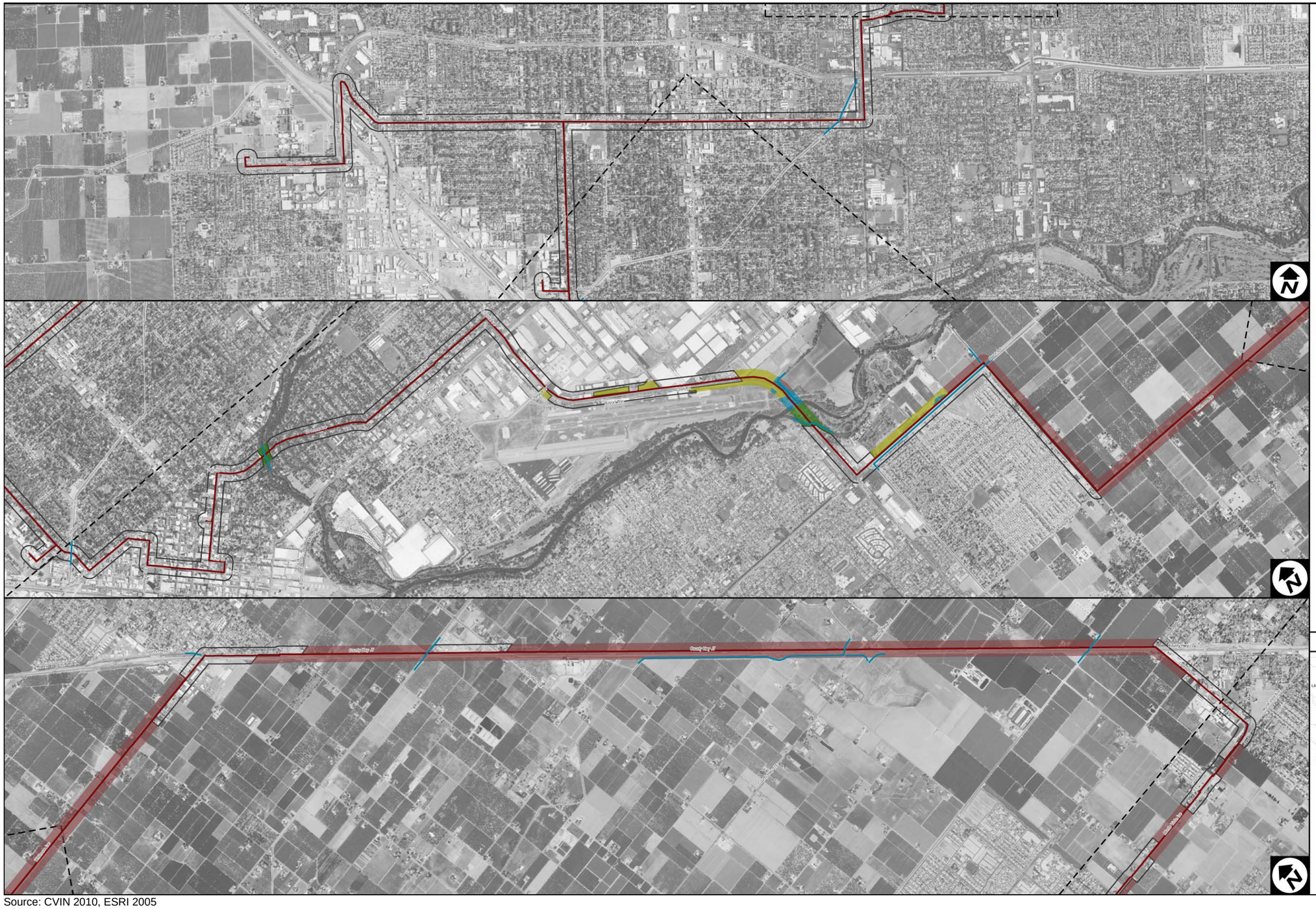
Map 12



Source: CVIN 2010, ESRI 2005

Section 4, Segment 9 Modesto Urban, and Segment 17 Stockton-South
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

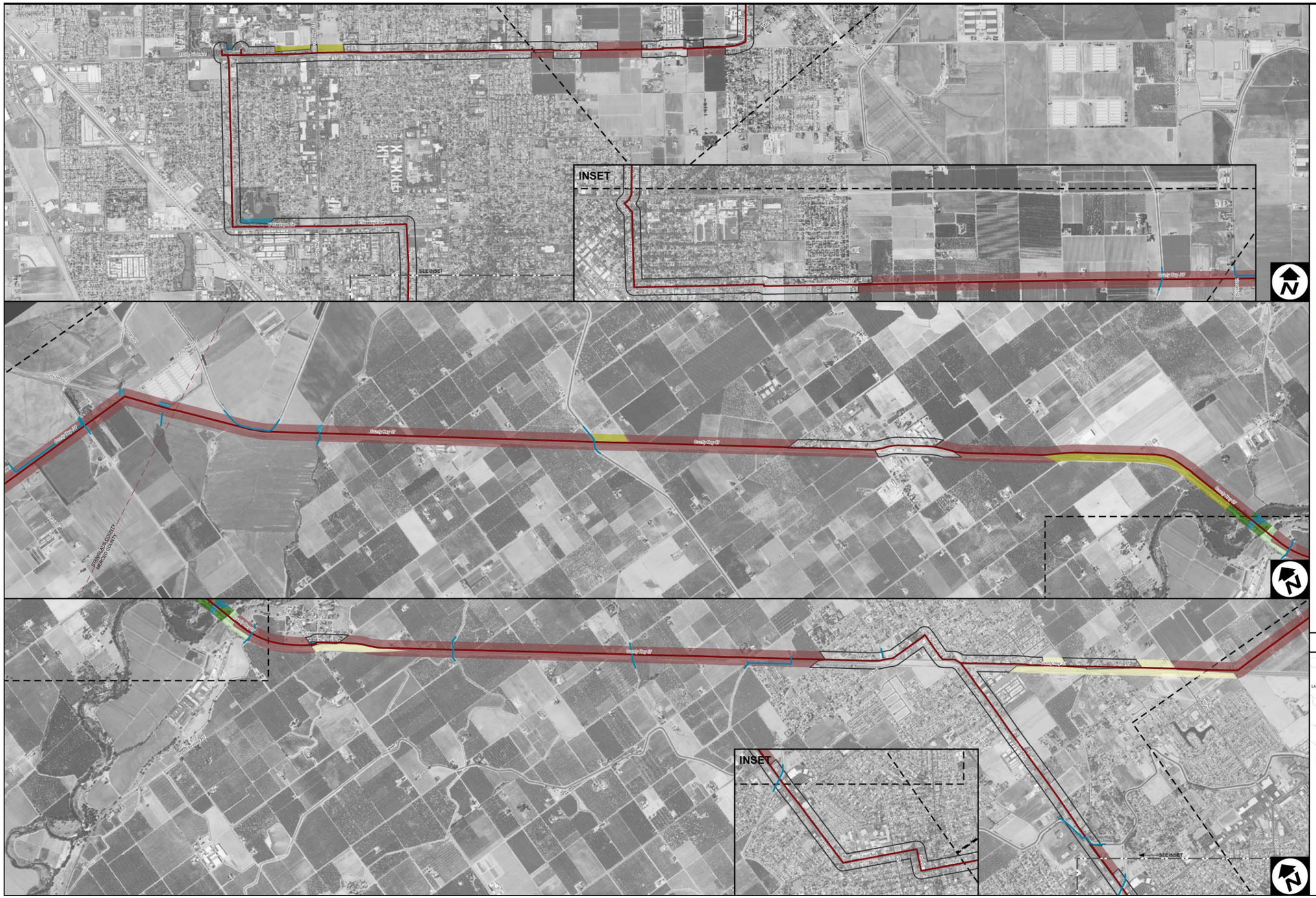
Map 13



Source: CVIN 2010, ESRI 2005

Section 4, Segment 8 Turlock, Segment 9 Modesto Urban, and Segment 18 Modesto Rural
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 14



LEGEND

Proposed Alignment (2011/02/16)

- New Fiber
- Existing Fiber (Includes Overblow)

Landcover

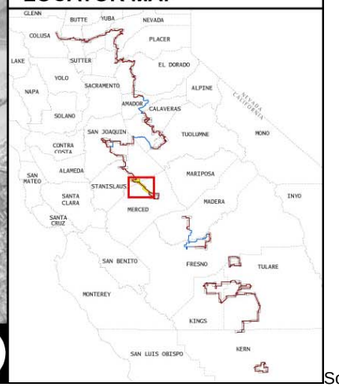
- Seasonal and Permanent Aquatic *(includes intermittent and perennial streams, irrigation canals, stockponds, freshwater marsh, seasonal wetlands, swales)*
- Agriculture *(includes field crop, orhcard/vineyard, and rice)*
- Grassland *(includes annual and vernal pool grassland)*
- Alkali Scrub
- Ruderal
- Chaparral
- Woodland
- Riparian
- Developed
- Matchline

0 1,500 3,000

FEET

Aerial Image: NAIP 2009
X 11110003.01 115 4/11

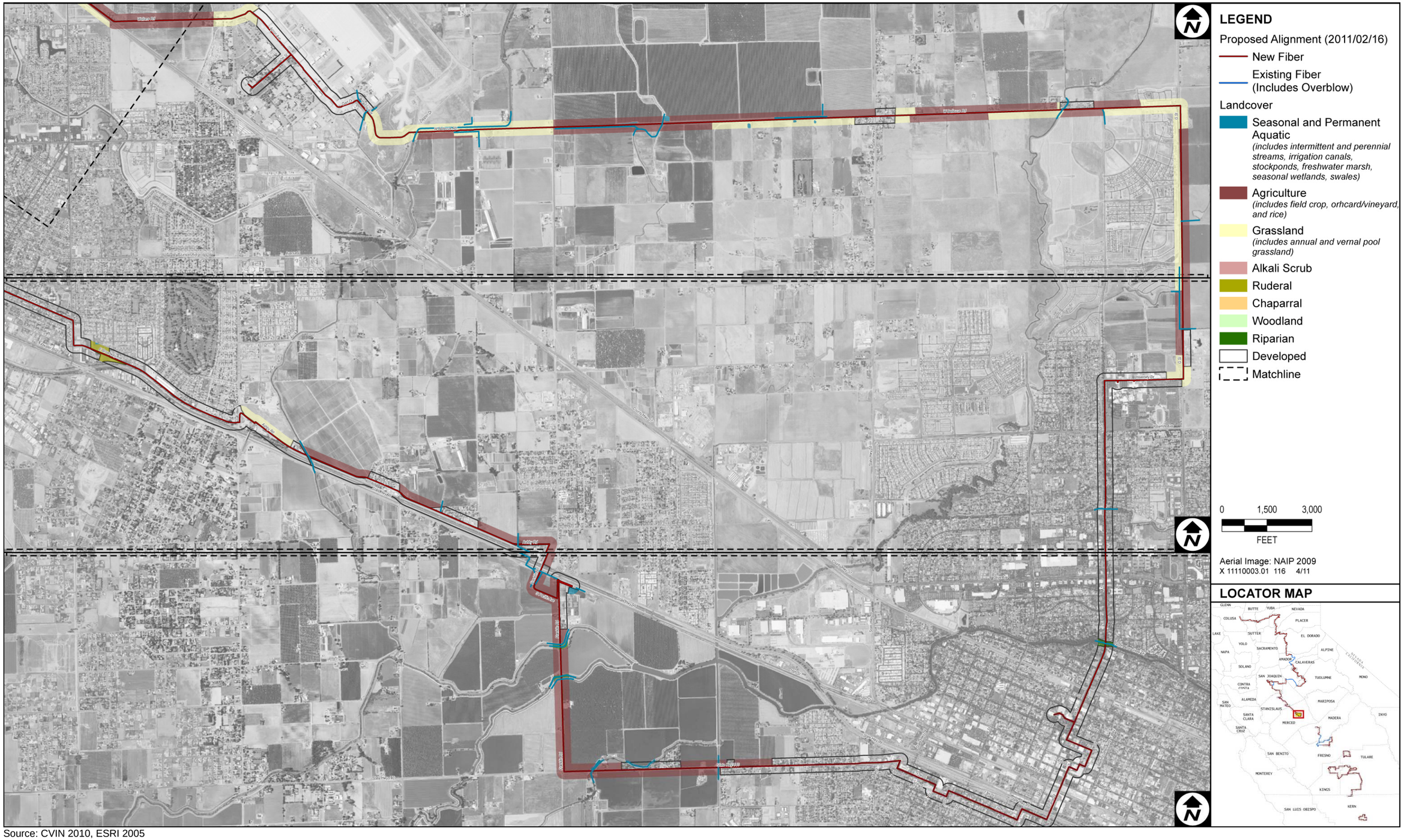
LOCATOR MAP



Source: CVIN 2010, ESRI 2005

Section 3, Segment 11 Merced, and Section 4, Segment 8 Turlock
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 15



Source: CVIN 2010, ESRI 2005

Section 3, Segment 11 Merced
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 16

INSET

SEE INSET

INSET

SEE INSET

MADERA COUNTY
FRESNO COUNTY

LEGEND

Proposed Alignment (2011/02/16)

- New Fiber
- Existing Fiber (Includes Overblow)

Landcover

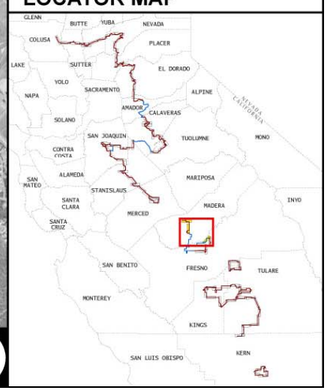
- Seasonal and Permanent Aquatic *(includes intermittent and perennial streams, irrigation canals, stockponds, freshwater marsh, seasonal wetlands, swales)*
- Agriculture *(includes field crop, orhcard/vineyard, and rice)*
- Grassland *(includes annual and vernal pool grassland)*
- Alkali Scrub
- Ruderal
- Chaparral
- Woodland
- Riparian
- Developed
- Matchline

0 1,500 3,000

FEET

Aerial Image: NAIP 2009
X 11110003.01 117 4/11

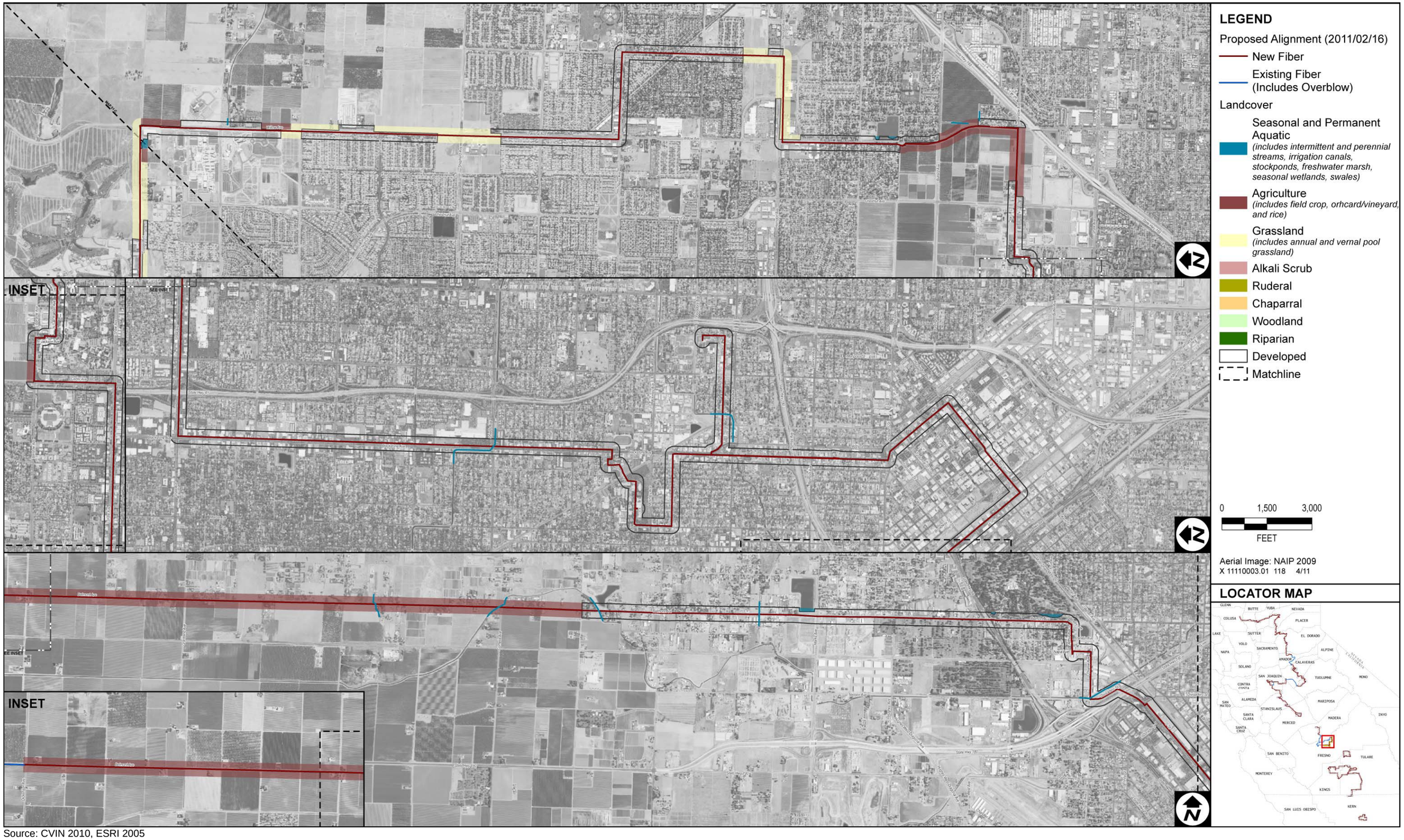
LOCATOR MAP



Source: CVIN 2010, ESRI 2005

Section 3, Segment 1 Fresno Overblow, Segment 5 Fresno, and Segment 10 Madera
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

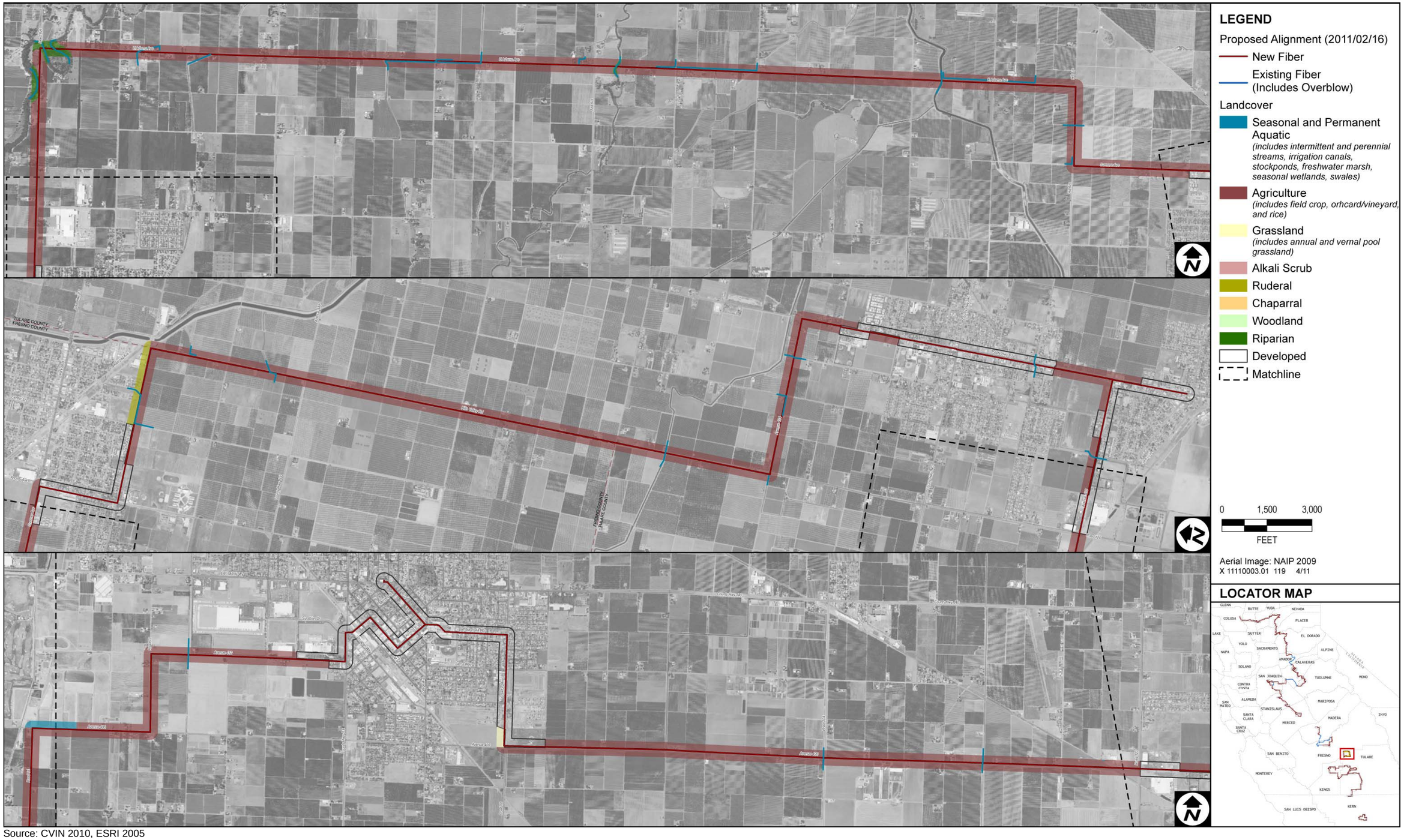
Map 17



Source: CVIN 2010, ESRI 2005

Section 3, Segment 1 Fresno Overblow, and Segment 5 Fresno
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

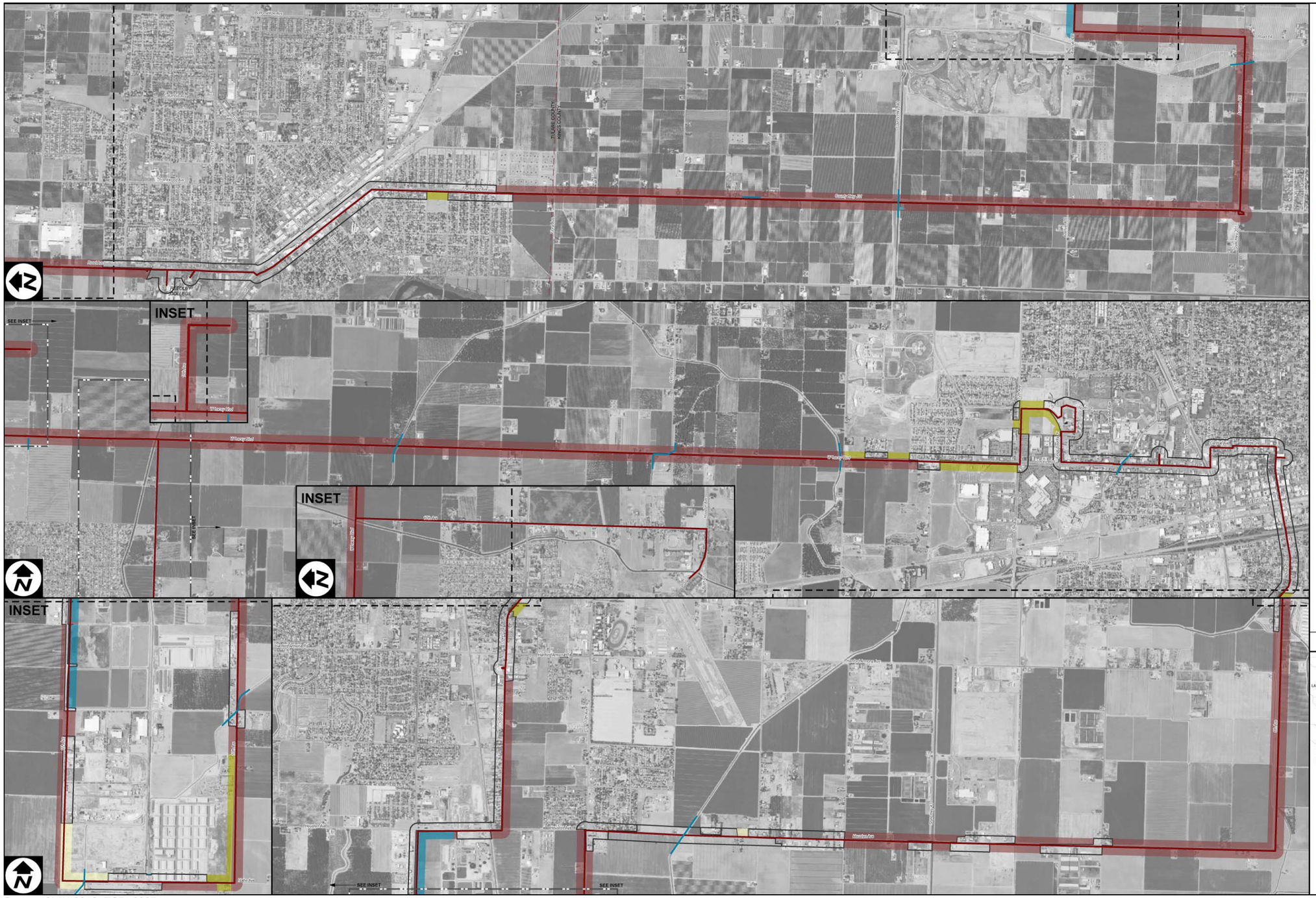
Map 18



Source: CVIN 2010, ESRI 2005

Section 1, Segment 23 Dinuba-Reedley
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

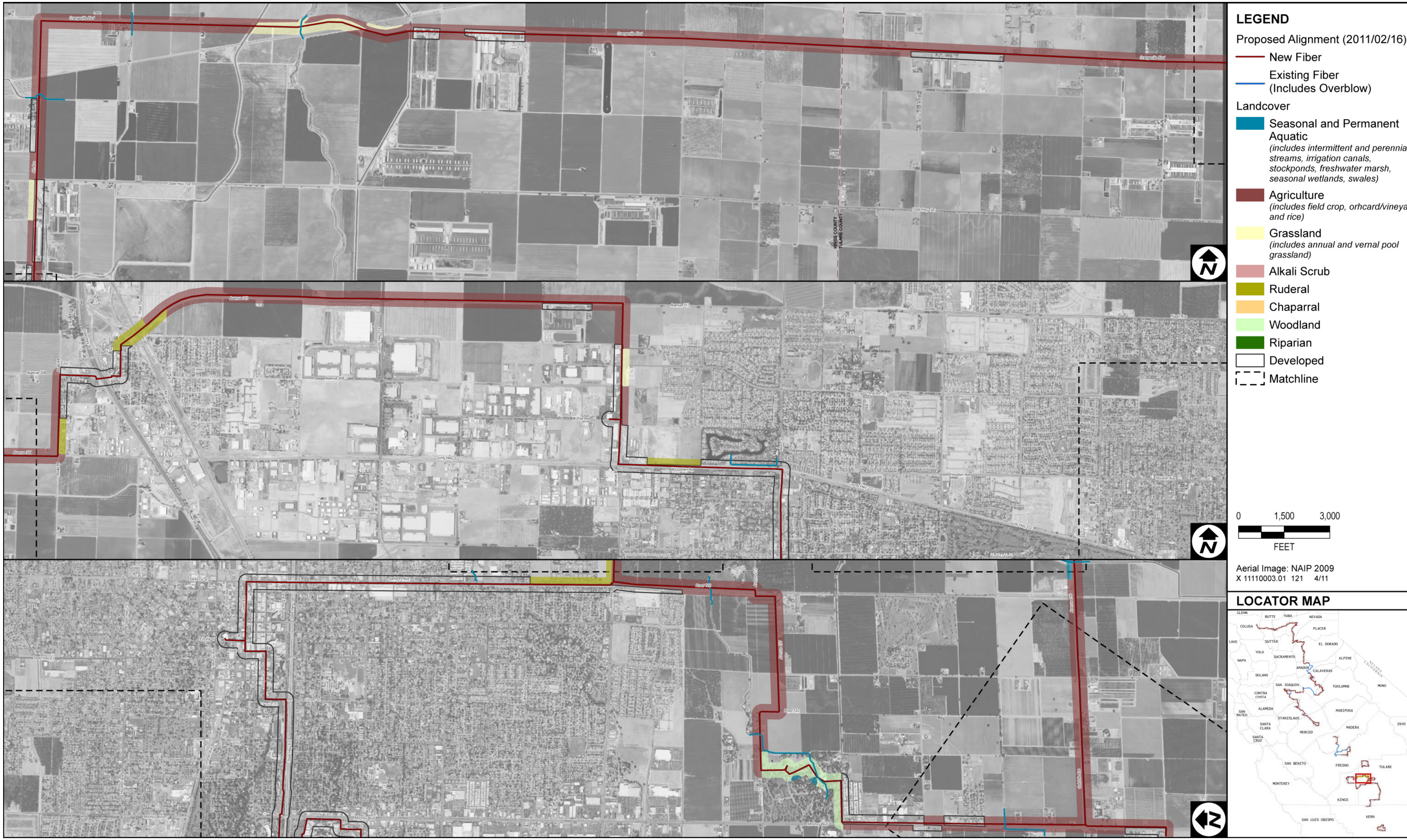
Map 19



Source: CVIN 2010, ESRI 2005

Section 1, Segment 23 Dinuba-Reedley, Section 2, Segment 12 Hanford-Visalia, and Segment 15 Waukena-Lemoore
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 20



Source: CVIN 2010, ESRI 2005

Section 2, Segment 12 Hanford-Visalia, and Segment 13 Visalia-Tulare
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 21

Source: CVIN 2010, ESRI 2005

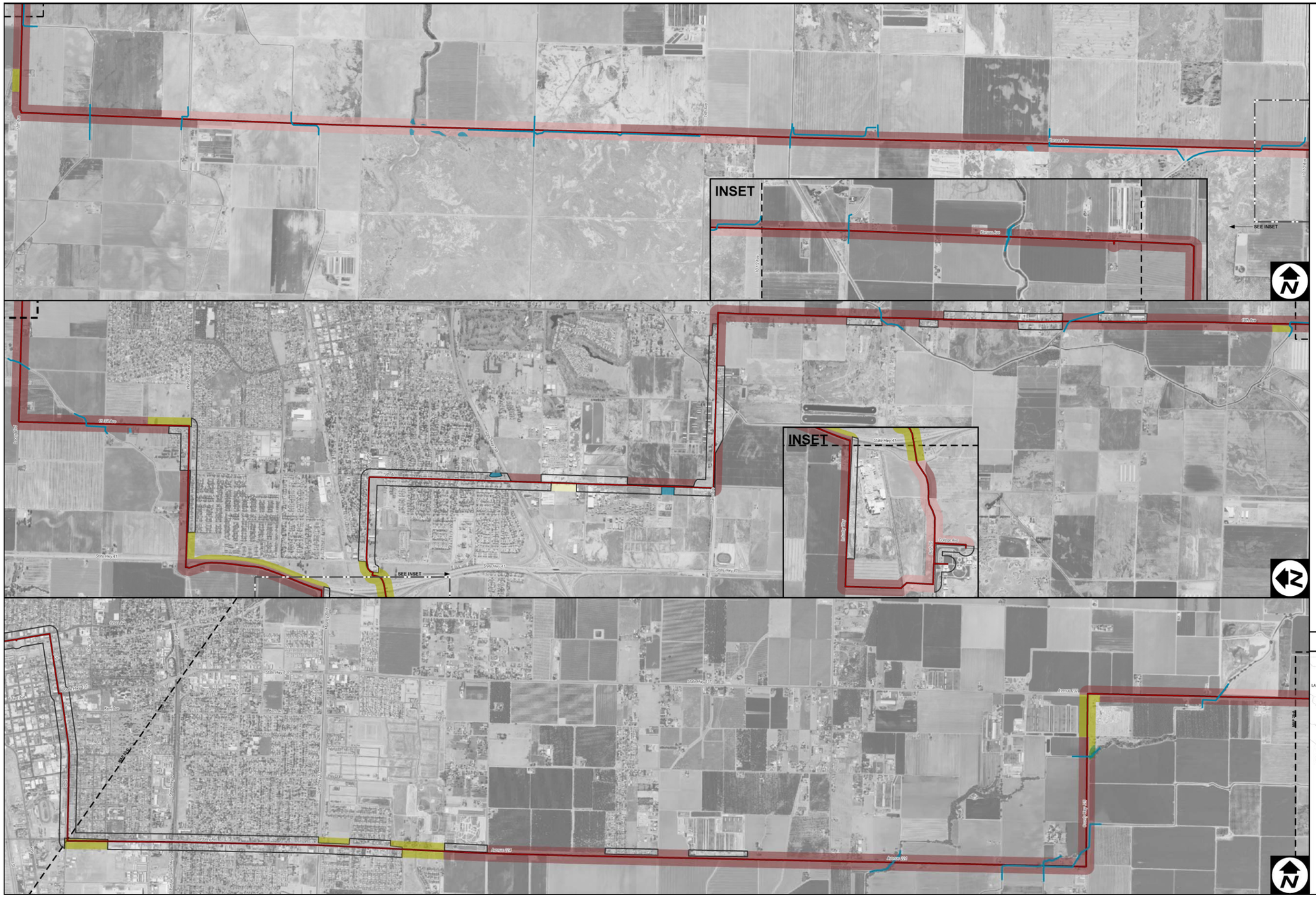
Section 1, Segment 14 Porterville-Tulare, Section 2, Segment 13 Visalia-Tulare, and Segment 30 Tulare-Waukena
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 22

Source: CVIN 2010, ESRI 2005

Section 2, Segment 15 Waukena-Lemoore, and Segment 30 Tulare-Waukena
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 23



LEGEND

Proposed Alignment (2011/02/16)
- New Fiber
- Existing Fiber (Includes Overblow)

Landcover
- Seasonal and Permanent Aquatic *(includes intermittent and perennial streams, irrigation canals, stockponds, freshwater marsh, seasonal wetlands, swales)*
- Agriculture *(includes field crop, orhcard/vineyard, and rice)*
- Grassland *(includes annual and vernal pool grassland)*
- Alkali Scrub
- Ruderal
- Chaparral
- Woodland
- Riparian
- Developed
- Matchline

Source: CVIN 2010, ESRI 2005

Section 1, Segment 14 Porterville-Tulare, Section 2, Section 13 Visalia-Tulare, and Segment 15 Waukena-Lemoore
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 24

LEGEND

Proposed Alignment (2011/02/16)

- New Fiber
- Existing Fiber (Includes Overblow)

Landcover

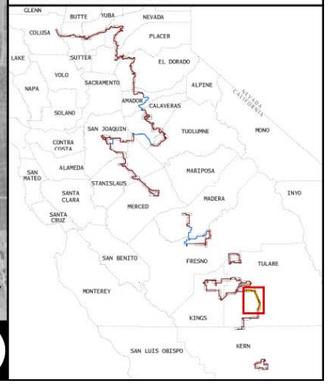
- Seasonal and Permanent Aquatic *(includes intermittent and perennial streams, irrigation canals, stockponds, freshwater marsh, seasonal wetlands, swales)*
- Agriculture *(includes field crop, orhcard/vineyard, and rice)*
- Grassland *(includes annual and vernal pool grassland)*
- Alkali Scrub
- Ruderal
- Chaparral
- Woodland
- Riparian
- Developed
- Matchline

0 1,500 3,000

FEET

Aerial Image: NAIP 2009
X 11110003.01 125 4/11

LOCATOR MAP



Source: CVIN 2010, ESRI 2005

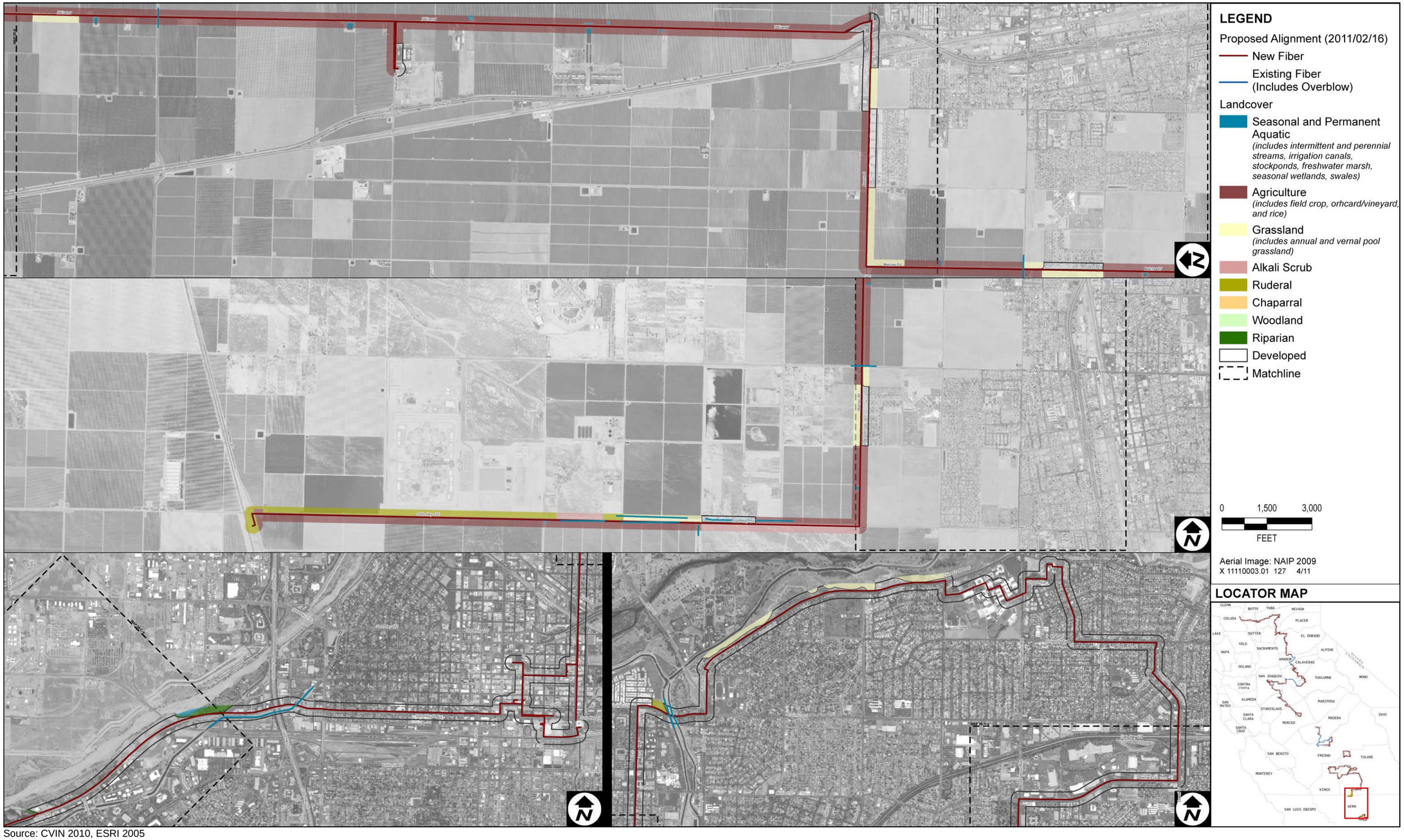
Section 1, Segment 3 Ducor Overblow, and Segment 14 Porterville-Tulare
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 25

Source: CVIN 2010, ESRI 2005

Section 1, Segment 3 Ducor Overblow, and Segment 22 Sandrini-Ducor
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

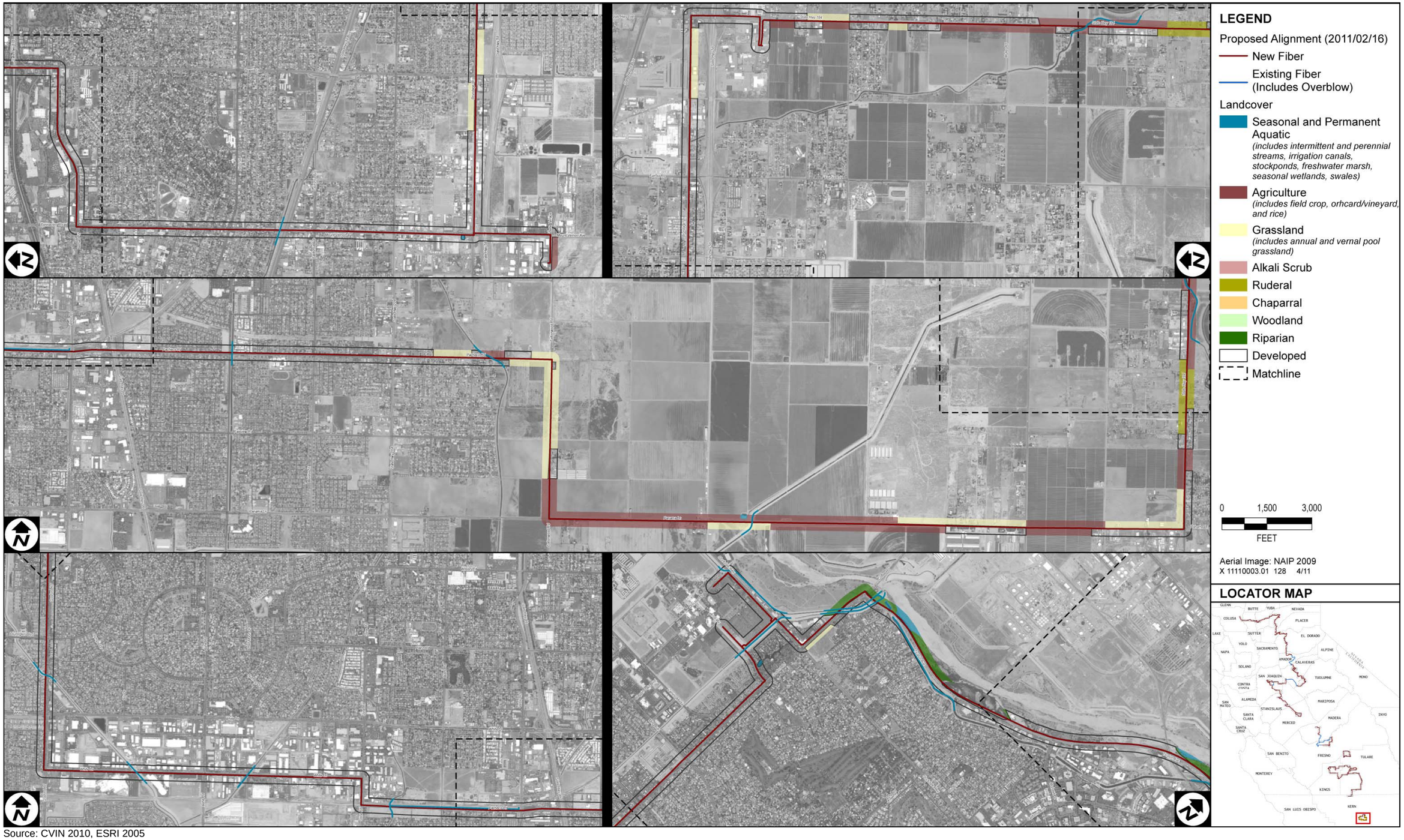
Map 26



Source: CVIN 2010, ESRI 2005

Section 1, Segment 6 Bakersfield, and Segment 22 Sandrini-Ducor
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 27



Source: CVIN 2010, ESRI 2005

Section 1, Segment 6 Bakersfield
Preliminary Mapping of Plant Communities and Agricultural Types Adjacent to Project Alignment

Map 28

APPENDIX D

U.S. Fish and Wildlife Service and California Department of Fish and Game Data Search for Listed Species in the Study Area

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 101111120009

Database Last Updated: April 29, 2010

Quad Lists

Listed Species

Invertebrates

Branchinecta conservatio

- Conservancy fairy shrimp (E)
- Critical habitat, Conservancy fairy shrimp (X)

Branchinecta longiantenna

- longhorn fairy shrimp (E)

Branchinecta lynchi

- Critical habitat, vernal pool fairy shrimp (X)
- vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

- valley elderberry longhorn beetle (T)

Lepidurus packardi

- Critical habitat, vernal pool tadpole shrimp (X)
- vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris

- green sturgeon (T) (NMFS)

Hypomesus transpacificus

- Critical habitat, delta smelt (X)
- delta smelt (T)

Oncorhynchus mykiss

- Central Valley steelhead (T) (NMFS)
- Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha

- Central Valley spring-run chinook salmon (T) (NMFS)
- Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
- Critical habitat, winter-run chinook salmon (X) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense

- California tiger salamander, central population (T)
- Critical habitat, CA tiger salamander, central population (X)

Rana draytonii

California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Gambelia (=Crotaphytus) sila
blunt-nosed leopard lizard (E)

Thamnophis gigas
giant garter snake (T)

Birds

Empidonax traillii extimus
southwestern willow flycatcher (E)

Strix occidentalis caurina
northern spotted owl (T)

Mammals

Dipodomys ingens
giant kangaroo rat (E)

Dipodomys nitratoides exilis
Critical habitat, Fresno kangaroo rat (X)
Fresno kangaroo rat (E)

Dipodomys nitratoides nitratoides
Tipton kangaroo rat (E)

Sorex ornatus relictus
Buena Vista Lake shrew (E)

Sylvilagus bachmani riparius
riparian brush rabbit (E)

Vulpes macrotis mutica
San Joaquin kit fox (E)

Plants

Arctostaphylos myrtifolia
Ione manzanita (T)

Brodiaea pallida
Chinese Camp brodiaea (T)

Calystegia stebbinsii
Stebbins's morning-glory (E)

Castilleja campestris ssp. succulenta
Critical habitat, succulent (=fleshy) owl's-clover (X)
succulent (=fleshy) owl's-clover (T)

Caulanthus californicus
California jewelflower (E)

Ceanothus roderickii
Pine Hill ceanothus (E)

Clarkia springvillensis
Springville clarkia (T)

Cordylanthus palmatus
palmate-bracted bird's-beak (E)

Eremalche kernensis
Kern mallow (E)

Fremontodendron californicum ssp. decumbens
Pine Hill flannelbush (E)

Monolopia congdonii (=Lembertia congdonii)
San Joaquin woolly-threads (E)

Neostapfia colusana
Colusa grass (T)
Critical habitat, Colusa grass (X)

Opuntia treleasei
Bakersfield cactus (E)

Orcuttia inaequalis
Critical habitat, San Joaquin Valley Orcutt grass (X)
San Joaquin Valley Orcutt grass (T)

Orcuttia pilosa
Critical habitat, hairy Orcutt grass (X)
hairy Orcutt grass (E)

Pseudobahia bahiifolia
Hartweg's golden sunburst (E)

Pseudobahia peirsonii
San Joaquin adobe sunburst (T)

Senecio layneae
Layne's butterweed (=ragwort) (T)

Tuctoria greenei
Critical habitat, Greene's tuctoria (=Orcutt grass) (X)
Greene's tuctoria (=Orcutt grass) (E)

Verbena californica
Red Hills (=California) vervain (T)

Proposed Species

Amphibians

Rana draytonii
Critical habitat, California red-legged frog (PX)

Candidate Species

Birds

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (C)

Mammals

Martes pennanti
fisher (C)

Quads Containing Listed, Proposed or Candidate Species:

OIL CENTER (239B)
LAMONT (239C)
OILDALE (240A)
GOSFORD (240D)

DUCOR (287A)
SAUSALITO SCHOOL (287B)
DELANO EAST (287C)
PIXLEY (288A)
DELANO WEST (288D)
LINDSAY (310A)
CAIRNS CORNER (310B)
PORTERVILLE (310D)
TULARE (311A)
PAIGE (311B)
WAUKENA (312A)
GUERNSEY (312B)
STRATFORD (313A)
EXETER (333C)
GOSHEN (334C)
VISALIA (334D)
HANFORD (335C)
REMNOY (335D)
LEMOORE (336D)
ORANGE COVE NORTH (356A)
WAHTOKE (356B)
REEDLEY (356C)
ORANGE COVE SOUTH (356D)
FRESNO SOUTH (358A)
KEARNEY PARK (358B)
KERMAN (359A)
FRIANT (378B)
CLOVIS (378C)
LANES BRIDGE (379A)
GREGG (379B)
HERNDON (379C)
FRESNO NORTH (379D)
MADERA (380A)
BIOLA (380D)
BERENDA (400C)
KISMET (400D)
MERCED (421C)
WINTON (422A)
CRESSEY (422B)
ATWATER (422D)
TURLOCK (423A)
RIVERBANK (442B)
CERES (442C)
DENAIR (442D)
SALIDA (443A)
STANDARD (458A)
SONORA (458B)
NEW MELONES DAM (459A)

COPPEROPOLIS (459B)
BACHELOR VALLEY (460A)
FARMINGTON (460B)
ESCALON (460C)
PETERS (461A)
STOCKTON EAST (461B)
MANTECA (461C)
AVENA (461D)
STOCKTON WEST (462A)
COLUMBIA (475C)
COLUMBIA SE (475D)
CALAVERITAS (476A)
SAN ANDREAS (476B)
SALT SPRING VALLEY (476C)
ANGELS CAMP (476D)
JENNY LIND (477D)
LODI SOUTH (479D)
PINE GROVE (493B)
MOKELUMNE HILL (493C)
AMADOR CITY (494A)
JACKSON (494D)
CAMINO (509B)
AUKUM (509C)
PLACERVILLE (510A)
FIDDLETOWN (510D)
GREENWOOD (526B)
COLOMA (526C)
GARDEN VALLEY (526D)
AUBURN (527A)
CHICAGO PARK (541B)
COLFAX (541C)
GRASS VALLEY (542A)
LAKE COMBIE (542D)
SMARTVILLE (543A)
BROWNS VALLEY (543B)
YUBA CITY (544A)
SUTTER (544B)
SUTTER BUTTES (545A)
MERIDIAN (545B)
COLUSA (546A)
NEVADA CITY (558D)

County Lists

No county species lists requested.

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding,

feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined

by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be February 09, 2011.

California Natural Diversity Database Search Results

County	EO_	EO_ID	PARTS	ELMTYPE	SNAME	CNAME	ELMCODE	OCCNUMB	EOCOUNT	MAPNDX	EONDX	KEYQUAD	KQUADNA	KEYCOUNT
Amador	3655	15130	1	1	Sphenopholis obtusata	prairie wedge grass	PMPOA5T(	5	1	21497	15130	3812037	Jackson	AMA
Bakersfield	37155	57313	1	2	Taxidea taxus	American badger	AMAJF040	255	1	57297	57313	3511931	Gosford	KRN
Bakersfield	45367	66381	1	2	Eumops perotis californicus	western mastiff bat	AMACD02(	54	1	66296	66381	3511848	Oil Center	KRN
Bakersfield	48945	69838	1	1	Imperata brevifolia	California satintail	PMPOA3D(	14	3	66422	69838	3511931	Gosford	KRN
Bakersfield	45505	66520	1	2	Eumops perotis californicus	western mastiff bat	AMACD02(	164	3	66422	66520	3511931	Gosford	KRN
Bakersfield	49704	70411	1	1	Astragalus hornii var. hornii	Horn's milk-vetch	PDFAB0F4	9	3	66422	70411	3511931	Gosford	KRN
Bakersfield	32403	51922	1	1	Delphinium recurvatum	recurved larkspur	PDRAN0B1	21	1	51922	51922	3511931	Gosford	KRN
Bakersfield	23108	28905	1	3	Great Valley Cottonwood Riparian Forest	Great Valley Cottonwood Riparian Forest	CTT61410C	31	1	15791	28905	3511931	Gosford	KRN
Bakersfield	18894	15139	1	1	Stylocline masonii	Mason's neststraw	PDAST8Y0	3	1	23792	15139	3511931	Gosford	KRN
Bakersfield	21549	23090	1	2	Helminthoglypta callistoderma	Kern shoulderband	IMGASC20	1	1	15807	23090	3511931	Gosford	KRN
Bakersfield	19873	7692	1	2	Danaus plexippus	monarch butterfly	IILEPP2010	200	1	00061	7692	3511848	Oil Center	KRN
Bakersfield	46500	66522	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	226	1	66430	66522	3511931	Gosford	KRN
Bakersfield	49251	66504	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	225	1	66409	66504	3511931	Gosford	KRN
Bakersfield	49139	66858	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	229	1	66709	66858	3511931	Gosford	KRN
Bakersfield	46520	67511	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	599	1	67346	67511	3511838	Lamont	KRN
Bakersfield	4299	2991	1	1	Opuntia basilaris var. treleasei	Bakersfield cactus	PDCAC0D0	34	1	31351	2991	3511848	Oil Center	KRN
Bakersfield	37299	57505	1	2	Athene cunicularia	burrowing owl	ABNSB100	712	1	57489	57505	3511931	Gosford	KRN
Calaveras	45579	66590	1	2	Antrozous pallidus	pallid bat	AMACC10(	133	1	66479	66590	3812015	Angels Can	CAL
Calaveras	39974	60694	1	2	Hydroporus leechi	Leech's skyline diving beetle	IICOL5504(	3	1	60658	60694	3812036	Mokelumn	CAL
Calaveras	7458	25249	1	3	Ione Chaparral	Ione Chaparral	CTT37D00(	6	1	16034	25249	3812036	Mokelumn	CAL
Calaveras	1672	5042	1	2	Agelaius tricolor	tricolored blackbird	ABPBXB00	292	1	26028	5042	3712088	Farmingtor	STA
Calaveras	6956	3702	1	2	Linderiella occidentalis	California linderiella	ICBRA0601	36	1	33069	3702	3712087	Bachelor V	STA
Calaveras	6955	3701	1	2	Linderiella occidentalis	California linderiella	ICBRA0601	35	1	33068	3701	3712087	Bachelor V	STA
Calaveras	2518	20662	1	1	Helianthemum suffrutescens	Bisbee Peak rush-rose	PDCIS020F	4	2	13054	20662	3812026	San Andrea	CAL
Calaveras	2519	20180	1	1	Arctostaphylos myrtifolia	Ione manzanita	PDERI0424	13	2	13054	20180	3812026	San Andrea	CAL
Colusa	40520	61261	1	2	Branta hutchinsii leucopareia	cackling (=Aleutian Canada) goose	ABNJB050	13	1	61225	61261	3912128	Meridian	COL
Colusa	20804	25242	1	2	Riparia riparia	bank swallow	ABPAU080	14	1	10045	25242	3912221	Colusa	COL
Colusa	17461	13008	1	2	Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB020	140	2	10326	13008	3912128	Meridian	SUT
Colusa	17462	13104	1	2	Branta hutchinsii leucopareia	cackling (=Aleutian Canada) goose	ABNJB050	4	2	10326	13104	3912128	Meridian	SUT
Colusa	39430	60047	1	2	Cicindela hirticollis abrupta	Sacramento Valley tiger beetle	IICOL0210	2	1	60011	60047	3912221	Colusa	COL
Colusa	5100	25191	1	2	Riparia riparia	bank swallow	ABPAU080	83	1	10129	25191	3912128	Meridian	COL
Colusa	20847	22717	1	2	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	48	1	10279	22717	3912128	Meridian	COL
Colusa	20850	27072	1	2	Buteo swainsoni	Swainson's hawk	ABNKC190	231	1	10302	27072	3912128	Meridian	SUT
Colusa	48743	69686	1	2	Lasiurus blossevillii	western red bat	AMACC05(	60	2	68988	69686	3912128	Meridian	COL
Colusa	48744	69687	1	2	Lasiurus cinereus	hoary bat	AMACC05(	202	2	68988	69687	3912128	Meridian	COL
Colusa	48746	69689	1	2	Lasiurus cinereus	hoary bat	AMACC05(	203	2	68989	69689	3912128	Meridian	COL
Colusa	48745	69688	1	2	Lasiurus blossevillii	western red bat	AMACC05(	61	2	68989	69688	3912128	Meridian	COL
Dinuba-Ree	48347	69375	1	2	Lasiurus cinereus	hoary bat	AMACC05(	130	1	68823	69375	3611954	Reedley	TUL
Dinuba-Ree	39949	60675	1	2	Lytta molesta	molestan blister beetle	IICOL4C03(	14	1	60639	60675	3611953	Orange Co	FRE
Dinuba-Ree	48942	69850	1	1	Imperata brevifolia	California satintail	PMPOA3D(	20	1	69074	69850	3611954	Reedley	FRE
Dinuba-Ree	3710	21673	1	1	Pseudobahia peirsonii	San Joaquin adobe sunburst	PDAST7P0	13	1	22865	21673	3611954	Reedley	TUL
Dinuba-Ree	5568	28435	1	2	Ambystoma californiense	California tiger salamander	AAAAA011	12	1	15551	28435	3611963	Orange Co	TUL
El Dorado	62250	78967	1	2	Martes pennanti (pacifica) DPS	Pacific fisher	AMAJF010	700	1	78087	78967	3812067	Placerville	ELD
El Dorado	16543	29426	1	4	Central Valley Drainage Hardhead/Squawfi	Central Valley Drainage Hardhead/Squawfish Strear	CARA2443(	3	1	35355	29426	3812057	Fiddletown	ELD
El Dorado	44408	65132	1	1	Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	PDONA050	61	3	59351	65132	3812181	Auburn	PLA
El Dorado	64106	80217	1	1	Lathyrus sulphureus var. argillaceus	dubious pea	PDFAB251(	2	3	59351	80217	3812181	Auburn	PLA
El Dorado	38836	59387	1	2	Andrena subapasta	A vernal pool andrenid bee	IIHYM3505	2	3	59351	59387	3812181	Auburn	PLA
El Dorado	21178	24725	1	2	Agelaius tricolor	tricolored blackbird	ABPBXB00	103	1	12562	24725	3812077	Garden Val	ELD

ACCURACY	PRESENCE	OCCTYPE	OCCRANK	SENSITIVE	SITEDATE	ELMDATE	OWNERMG	FEDLIST	CALLIST	GRANK	SRANK	RPLANTRA
3/5 mile	Presumed I	Natural/Na	U	N	1892XXXX	1892XXXX	UNKNOWN	None	None	G5	S2.2	2.2
5 miles	Presumed I	Natural/Na	U	N	190007XX	190007XX	UNKNOWN	None	None	G5	S4	
1 mile	Presumed I	Natural/Na	U	N	XXXXXXXX	XXXXXXXX	UNKNOWN	None	None	G5T4	S3?	
1 mile	Presumed I	Natural/Na	U	N	1896XXXX	1896XXXX	UNKNOWN	None	None	G2	S2.1	2.1
1 mile	Presumed I	Natural/Na	U	N	XXXXXXXX	XXXXXXXX	UNKNOWN	None	None	G5T4	S3?	
1 mile	Presumed I	Natural/Na	U	N	19390515	19390515	UNKNOWN	None	None	G4G5T2T3	S2S3.1	1B.1
1 mile	Presumed I	Natural/Na	U	N	19350330	19350330	UNKNOWN	None	None	G2	S2.2	1B.2
1 mile	Presumed I	Natural/Na	U	N	198509XX	198509XX	UNKNOWN	None	None	G2	S2.1	
1 mile	Presumed I	Natural/Na	U	N	1989XXXX	19350330	UNKNOWN	None	None	G1	S1.1	1B.1
1 mile	Presumed I	Natural/Na	U	N	19160701	19160701	PVT	None	None	G1	S1	
1 mile	Presumed I	Natural/Na	U	N	1991XXXX	XXXXXXXX	PVT	None	None	G5	S3	
nonspecific	Presumed I	Natural/Na	D	N	20070327	20070327	CSU-BAKER	Endangere	Threatenec	G4T2T3	S2S3	
nonspecific	Presumed I	Natural/Na	U	N	20060207	20060207	UNKNOWN	Endangere	Threatenec	G4T2T3	S2S3	
nonspecific	Presumed I	Natural/Na	U	N	20060510	20060510	UNKNOWN	Endangere	Threatenec	G4T2T3	S2S3	
1/5 mile	Presumed I	Natural/Na	U	N	19850319	19850319	UNKNOWN	Endangere	Threatenec	G4T2T3	S2S3	
1/5 mile	Extirpated	Natural/Na	X	N	19890901	XXXXXXXX	PVT	Endangere	Endangere	G5T2	S2.1	1B.1
80 meters	Presumed I	Natural/Na	D	N	20040621	20040621	PVT	None	None	G4	S2	
1 mile	Presumed I	Natural/Na	U	N	18950612	18950612	UNKNOWN	None	None	G5	S3	
1 mile	Presumed I	Natural/Na	U	N	18930518	18930518	UNKNOWN	None	None	G1?	S1?	
1 mile	Presumed I	Natural/Na	U	N	19730719	19730719	UNKNOWN	None	None	G1	S1.1	
nonspecific	Presumed I	Natural/Na	B	N	19940528	19940528	PVT-LAZY "	None	None	G2G3	S2	
1/5 mile	Presumed I	Natural/Na	U	N	19940408	19940408	UNKNOWN	None	None	G3	S2S3	
1/5 mile	Presumed I	Natural/Na	U	N	19940408	19940408	UNKNOWN	None	None	G3	S2S3	
1/5 mile	Presumed I	Natural/Na	U	N	19840421	19840421	PVT	None	None	G2Q	S2.2	3.2
1/5 mile	Presumed I	Natural/Na	U	N	19840421	19840421	PVT	Threatenec	None	G2	S2.1	1B.2
1 mile	Presumed I	Natural/Na	U	N	19870126	19870126	PVT, UNKN	Delisted	None	G5T4	S2	
1 mile	Presumed I	Natural/Na	B	N	19870610	19870610	DPR-COLUS	None	Threatenec	G5	S2S3	
1 mile	Presumed I	Natural/Na	U	N	197607XX	197607XX	PVT	Candidate	Endangere	G5T3Q	S1	
1 mile	Presumed I	Natural/Na	U	N	19851115	19851115	PVT	Delisted	None	G5T4	S2	
specific are	Possibly Ex	Natural/Na	X	N	19570801	19570801	UNKNOWN	None	None	G5TH	SH	
1/5 mile	Presumed I	Natural/Na	U	N	1984XXXX	1984XXXX	UNKNOWN	None	Threatenec	G5	S2S3	
1/5 mile	Presumed I	Natural/Na	B	N	19870429	19870429	STATE	Threatenec	None	G3T2	S2	
1/5 mile	Presumed I	Natural/Na	U	N	19840628	19840628	PVT	None	Threatenec	G5	S2	
1/10 mile	Presumed I	Natural/Na	U	N	19990923	19990923	UNKNOWN	None	None	G5	S3?	
1/10 mile	Presumed I	Natural/Na	U	N	19990923	19990923	UNKNOWN	None	None	G5	S4?	
1/10 mile	Presumed I	Natural/Na	U	N	19990922	19990922	UNKNOWN	None	None	G5	S4?	
1/10 mile	Presumed I	Natural/Na	U	N	19990922	19990922	UNKNOWN	None	None	G5	S3?	
1 mile	Presumed I	Natural/Na	U	N	19430417	19430417	UNKNOWN	None	None	G5	S4?	
1 mile	Presumed I	Natural/Na	U	N	19560417	19560417	UNKNOWN	None	None	G2	S2	
1 mile	Presumed I	Natural/Na	U	N	19330905	19330905	UNKNOWN	None	None	G2	S2.1	2.1
1 mile	Extirpated	Natural/Na	X	N	19900408	19270411	PVT	Threatenec	Endangere	G2	S2.1	1B.1
1 mile	Possibly Ex	Natural/Na	X	N	19520519	19520519	UNKNOWN	Threatenec	Threatenec	G2G3	S2S3	
5 miles	Presumed I	Natural/Na	U	N	191607XX	191607XX	UNKNOWN	Candidate	None	G5	S2S3	
nonspecific	Presumed I	Natural/Na	C	N	19790907	19790907	PVT	None	None	G?	SNR	
1 mile	Presumed I	Natural/Na	U	N	19280612	19280612	UNKNOWN	None	None	G4G5T3	S3	1B.2
1 mile	Presumed I	Natural/Na	U	N	XXXXXXXX	XXXXXXXX	UNKNOWN	None	None	G5T1T2	S1S2	3
1 mile	Presumed I	Natural/Na	U	N	XXXXXXXX	XXXXXXXX	UNKNOWN	None	None	G1G3	S1S3	
1 mile	Presumed I	Natural/Na	U	N	19920630	19XXXXXX	UNKNOWN	None	None	G2G3	S2	

El Dorado	10161	42639	1	1	Fritillaria eastwoodiae	Butte County fritillary	PMLIL0V06	102	1	42639	42639	3812181	Auburn	PLA
El Dorado	36275	20113	1	1	Arctostaphylos nissenana	Nissenan manzanita	PDERI040V	2	1	12666	20113	3812067	Placerville	ELD
El Dorado	63640	79894	1	1	Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	PDONA050	89	1	78921	79894	3812181	Auburn	ELD
El Dorado	39964	59386	1	2	Andrena subapasta	A vernal pool andrenid bee	IIHYM3505	1	1	59350	59386	3812181	Auburn	ELD
El Dorado	5278	23096	1	2	Ammonitella yatesii	tight coin (=Yates' snail)	IMGASB00	6	1	12187	23096	3812181	Auburn	ELD
El Dorado	63641	79895	1	1	Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	PDONA050	90	1	78923	79895	3812181	Auburn	ELD
El Dorado	3702	8306	1	1	Packera layneae	Layne's ragwort	PDAST8H1	39	1	22741	8306	3812078	Coloma	ELD
El Dorado	22337	14412	1	2	Rana boylii	foothill yellow-legged frog	AAABH010	103	1	30236	14412	3812066	Camino	ELD
Fresno	48978	69854	1	1	Imperata brevifolia	California satintail	PMPOA3D(	22	8	46277	69854	3611977	Fresno Nor	FRE
Fresno	43938	64783	1	1	Tropidocarpum capparideum	caper-fruited tropidocarpum	PDBRA2R0	22	8	46277	64783	3611977	Fresno Nor	FRE
Fresno	42441	63230	1	1	Caulanthus californicus	California jewel-flower	PDBRA310	38	8	46277	63230	3611977	Fresno Nor	FRE
Fresno	43595	64456	1	2	Lytta molesta	molestan blister beetle	IICOL4C03(	13	8	46277	64456	3611977	Fresno Nor	FRE
Fresno	42676	63436	1	2	Efferia antiochi	Antioch efferian robberfly	IIDIP07010	2	8	46277	63436	3611977	Fresno Nor	FRE
Fresno	27786	46277	1	2	Ambystoma californiense	California tiger salamander	AAAAA011	583	8	46277	46277	3611977	Fresno Nor	FRE
Fresno	39618	60267	1	2	Metapogon hurdi	Hurd's metapogon robberfly	IIDIP08010	2	8	46277	60267	3611977	Fresno Nor	FRE
Fresno	57696	75591	1	1	Leptosiphon serrulatus	Madera leptosiphon	PDPLM091	23	8	46277	75591	3611977	Fresno Nor	FRE
Fresno	45503	66374	1	2	Eumops perotis californicus	western mastiff bat	AMACD02(	47	1	66290	66374	3611967	Fresno Sou	FRE
Fresno	21405	23951	1	2	Perognathus inornatus inornatus	San Joaquin pocket mouse	AMAFD01(	16	1	14563	23951	3611967	Fresno Sou	FRE
Fresno	16916	22388	1	1	Orcuttia inaequalis	San Joaquin Valley Orcutt grass	PMPOA4G(	21	2	14687	22388	3611977	Fresno Nor	FRE
Fresno	17795	26474	1	3	Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	CTT44120(	6	2	14687	26474	3611977	Fresno Nor	FRE
Fresno	6269	6138	1	2	Agelaius tricolor	tricolored blackbird	ABPBXB00	269	1	24424	6138	3611977	Fresno Nor	FRE
Madera	43596	64457	1	2	Lytta molesta	molestan blister beetle	IICOL4C03(	6	3	30806	64457	3612081	Madera	MAD
Madera	11794	46463	1	2	Ambystoma californiense	California tiger salamander	AAAAA011	616	3	30806	46463	3612081	Madera	MAD
Madera	4252	20975	1	1	Leptosiphon serrulatus	Madera leptosiphon	PDPLM091	10	3	30806	20975	3612081	Madera	MAD
Madera	2540	22373	1	1	Orcuttia inaequalis	San Joaquin Valley Orcutt grass	PMPOA4G(	44	2	14296	22373	3712011	Kismet	MAD
Madera	2541	22357	1	1	Tuctoria greenei	Greene's tuctoria	PMPOA6N(	9	2	14296	22357	3712011	Kismet	MAD
Madera	2538	22330	1	1	Orcuttia pilosa	hairy Orcutt grass	PMPOA4G(	9	2	14295	22330	3712011	Kismet	MAD
Madera	2539	22381	1	1	Orcuttia inaequalis	San Joaquin Valley Orcutt grass	PMPOA4G(	31	2	14295	22381	3712011	Kismet	MAD
Madera	11774	46423	1	2	Ambystoma californiense	California tiger salamander	AAAAA011	609	1	46423	46423	3712011	Kismet	MAD
Merced	6823	1707	1	2	Thamnophis gigas	giant garter snake	ARADB361	144	2	32440	1707	3712034	Merced	MER
Merced	46103	66400	1	2	Eumops perotis californicus	western mastiff bat	AMACD02(	71	2	32440	66400	3712034	Merced	MER
Merced	8479	34188	1	2	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	127	1	39186	34188	3712046	Cressey	MER
Merced	11645	46095	1	2	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA0303	306	1	46095	46095	3712035	Atwater	MER
Merced	11646	46094	1	2	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA0303	305	1	46094	46094	3712035	Atwater	MER
Merced	46515	67517	1	2	Emys marmorata	western pond turtle	ARAAD020	321	1	67349	67517	3712035	Atwater	MER
Placer	44408	65132	1	1	Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	PDONA050	61	3	59351	65132	3812181	Auburn	PLA
Placer	64106	80217	1	1	Lathyrus sulphureus var. argillaceus	dubious pea	PDFAB251(	2	3	59351	80217	3812181	Auburn	PLA
Placer	38836	59387	1	2	Andrena subapasta	A vernal pool andrenid bee	IIHYM3505	2	3	59351	59387	3812181	Auburn	PLA
Placer	10161	42639	1	1	Fritillaria eastwoodiae	Butte County fritillary	PMLIL0V06	102	1	42639	42639	3812181	Auburn	PLA
Placer	8787	34883	1	2	Phrynosoma blainvillii	coast horned lizard	ARACF121(	597	1	39881	34883	3912018	Colfax	PLA
Placer	8786	34886	1	2	Phrynosoma blainvillii	coast horned lizard	ARACF121(	600	1	39884	34886	3912018	Colfax	PLA
Placer	36317	56276	2	1	Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	PDONA050	31	1	56260	56276	3912028	Chicago Pa	PLA
San Joaquii	32422	51938	1	1	Delphinium recurvatum	recurved larkspur	PDRAN0B1	73	1	51938	51938	3712182	Stockton E	SJQ
San Joaquii	39014	59602	1	1	Atriplex joaquiniana	San Joaquin spearscale	PDCHE041I	70	4	45805	59602	3712183	Stockton W	SJQ
San Joaquii	31274	50829	1	1	Sagittaria sanfordii	Sanford's arrowhead	PMALI040(	54	4	45805	50829	3712183	Stockton W	SJQ
San Joaquii	30368	49817	1	1	Cordylanthus palmatus	palmate-bracted bird's-beak	PDSCR0J0J(	8	4	45805	49817	3712183	Stockton W	SJQ
San Joaquii	27625	45805	1	1	California macrophylla	round-leaved filaree	PDGER010	45	4	45805	45805	3712183	Stockton W	SJQ
San Joaquii	3412	22358	1	1	Tuctoria greenei	Greene's tuctoria	PMPOA6N(	8	2	12171	22358	3712088	Farmingtor	SJQ
San Joaquii	45726	66752	1	2	Antrozous pallidus	pallid bat	AMACC10(	279	2	12171	66752	3712088	Farmingtor	SJQ

3/5 mile	Presumed I	Natural/Na	U	N	19670401	19670401	UNKNOWN	None	None	G3Q	S3	3.2
nonspecific	Presumed I	Natural/Na	U	N	19380412	19380412	UNKNOWN	None	None	G2	S2.2	1B.2
specific are	Presumed I	Natural/Na	A	N	20090615	20090615	BOR, UNK	None	None	G4G5T3	S3	1B.2
1/5 mile	Presumed I	Natural/Na	U	N	19640329	19640329	UNKNOWN	None	None	G1G3	S1S3	
1/5 mile	Presumed I	Natural/Na	U	N	XXXXXXXX	XXXXXXXX	PVT	None	None	G1	S1	
80 meters	Presumed I	Natural/Na	B	N	20090615	20090615	UNKNOWN	None	None	G4G5T3	S3	1B.2
80 meters	Presumed I	Natural/Na	U	N	1986XXXX	1986XXXX	UNKNOWN	Threatened	Rare	G2	S2	1B.2
80 meters	Presumed I	Natural/Na	C	N	19940823	19940823	UNKNOWN	None	None	G3	S2S3	
5 miles	Presumed I	Natural/Na	U	N	18930731	18930731	UNKNOWN	None	None	G2	S2.1	2.1
5 miles	Presumed I	Natural/Na	U	N	19300412	19300412	UNKNOWN	None	None	G1	S1.1	1B.1
5 miles	Extirpated	Natural/Na	X	N	198603XX	XXXXXXXX	UNKNOWN	Endangere	Endangere	G1	S1.1	1B.1
5 miles	Possibly Ex	Natural/Na	U	N	19XXXXXX	19XXXXXX	UNKNOWN	None	None	G2	S2	
5 miles	Presumed I	Natural/Na	U	N	19541215	19541215	UNKNOWN	None	None	G1G3	S1S3	
5 miles	Extirpated	Natural/Na	X	N	19360516	19360516	UNKNOWN	Threatened	Threatened	G2G3	S2S3	
5 miles	Possibly Ex	Natural/Na	U	N	19221129	19221129	UNKNOWN	None	None	G1G3	S1S3	
5 miles	Presumed I	Natural/Na	U	N	192205XX	192205XX	UNKNOWN	None	None	G1?	S1?	1B.2
1 mile	Presumed I	Natural/Na	U	N	19910417	19910417	UNKNOWN	None	None	G5T4	S3?	
1 mile	Presumed I	Natural/Na	U	N	19151120	19151120	UNKNOWN	None	None	G4T2T3	S2S3	
1 mile	Extirpated	Natural/Na	X	N	19870601	19270527	UNKNOWN	Threatened	Endangere	G2	S2.1	1B.1
1 mile	Presumed I	Natural/Na	U	N	198001XX	198001XX	UNKNOWN	None	None	G1	S1.1	
1/5 mile	Extirpated	Natural/Na	X	N	1975XXXX	1975XXXX	UNKNOWN	None	None	G2G3	S2	
1 mile	Possibly Ex	Natural/Na	U	N	19XXXXXX	19XXXXXX	UNKNOWN	None	None	G2	S2	
1 mile	Extirpated	Natural/Na	X	N	194412XX	194412XX	UNKNOWN	Threatened	Threatened	G2G3	S2S3	
1 mile	Presumed I	Natural/Na	U	N	188905XX	188905XX	UNKNOWN	None	None	G1?	S1?	1B.2
1 mile	Possibly Ex	Natural/Na	X	N	19870602	19730815	UNKNOWN	Threatened	Endangere	G2	S2.1	1B.1
1 mile	Possibly Ex	Natural/Na	X	N	19870602	19360529	UNKNOWN	Endangere	Rare	G2	S2.2	1B.1
1/5 mile	Extirpated	Natural/Na	X	N	19870602	19730815	PVT	Endangere	Endangere	G2	S2.1	1B.1
1/5 mile	Extirpated	Natural/Na	X	N	19870602	1973XXXX	PVT	Threatened	Endangere	G2	S2.1	1B.1
1/10 mile	Possibly Ex	Natural/Na	X	N	19830330	19830330	UNKNOWN	Threatened	Threatened	G2G3	S2S3	
1 mile	Possibly Ex	Natural/Na	X	N	19080617	19080617	UNKNOWN	Threatened	Threatened	G2G3	S2S3	
1 mile	Presumed I	Natural/Na	U	N	19911212	19911212	UNKNOWN	None	None	G5T4	S3?	
specific are	Presumed I	Natural/Na	U	N	19900413	19900413	UNKNOWN	Threatened	None	G3T2	S2	
nonspecific	Presumed I	Natural/Na	B	N	20010214	20010214	CALTRANS	Threatened	None	G3	S2S3	
nonspecific	Presumed I	Natural/Na	B	N	20010228	20010228	CALTRANS	Threatened	None	G3	S2S3	
80 meters	Presumed I	Natural/Na	C	N	20061013	20061013	UNKNOWN	None	None	G3G4	S3	
1 mile	Presumed I	Natural/Na	U	N	19280612	19280612	UNKNOWN	None	None	G4G5T3	S3	1B.2
1 mile	Presumed I	Natural/Na	U	N	XXXXXXXX	XXXXXXXX	UNKNOWN	None	None	G5T1T2	S1S2	3
1 mile	Presumed I	Natural/Na	U	N	XXXXXXXX	XXXXXXXX	UNKNOWN	None	None	G1G3	S1S3	
3/5 mile	Presumed I	Natural/Na	U	N	19670401	19670401	UNKNOWN	None	None	G3Q	S3	3.2
2/5 mile	Presumed I	Natural/Na	U	N	1995XXXX	1995XXXX	UNKNOWN	None	None	G4G5	S3S4	
2/5 mile	Presumed I	Natural/Na	U	N	199007XX	199007XX	PVT	None	None	G4G5	S3S4	
specific are	Presumed I	Natural/Na	C	N	20040613	20040613	UNKNOWN	None	None	G4G5T3	S3	1B.2
1 mile	Presumed I	Natural/Na	U	N	19370506	19370506	UNKNOWN	None	None	G2	S2.2	1B.2
1 mile	Presumed I	Natural/Na	U	N	19271029	19271029	UNKNOWN	None	None	G2	S2	1B.2
1 mile	Presumed I	Natural/Na	U	N	190109XX	190109XX	UNKNOWN	None	None	G3	S3.2	1B.2
1 mile	Possibly Ex	Natural/Na	X	N	1881XXXX	1881XXXX	UNKNOWN	Endangere	Endangere	G1	S1.1	1B.1
1 mile	Presumed I	Natural/Na	U	N	18890425	18890425	UNKNOWN	None	None	G2	S2	1B.1
1 mile	Extirpated	Natural/Na	X	N	19870720	19360611	PVT	Endangere	Rare	G2	S2.2	1B.1
1 mile	Presumed I	Natural/Na	U	N	19511002	19511002	PVT	None	None	G5	S3	

San Joaquii	5276	28436	1	2	Ambystoma californiense	California tiger salamander	AAAAA011	17		1	12174	28436	3712078	Escalon	SJQ				
San Joaquii	5641	7557	1	2	Buteo swainsoni	Swainson's hawk	ABNKC190	299		1	17270	7557	3712183	Stockton W	SJQ				
San Joaquii	29389	41319	1	2	Athene cunicularia	burrowing owl	ABNSB100	323		1	41319	41319	3712182	Stockton E	SJQ				
San Joaquii	21604	11992	1	2	Buteo swainsoni	Swainson's hawk	ABNKC190	297		1	17268	11992	3712183	Stockton W	SJQ				
San Joaquii	5772	24014	1	2	Athene cunicularia	burrowing owl	ABNSB100	34		1	20681	24014	3712182	Stockton E	SJQ				
San Joaquii	21133	22713	1	2	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	55		1	12167	22713	3712078	Escalon	STA				
San Joaquii	22571	16921	1	2	Buteo swainsoni	Swainson's hawk	ABNKC190	661		1	33162	16921	3712078	Escalon	STA				
San Joaquii	41915	62602	1	1	Symphyotrichum lentum	Suisun Marsh aster	PDASTE847	144		1	62565	62602	3712182	Stockton E	SJQ				
San Joaquii	60321	77642	1	2	Athene cunicularia	burrowing owl	ABNSB100	1237		1	76699	77642	3712182	Stockton E	SJQ				
San Joaquii	43925	64771	1	2	Buteo swainsoni	Swainson's hawk	ABNKC190	1634		1	64692	64771	3712182	Stockton E	SJQ				
San Joaquii	43920	64768	1	2	Buteo swainsoni	Swainson's hawk	ABNKC190	1631		1	64689	64768	3712172	Manteca	SJQ				
San Joaquii	32470	45105	1	2	Buteo swainsoni	Swainson's hawk	ABNKC190	929		1	45105	45105	3712183	Stockton W	SJQ				
San Joaquii	22618	25086	1	2	Athene cunicularia	burrowing owl	ABNSB100	233		1	33357	25086	3712182	Stockton E	SJQ				
Stansislaus	43583	64448	1	2	Lytta moesta	moestan blister beetle	IICOL4C02(	10		3	39485	64448	3712068	Riverbank	STA				
Stansislaus	8597	34487	1	2	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	156		3	39485	34487	3712068	Riverbank	STA				
Stansislaus	40161	60849	1	2	Melospiza melodia maxillaris	Suisun song sparrow	ABPBXA30	32		3	39485	60849	3712068	Riverbank	STA				
Stansislaus	47916	68890	1	2	Lasiurus cinereus	hoary bat	AMACC05(	127		1	68543	68890	3712047	Turlock	STA				
Stansislaus	21133	22713	1	2	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	55		1	12167	22713	3712078	Escalon	STA				
Stansislaus	22571	16921	1	2	Buteo swainsoni	Swainson's hawk	ABNKC190	661		1	33162	16921	3712078	Escalon	STA				
Stansislaus	8479	34188	1	2	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	127		1	39186	34188	3712046	Cressey	MER				
Sutter	2	Branta hut	cackling (=/	ABNJB050		13		1	61225	61261	3912128	Meridian	COL	1 mile	Presumed I	Natural/Na			
Sutter	2	Coccyzus a	western ye	ABNRB020		140		2	10326	13008	3912128	Meridian	SUT	1 mile	Presumed I	Natural/Na			
Sutter	2	Branta hut	cackling (=/	ABNJB050		4		2	10326	13104	3912128	Meridian	SUT	1 mile	Presumed I	Natural/Na			
Sutter	2	Perognath	San Joaqui	AMAFD01(		39		1	10384	23941	3912128	Meridian	SUT	1 mile	Presumed I	Natural/Na			
Sutter	2	Coccyzus a	western ye	ABNRB020		91		2	11092	25587	3912125	Yuba City	YUB	1 mile	Presumed I	Natural/Na			
Sutter	1	Pseudobah	Hartweg's g	PDAST7P01		10		2	11092	16655	3912125	Yuba City	YUB	1 mile	Extirpated	Natural/Na			
Sutter	2	Buteo swai	Swainson's	ABNKC190		231		1	10302	27072	3912128	Meridian	SUT	1/5 mile	Presumed I	Natural/Na			
Tulare	44097	64958	1	1	Fritillaria striata	striped adobe-lily	PMLIL0V0K	11		1	64879	64958	3611921	Lindsay	TUL				
Tulare	49975	70631	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	1120		1	69809	70631	3611923	Tulare	TUL				
Tulare	24362	34021	1	1	Atriplex subtilis	subtle orache	PDCHE042	15		1	39014	34021	3511982	Sausalito S	TUL				
Tulare	37060	57116	1	2	Lytta morrisoni	Morrison's blister beetle	IICOL4C04(	7		1	57100	57116	3611911	Porterville	TUL				
Tulare	32405	51929	1	1	Delphinium recurvatum	recurved larkspur	PDRAN0B1	15		1	51929	51929	3611926	Guernsey	KNG				
Tulare	37061	57118	1	2	Lytta hoppingi	Hopping's blister beetle	IICOL4C01(	5		2	57102	57118	3511981	Ducor	TUL				
Tulare	47952	68894	1	2	Lasiurus cinereus	hoary bat	AMACC05(	131		2	57102	68894	3511981	Ducor	TUL				
Tulare	47823	68794	1	2	Lasiurus cinereus	hoary bat	AMACC05(	37		1	68494	68794	3611936	Hanford	KNG				
Tulare	21476	27743	1	2	Gambelia sila	blunt-nosed leopard lizard	ARACF0701	189		1	15263	27743	3611924	Paige	TUL				
Tulare	24346	33912	1	1	Atriplex subtilis	subtle orache	PDCHE042	8		2	25124	33912	3611934	Goshen	TUL				
Tulare	17062	3244	1	1	Atriplex cordulata	heartscale	PDCHE040I	30		2	25124	3244	3611934	Goshen	TUL				
Tulare	18863	12603	1	1	Pseudobahia peirsonii	San Joaquin adobe sunburst	PDAST7P0	11		2	22864	12603	3611923	Tulare	TUL				
Tulare	42438	63227	1	1	Caulanthus californicus	California jewel-flower	PDBRA310	1		2	22864	63227	3611923	Tulare	TUL				
Tulare	48949	69849	1	1	Imperata brevifolia	California satintail	PMPOA3D(	19		4	24419	69849	3611933	Visalia	TUL				
Tulare	36660	56693	1	1	Atriplex minuscula	lesser saltscale	PDCHE042I	11		4	24419	56693	3611933	Visalia	TUL				
Tulare	17649	8143	1	2	Emys marmorata	western pond turtle	ARAAD020	19		4	24419	8143	3611933	Visalia	TUL				
Tulare	17648	8142	1	2	Lytta hoppingi	Hopping's blister beetle	IICOL4C01(	2		4	24419	8142	3611933	Visalia	TUL				
Tulare	17569	6124	1	2	Dipodomys nitratoides nitratoides	Tipton kangaroo rat	AMAFD031	2		4	15589	6124	3511983	Pixley	TUL				
Tulare	37466	57716	1	2	Taxidea taxus	American badger	AMAJF040	327		4	15589	57716	3511983	Pixley	TUL				
Tulare	24405	34012	1	1	Atriplex subtilis	subtle orache	PDCHE042	9		4	15589	34012	3511983	Pixley	TUL				
Tulare	28139	47213	1	1	Atriplex erecticaulis	Earlimart orache	PDCHE042	8		4	15589	47213	3511983	Pixley	TUL				
Tulare	17572	23942	1	2	Perognathus inornatus inornatus	San Joaquin pocket mouse	AMAFD01(	12		1	15594	23942	3511983	Pixley	TUL				

1 mile	Extirpated	Natural/Na	X		N	19200605	19200605	UNKNOWN	Threatenec	Threatenec	G2G3	S2S3	
3/5 mile	Presumed I	Natural/Na	C		N	19900716	19900716	PVT	None	Threatenec	G5	S2	
nonspecific	Presumed I	Natural/Na	C		N	19990709	19990709	UNKNOWN	None	None	G4	S2	
1/5 mile	Presumed I	Natural/Na	C		N	1992XXXX	1992XXXX	PVT	None	Threatenec	G5	S2	
1/5 mile	Presumed I	Natural/Na	U		N	1987XXXX	1987XXXX	CYA-N CALI	None	None	G4	S2	
1/5 mile	Presumed I	Natural/Na	U		N	19890518	19890518	PVT-S SAN	Threatenec	None	G3T2	S2	
1/5 mile	Presumed I	Natural/Na	B		N	19950421	19950421	UNKNOWN	None	Threatenec	G5	S2	
nonspecific	Presumed I	Natural/Na	U		N	19620813	19620813	UNKNOWN	None	None	G2	S2	1B.2
specific are	Presumed I	Natural/Na	U		N	20090618	20090618	PVT-PGE, U	None	None	G4	S2	
80 meters	Presumed I	Natural/Na	U		N	20020722	20020722	UNKNOWN	None	Threatenec	G5	S2	
80 meters	Presumed I	Natural/Na	U		N	20020718	20020718	UNKNOWN	None	Threatenec	G5	S2	
80 meters	Presumed I	Natural/Na	U		N	20000725	20000725	UNKNOWN	None	Threatenec	G5	S2	
80 meters	Presumed I	Natural/Na	C		N	19950702	19950702	PVT-HOLLY	None	None	G4	S2	
5 miles	Possibly Ex	Natural/Na	U		N	19XXXXXX	19XXXXXX	UNKNOWN	None	None	G2	S2	
5 miles	Presumed I	Natural/Na	U		N	1984XXXX	1984XXXX	UNKNOWN	Threatenec	None	G3T2	S2	
5 miles	Presumed I	Natural/Na	U		N	19151229	19151229	UNKNOWN	None	None	G5T2	S2	
1 mile	Presumed I	Natural/Na	U		N	19250425	19250425	UNKNOWN	None	None	G5	S4?	
1/5 mile	Presumed I	Natural/Na	U		N	19890518	19890518	PVT-S SAN	Threatenec	None	G3T2	S2	
1/5 mile	Presumed I	Natural/Na	B		N	19950421	19950421	UNKNOWN	None	Threatenec	G5	S2	
specific are	Presumed I	Natural/Na	U		N	19900413	19900413	UNKNOWN	Threatenec	None	G3T2	S2	
U	N	19870126	19870126	PVT, UNKN	Delisted	None	G5T4	S2			20901		
U	N	197607XX	197607XX	PVT	Candidate	Endangere	G5T3Q	S1			20902		
U	N	19851115	19851115	PVT	Delisted	None	G5T4	S2			20902		
U	N	19120417	19120417	UNKNOWN	None	None	G4T2T3	S2S3			20901		
U	N	19760627	19760627	UNKNOWN	Candidate	Endangere	G5T3Q	S1			20902		
X	N	1848XXXX	1848XXXX	UNKNOWN	Endangere	Endangere	G2	S2.1	1B.1		10902		
U	N	19840628	19840628	PVT	None	Threatenec	G5	S2			20501		
5 miles	Extirpated	Natural/Na	X		N	1983XXXX	19380301	UNKNOWN	None	Threatenec	G2	S2.1	1B.1
nonspecific	Presumed I	Natural/Na	U		N	1992XXXX	1992XXXX	UNKNOWN	Endangere	Threatenec	G4T2T3	S2S3	
1 mile	Presumed I	Natural/Na	U		N	19750711	19750711	UNKNOWN	None	None	G2	S2.2	1B.2
1 mile	Presumed I	Natural/Na	U		N	19390501	19390501	UNKNOWN	None	None	G1G2	S1S2	
1 mile	Presumed I	Natural/Na	U		N	19140325	19140325	UNKNOWN	None	None	G2	S2.2	1B.2
1 mile	Presumed I	Natural/Na	U		N	19340325	19340325	UNKNOWN	None	None	G1G2	S1S2	
1 mile	Presumed I	Natural/Na	U		N	19190509	19190509	UNKNOWN	None	None	G5	S4?	
1 mile	Presumed I	Natural/Na	U		N	19910422	19910422	UNKNOWN	None	None	G5	S4?	
1 mile	Presumed I	Natural/Na	U		N	1974XXXX	1974XXXX	UNKNOWN	Endangere	Endangere	G1	S1	
1 mile	Presumed I	Natural/Na	U		N	20020912	19050901	UNKNOWN	None	None	G2	S2.2	1B.2
1 mile	Presumed I	Natural/Na	U		N	19380509	19380905	UNKNOWN	None	None	G2?	S2.2?	1B.2
1 mile	Extirpated	Natural/Na	X		N	1990XXXX	189704XX	PVT	Threatenec	Endangere	G2	S2.1	1B.1
1 mile	Extirpated	Natural/Na	X		N	1986XXXX	19320310	PVT	Endangere	Endangere	G1	S1.1	1B.1
1 mile	Presumed I	Natural/Na	U		N	18950819	18950819	CITY OF VIS	None	None	G2	S2.1	2.1
1 mile	Presumed I	Natural/Na	U		N	18811001	18811001	CITY OF VIS	None	None	G1	S1.1	1B.1
1 mile	Presumed I	Natural/Na	U		N	1879XXXX	1879XXXX	CITY OF VIS	None	None	G3G4	S3	
1 mile	Presumed I	Natural/Na	U		N	19XX0617	19XX0617	CITY OF VIS	None	None	G1G2	S1S2	
1 mile	Extirpated	Natural/Na	X		N	198507XX	19271003	UNKNOWN	Endangere	Endangere	G3T1	S1	
1 mile	Presumed I	Natural/Na	U		N	XXXXXXXX	XXXXXXXX	UNKNOWN	None	None	G5	S4	
1 mile	Presumed I	Natural/Na	U		N	19930903	19930903	UNKNOWN	None	None	G2	S2.2	1B.2
1 mile	Presumed I	Natural/Na	C		N	20020912	20020912	UNKNOWN	None	None	G2	S2.2	1B.2
1 mile	Presumed I	Natural/Na	U		N	19180516	19180516	UNKNOWN	None	None	G4T2T3	S2S3	

Tulare	18686	21622	1	1	Delphinium recurvatum	recurved larkspur	PDRAN0B1	14	1	15691	21622	3511982	Sausalito S	TUL
Tulare	19000	6121	1	1	Eryngium spinosepalum	spiny-sepaled button-celery	PDAPI0Z0Y	15	1	25085	6121	3611932	Exeter	TUL
Tulare	4198	5259	1	1	Pseudobahia peirsonii	San Joaquin adobe sunburst	PDAST7P0	37	2	30057	5259	3611921	Lindsay	TUL
Tulare	43953	64806	1	1	Mimulus pictus	calico monkeyflower	PDSCR1B2	25	2	30057	64806	3611921	Lindsay	TUL
Tulare	3706	7994	1	1	Fritillaria striata	striped adobe-lily	PMLIL0V0K	8	1	22816	7994	3611911	Porterville	TUL
Tulare	46836	67818	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	808	1	67663	67818	3511982	Sausalito S	TUL
Tulare	46577	67578	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	641	1	67410	67578	3611911	Porterville	TUL
Tulare	46844	67826	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	816	1	67671	67826	3611911	Porterville	TUL
Tulare	46963	67553	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	625	1	67385	67553	3611922	Cairns Corr	TUL
Tulare	46979	67948	2	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	917	1	67798	67948	3611926	Guernsey	KNG
Tulare	46842	67824	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	814	1	67669	67824	3511981	Ducor	TUL
Tulare	42470	63232	1	1	Caulanthus californicus	California jewel-flower	PDBRA310	4	1	63140	63232	3511973	Delano We	TUL
Tulare	36240	56153	1	1	Pseudobahia peirsonii	San Joaquin adobe sunburst	PDAST7P0	7	1	56137	56153	3511981	Ducor	TUL
Tulare	26628	43330	1	2	Buteo swainsoni	Swainson's hawk	ABNKC190	828	1	43330	43330	3611935	Remnoy	KNG
Tulare	46838	67820	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	810	1	67665	67820	3511981	Ducor	TUL
Tulare	46828	67812	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	802	1	67657	67812	3511972	Delano Eas	TUL
Tulare	46841	67823	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	813	1	67668	67823	3511981	Ducor	TUL
Tulare	46965	67932	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	903	1	67780	67932	3611923	Tulare	TUL
Tulare	46966	67933	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	904	1	67781	67933	3611933	Visalia	TUL
Tulare	46562	67547	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	620	1	67379	67547	3611934	Goshen	TUL
Tulare	5981	8313	1	2	Buteo swainsoni	Swainson's hawk	ABNKC190	440	1	22037	8313	3611924	Paige	TUL
Tulare	35798	55674	1	2	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA030	191	1	55674	55674	3611926	Guernsey	KNG
Tulare	10525	42285	1	2	Buteo swainsoni	Swainson's hawk	ABNKC190	793	1	42285	42285	3611924	Paige	TUL
Tuolumne	30959	50470	1	1	Clarkia rostrata	beaked clarkia	PDONA050	25	2	40385	50470	3712085	New Melor	TUO
Tuolumne	25051	35392	1	1	Eryngium spinosepalum	spiny-sepaled button-celery	PDAPI0Z0Y	24	2	40385	35392	3712085	New Melor	TUO
Tuolumne	45954	66780	1	2	Antrozous pallidus	pallid bat	AMACC10	306	1	66636	66780	3712084	Sonora	TUO
Tuolumne	38056	58510	1	2	Larca laceyi	Lacey's Cave pseudoscorpion	ILARA3901	1	2	58472	58510	3812013	Columbia S	TUO
Tuolumne	38055	58508	1	2	Pseudogarypus orpheus	Music Hall Cave pseudoscorpion	ILARA4001	1	2	58472	58508	3812013	Columbia S	TUO
Tuolumne	18705	9795	1	1	Agrostis hendersonii	Henderson's bent grass	PMPOA04	2	1	17315	9795	3712085	New Melor	CAL
Tuolumne	21235	23072	1	2	Monadenia mormonum hirsuta	hirsute Sierra sideband	IMGASC70	1	1	13332	23072	3712084	Sonora	TUO
Tuolumne	57999	75937	1	1	Lomatium congdonii	Congdon's lomatium	PDAPI1B0B	21	1	74934	75937	3712085	New Melor	TUO
Tuolumne	37434	57559	1	1	Eryngium pinnatisectum	Tuolumne button-celery	PDAPI0Z0P	9	1	57543	57559	3712084	Sonora	TUO
Tuolumne	37432	57550	1	1	Eryngium pinnatisectum	Tuolumne button-celery	PDAPI0Z0P	7	1	57534	57550	3712084	Sonora	TUO
Tuolumne	37435	57574	1	1	Eryngium pinnatisectum	Tuolumne button-celery	PDAPI0Z0P	12	1	57558	57574	3812014	Columbia	TUO
Tuolumne	29545	48874	1	2	Rana draytonii	California red-legged frog	AAABH010	570	1	48874	48874	3812014	Columbia	TUO
Tuolumne	61876	78662	1	1	Erythronium tuolumnense	Tuolumne fawn lily	PMLIL0U0H	34	1	77761	78662	3812014	Columbia	TUO
Tuolumne	37815	58242	1	2	Banksula melones	Melones Cave harvestman	ILARA1401	21	1	58206	58242	3812014	Columbia	TUO
Tuolumne	7033	2307	1	2	Eumops perotis californicus	western mastiff bat	AMACD02	21	1	33268	2307	3712084	Sonora	TUO
Tuolumne	9238	41048	1	2	Lavinia symmetricus ssp. 1	San Joaquin roach	AFCJB1902	3	1	41048	41048	3712084	Sonora	TUO
Tuolumne	35505	9019	3	1	Allium tuolumnense	Rawhide Hill onion	PMLIL022V	20	1	21239	9019	3712084	Sonora	TUO
Yuba	26669	43393	1	1	Downingia pusilla	dwarf downingia	PDCAM06	95	1	43393	43393	3912124	Browns Val	YUB
Yuba	2788	25587	1	2	Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB020	91	2	11092	25587	3912125	Yuba City	YUB
Yuba	2504	16655	1	1	Pseudobahia bahiifolia	Hartweg's golden sunburst	PDAST7P01	10	2	11092	16655	3912125	Yuba City	YUB

1 mile	Presumed I	Natural/Na	U	N	196504XX	196504XX	PVT	None	None	G2	S2.2	1B.2
1 mile	Possibly Ex	Natural/Na	X	N	19920618	19050723	UNKNOWN	None	None	G2	S2.2	1B.2
1 mile	Extirpated	Natural/Na	X	N	19900408	192803XX	PVT	Threatened	Endangered	G2	S2.1	1B.1
1 mile	Presumed I	Natural/Na	U	N	19210419	19210419	UNKNOWN	None	None	G2	S2.2	1B.2
1 mile	Extirpated	Natural/Na	X	N	19270313	19270313	UNKNOWN	None	Threatened	G2	S2.1	1B.1
nonspecific	Presumed I	Natural/Na	U	N	197507XX	197507XX	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
3/5 mile	Presumed I	Natural/Na	U	N	1973XXXX	1973XXXX	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
nonspecific	Presumed I	Natural/Na	U	N	197507XX	197507XX	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
nonspecific	Presumed I	Natural/Na	U	N	197507XX	197507XX	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
nonspecific	Presumed I	Natural/Na	U	N	197507XX	197507XX	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
nonspecific	Presumed I	Natural/Na	U	N	197507XX	197507XX	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
nonspecific	Extirpated	Natural/Na	X	N	1986XXXX	19140326	PVT	Endangered	Endangered	G1	S1.1	1B.1
nonspecific	Extirpated	Natural/Na	X	N	1974XXXX	1974XXXX	PVT	Threatened	Endangered	G2	S2.1	1B.1
2/5 mile	Presumed I	Natural/Na	D	N	20000710	20000710	UNKNOWN	None	Threatened	G5	S2	
2/5 mile	Presumed I	Natural/Na	U	N	197507XX	197507XX	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
2/5 mile	Presumed I	Natural/Na	U	N	197507XX	197507XX	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
2/5 mile	Presumed I	Natural/Na	U	N	197507XX	197507XX	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
2/5 mile	Presumed I	Natural/Na	U	N	197507XX	197507XX	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
2/5 mile	Presumed I	Natural/Na	U	N	197507XX	197507XX	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
1/5 mile	Presumed I	Natural/Na	U	N	1973XXXX	1973XXXX	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
1/5 mile	Presumed I	Natural/Na	U	N	1990XXXX	1990XXXX	PVT	None	Threatened	G5	S2	
nonspecific	Presumed I	Natural/Na	U	N	19890623	19890623	UNKNOWN	Endangered	Threatened	G4T2T3	S2S3	
80 meters	Presumed I	Natural/Na	C	N	20000620	20000620	PVT	None	Threatened	G5	S2	
1 mile	Presumed I	Natural/Na	U	N	1994XXXX	1994XXXX	PVT	None	None	G2	S2	1B.3
1 mile	Presumed I	Natural/Na	U	N	1994XXXX	1994XXXX	PVT	None	None	G2	S2.2	1B.2
1 mile	Presumed I	Natural/Na	U	N	19910517	19910517	UNKNOWN	None	None	G5	S3	
1 mile	Presumed I	Natural/Na	U	N	19730120	19730120	UNKNOWN	None	None	G1G2	S1	
1 mile	Presumed I	Natural/Na	U	N	19761224	19761224	UNKNOWN	None	None	G1G2	S1	
1 mile	Presumed I	Natural/Na	U	N	19360407	19360407	UNKNOWN	None	None	G1Q	S1.1	3.2
1 mile	Presumed I	Natural/Na	U	N	XXXXXXXX	XXXXXXXX	UNKNOWN	None	None	G1G2T1	S1	
4/5 mile	Presumed I	Natural/Na	U	N	19550429	19550429	UNKNOWN	None	None	G2	S2.2	1B.2
nonspecific	Presumed I	Natural/Na	U	N	1983XXXX	1983XXXX	PVT?	None	None	G2	S2	1B.2
nonspecific	Presumed I	Natural/Na	U	N	1983XXXX	1983XXXX	PVT?	None	None	G2	S2	1B.2
nonspecific	Presumed I	Natural/Na	U	N	1983XXXX	1983XXXX	UNKNOWN	None	None	G2	S2	1B.2
2/5 mile	Presumed I	Natural/Na	U	N	19750207	19750207	UNKNOWN	Threatened	None	G4T2T3	S2S3	
2/5 mile	Presumed I	Natural/Na	U	N	19640411	19640411	UNKNOWN	None	None	G3	S3.2	1B.2
2/5 mile	Presumed I	Natural/Na	U	N	19790401	19790401	UNKNOWN	None	None	G2G3	S2S3	
1/5 mile	Presumed I	Natural/Na	U	N	19950711	19950711	BOR	None	None	G5T4	S3?	
specific are	Presumed I	Natural/Na	B	N	19981120	19981120	TUO COUN	None	None	G5T3Q	S3	
specific are	Presumed I	Natural/Na	B	N	19980422	19980422	PVT-SONOI	None	None	G2	S2	1B.2
5 miles	Presumed I	Natural/Na	U	N	1999XXXX	1999XXXX	DOD-BEALE	None	None	G3	S3.1	2.2
1 mile	Presumed I	Natural/Na	U	N	19760627	19760627	UNKNOWN	Candidate	Endangered	G5T3Q	S1	
1 mile	Extirpated	Natural/Na	X	N	1848XXXX	1848XXXX	UNKNOWN	Endangered	Endangered	G2	S2.1	1B.1

APPENDIX E

Cultural Resources Sites Identified by the
California Historic Resources Information System

Table D-1
Cultural Resources Identified at the Information Centers of the California Historic Resources Information System

Segment Number	Segment Name	# Prehistoric Resources	# Historic Resources	Resource Description	CHRIS Resource Number	County	Quad Name
4	Jackson		1	Historic subdivision tract within project corridor	P-1619	Amador	Jackson
5	Fresno			No known resources		Fresno	
6	Bakersfield		1	Historic building with ancillary structures adjacent to road right-of-way	P- 12201	Kern	Lamont
6	Bakersfield		6	Historic single-family postwar-era homes adjacent to road right-of-way	P-11727 through P-11732	Kern	Lamont
7	Stockton			No known resources noted immediately adjacent to project corridor		San Joaquin	
8	Turlock			No known resources noted immediately adjacent to project corridor		Stanislaus	
9	Modesto Urban		7	Buildings and railroad segment and ancillary structures adjacent to project corridor	P-445, P-446, and P-4167 through P-4171	San Joaquin	Escalon
10	Madera		1	Madera County Courthouse	P-2516	Madera	Madera
11	Merced		2	Historic buildings on Castle AFB	P-457 and P-460	Merced	Atwater
11	Merced		7	Resources clustered in one-square-block area, all historic buildings (i.e., Merced Theatre, post office)	P-24-972, P-24-1600, P-24-1598, P-24-1595, P-24-1589, P-24-1579, P-633	Merced	Merced
12	Hanford-Visalia		1	Melga Canal crossing	P-251	Kings	Remnoy
12	Hanford-Visalia		1	Ditch crossing	P-250	Kings	Remnoy
12	Hanford-Visalia		1	Lakeside Ditch crossing	P-252	Kings	Remnoy
12	Hanford-Visalia		1	Highline Canal crossing	P-253	Kings	Remnoy

Table D-1
Cultural Resources Identified at the Information Centers of the California Historic Resources Information System

Segment Number	Segment Name	# Prehistoric Resources	# Historic Resources	Resource Description	CHRIS Resource Number	County	Quad Name
12	Hanford-Visalia		2	Radio station and single-family residence adjacent to project corridor	P-203 and P-204	Kings	Remnoy
13	Visalia-Tulare		2	Noted historical human-made ditch and row of planted trees within project corridor	P-4622 and P-4629	Tulare	Cairns Corner
13	Visalia-Tulare		1	Four segments of Southern Pacific RR recorded at intersections with Caltrans rights-of-way	P-4626	Tulare	Exeter
14	Porterville-Tulare		1	Pioneer Ditch	P-4354	Tulare	Porterville
14	Porterville-Tulare		1	Downtown Porterville (given preliminary designation as Historic District)	P-4700	Tulare	Porterville
15	Waukena-Lemoore			No resources noted within or adjacent to project corridor		Kings	
16	Stockton-Milton		2	Bridge; abandoned segment of old Highway 4	BR29C-171, P-465, CA-SJO-271H	San Joaquin	Farmington
16	Stockton-Milton	3		Lithic scatter sites	CA-STA-398, CA-STA-69, CA STA-163	San Joaquin	Farmington
16	Stockton-Milton	1		Prehistoric rock shelter site	CA-STA-97	Stanislaus	Bachelor Valley
16	Stockton-Milton	2		Prehistoric lithic scatter sites	P-1802	Stanislaus	Bachelor Valley
17	Stockton South		7	Single-family homes	P-4177 through P-4183	San Joaquin	Avena
17	Stockton South		2	Railroad and railroad crossing	P-39-000015, P-4186	San Joaquin	Avena
17	Stockton South		5	Historic homes, structure, and school adjacent to road right-of-way	P-4950, P-4957, P-431 through P-433	San Joaquin	Stockton East

Table D-1
Cultural Resources Identified at the Information Centers of the California Historic Resources Information System

Segment Number	Segment Name	# Prehistoric Resources	# Historic Resources	Resource Description	CHRIS Resource Number	County	Quad Name
18	Modesto Rural		1	Vicinity of "Empire City" and associated cemetery, CHL #418.	P-547	Stanislaus	Ceres
19	Tuolumne		1	Historic structure, system of rock walls associated with Beckwith Ranch complex	CA-TUO-4714	Tuolumne	Sonora
19	Tuolumne		1	NRHP Sugg house	P-5578	Tuolumne	Sonora
20	Calaveras E	1	1	Discontinuous prehistoric/historic site	P-192	Calaveras	San Andreas
20	Calaveras E		4	Buildings, almond tree	P-483, P-2590, P-2108	Calaveras	Mokelumne Hill
20	Calaveras E	1		Prehistoric burials	P-3372	Calaveras	Mokelumne Hill
20	Calaveras E	1	2	House, store, milling features	P-244, P-2274	Calaveras	Calaveritas
20	Calaveras E	1 site, 1 BRM isolate	5	Prehistoric milling site; historic ditches, abandoned road segment, and mine tailings	CA-1722/H; P-2056; P-2049, P-2057; CA-1609H; CA-1369H; and CA-CAL-2054	Calaveras	Angels Camp
21	Red Mule North	1		BRM site	AMA-599	Amador	Fiddletown
21	Red Mule North		2	Winery, Historic District	P-1509, P-1481	Amador	Fiddletown
22	Sandrini-Ducor		1	Forty Acres purchased by the United Farm Workers Union in 1966. *NRHP 30168 Garces Hwy.	P-7045	Tulare	Delano West
23	Dinuba-Reedley		4	Railroad crossing, Dinuba Town Ditch, landscape architecture, and two commercial buildings	P-3621, P-3625, P-3603, P-3604	Tulare	Reedley
23	Dinuba-Reedley		1	Historic Orosi Branch Library building adjacent to project right-of-way	P-4004	Fresno	Orange Cove South
24	Placer	1		BRM outcrop in right-of-way that appears to have dislodged from upslope	PLA-33	Placer	Auburn

Table D-1
Cultural Resources Identified at the Information Centers of the California Historic Resources Information System

Segment Number	Segment Name	# Prehistoric Resources	# Historic Resources	Resource Description	CHRIS Resource Number	County	Quad Name
24	Placer		1	Colfax Segment of Central Pacific Transcontinental Railroad	PLA-841-H	Placer	Colfax
26	El Dorado S		8	Historical structures located adjacent to project corridor in Diamond Springs and Perks Corner		El Dorado	Placerville
27	Nevada		1	Bear River Canal	PLA-1366-H, P-1745	Nevada	Chicago Park
27	Nevada	1		Prehistoric site	NEV-968	Nevada	Grass Valley
28	Yuba		1	Historical cemetery	649-H	Yuba	Smartville
28	Yuba		5	Buildings	1672 through 1676 H	Yuba	Yuba City
28	Yuba		2	Historical mining features located adjacent to project corridor	1421-H, 1502-H	Yuba	Browns Valley
29	Colusa			No known resources recorded within or immediately adjacent to project corridor			
29	Sutter		2	Levee crossings	SUT-147-H	Sutter	Sutter Buttes
30	Tulare-Waukena			No known resources located adjacent to project corridor			
Total Prehistoric Sites		**13**					
Total Historic Sites			**95**				

Notes: AFB = Air Force Base; BRM = bedrock mortar; Caltrans = California Department of Transportation; CHL = California Historic Landmark; CHRIS = California Historic Resources Information System; NRHP = National Register of Historic Places; RR = Railroad
Source: Data compiled by AECOM in 2010

APPENDIX F

Records of Native American Coordination

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, DC 20230

NOTICE OF ORGANIZATION(S) WHICH WERE SENT PROPOSED BROADBAND PROJECT NOTIFICATION INFORMATION

Date: 10/08/2010
Reference Number:

CVIN, LLC
DAVID DOUGLAS
H.C. HOOVER BUILDING, ROOM 4228
14TH STREET AND CONSTITUTION AVENUE, NW
WASHINGTON, DC 20230

Dear Sir or Madam:

The National Telecommunications and Information Administration (NTIA) is using a modified version of the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS) as a means of expediting its Broadband Technology Opportunities Program (BTOP), part of President Obama's American Recovery and Reinvestment Act of 2009 (ARRA). This notice is to inform you that the following authorized parties were sent information about the application that you submitted to BTOP.

Those authorized parties who have received the information about your BTOP application include leaders of federally-recognized American Indian Tribes, including Alaska Native villages (collectively "Tribes"), or their designees, Native Hawaiian Organizations (NHOs), and State Historic Preservation Officers (SHPOs). For your convenience in identifying the referenced Tribes and in making further contacts, the City and State of the Seat of Government for each Tribe and NHO, as well as the designated contact person is included in the list below. NTIA notes that Tribes might attach religious and cultural significance to historic properties located in their ancestral homelands or other areas far removed from their current Seat of Government.

The information you provided was forwarded to the following Tribes and NHOs who have set their geographic preferences on TCNS.

1. Cultural Coordinator - Ray Stands - Fallon Paiute-Shoshone Tribe - Fallon, NV - electronic mail
Details: The Fallon Paiute Shoshone Tribe requires the information listed below for all proposed projects (including collocations). Please note that we require at least three pages of information for each submittal.

Page one - Please provide us with your project number, the TCNS number for the proposed project (this is very important), the site address, the site locus (topographic quadrangle), the subject property, a property description, and let us know whether or not there will be any ground disturbance. If there will be ground disturbance, please explain the extent of the disturbance. Please also provide any additional information that you may have regarding this proposed project (any available archaeological reports, for example), and please provide us with your contact information.

Page two - Please provide us with figures, drawings, and maps of the proposed project and proposed location of the project.

Page three - Please provide us with any photographs of the proposed site, and let us know the direction from which each photograph was taken (taken from the north, south, east or west, looking up or looking down, etc.).

Please send this information in paper copy to: Ray Stands, Cultural Coordinator, Fallon Paiute Shoshone Tribe, 565 Rio

Vista Drive, Fallon, Nevada 89406.

Thank you!
Ray Stands, Cultural Coordinator
(775) 423-8065, x228 (Pacific Time)

2. THPO - Darrel Cruz - Washoe Tribe of Nevada & California - Gardnerville, NV - electronic mail

3. Environmental Program Director - LeAnn Skrzynski - Kaibab Paiute Tribe - Fredonia, AZ - electronic mail

If the applicant/tower builder receives no response from the Kaibab Paiute Tribe within 30 days after notification through TCNS, the Kaibab Paiute Tribe has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Kaibab Paiute Tribe in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

4. Chairperson - Catherine Saubel - Los Coyotes Reservation - Warner Springs, CA - electronic mail
Details: If the Applicant receives no response from the Los Coyotes Reservation within 30 days after notification through TCNS, the Los Coyotes Band of Indians has no interest in participating in pre-construction review for the proposed site. The Applicant, however, must immediately notify the Los Coyotes Band of Indians in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

5. Cultural Resources Specialist - Marcos Guerrero - United Auburn Indian Community - Auburn, CA - electronic mail

6. Tribal Chairperson - Elizabeth D Kipp - Big Sandy Rancheria Band of Western Mono Indians - Auberry, CA - electronic mail

If the applicant/tower builder receives no response from the Big Sandy Rancheria Band of Western Mono Indians within 30 days after notification through TCNS, the Big Sandy Rancheria Band of Western Mono Indians has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Big Sandy Rancheria Band of Western Mono Indians in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

7. Cultural Preservation Officer - Melissa Powell - Chicken Ranch Rancheria - Jamestown, CA - electronic mail

8. EPA Director - Lonnie Bill - Cold Springs Rancheria - Tollhouse, CA - electronic mail
Details: For EVERY proposed site, the Cold Springs Rancheria requires a topo map with the proposed location marked with an 'x' or an arrow. Please send the topo map to us via both e-mail and regular mail. Our e-mail address is csranchierialonnie@netptc.net. ForU.S. mail, please send to: Lonnie Bill, EPA Director; Cold Springs Rancheria; P.O. Box 209; Tollhouse, CA 93667. Thank you!
Sincerely,
Lonnie Bill, EPA Director
559-855-4443

9. Operations Manager - Shannon Morganson - Colusa Indian Community Council - Colusa, CA - electronic mail

10. WEPA Director - David C Jones - Cortina Indian Rancheria - Williams, CA - electronic mail
Details: Tribe wishes to receive notifications for only five counties in CA: Butte, Colusa, Glenn, Sutter, and Yolo

If the applicant/tower builder receives no response from the Cortina Indian Rancheria within 30 days after notification through TCNS, the Cortina Indian Rancheria has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Cortina Indian Rancheria in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

11. Chairwoman - Glenda Nelson - Enterprise Rancheria - Oroville, CA - electronic mail
Details: We are interested in this location. Please contact the Enterprise Rancheria as soon as possible via U.S. Mail at:

Ren Reynolds, EPA Planner
Enterprise Rancheria
3690 Olive Highway
Oroville, CA 95966

Please provide us with your project plans, the location of the proposed site, and a street map or a topo map with the proposed location marked with an 'x' or an arrow. Do not proceed with construction until you hear back from us. Thank you!

12. Environmental Director - Crista Stewart - Greenville Rancheria - Greenville, CA - electronic mail

13. Tribal Administrator - Rudy Inog - Grindstone Rancheria - Elk Creek, CA - electronic mail
Details: We only wish to receive notices for projects that are located in Glenn, Colusa, & Tehama counties. We are located in Glenn county and have no interest in projects located outside of the areas mentioned above. Thank you!!!!

14. Cultural Heritage Chairperson - Billie Blue Elliston - Ione Band of Miwok Indians - Ione, CA - electronic mail

If the applicant/tower builder receives no response from the Ione Band of Miwok Indians within 30 days after notification through TCNS, the Ione Band of Miwok Indians has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Ione Band of Miwok Indians in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

15. Cultural Resources Representative - Sam Baugh - Jackson Rancheria - Plymouth, CA - electronic mail
Details: If the Applicant/tower constructor has not received a response from the Jackson Rancheria within 30 days, the Jackson Rancheria has no interest in this site. However, if the Applicant/tower constructor discovers human remains or archeological resources, the Applicant/tower constructor must immediately stop construction and notify the affected local Tribes and the Jackson Rancheria in accordance with FCC rules.

16. Executive Secretary - Laura Winners - Mooretown Rancheria - Oroville, CA - electronic mail

17. Chairperson - Elaine Fink - North Fork Rancheria - North Fork, CA - electronic mail
Details: If the Applicant/tower builder receives no response from the North Fork Rancheria within 30 days after notification through TCNS, the North Fork Rancheria has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must notify the North Fork Rancheria in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

North Fork Rancheria Environmental Dept. : 559-877-2461 x321 or x320

18. Cultural Specialist - Mary Motola - Picayune Rancheria of Chukchansi Indians - Coarsegold, CA - electronic mail

19. Cultural Resource Information Specialist - Phoebe Bender - Yocha Dehe Wintun Nation - Brooks, CA - electronic mail
Details: The Rumsey Rancheria has re-adopted its ancestral name. We are once again the Yocha Dehe Wintun Nation (pronounced YO-cha DEE-hee).

20. Cultural Specialist & NAGPRA Coordinator - Lalo Franco - Santa Rosa Rancheria Tachi Yokut Tribe - Lemoore, CA - electronic mail

21. Chairperson - Silvia Burley - California Valley Miwok Tribe - Stockton, CA - electronic mail

22. Director of Cultural Resources - Daniel Fonseca - Shingle Springs Rancheria - Shingle Springs, CA - electronic mail

23. Cultural Resources Director - Robert Pennell - Table Mountain Rancheria - Friant, CA - electronic mail

If the applicant/tower builder receives no response from the Table Mountain Rancheria within 30 days after notification through TCNS, the Table Mountain Rancheria has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Table Mountain Rancheria in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

24. Environmental Program Manager - Kerri Vera - Tule River Reservation - Porterville, CA - electronic mail

25. Cultural Resources Coordinator - Robert Cox - Tuolumne Rancheria - Tuolumne, CA - electronic mail

26. Acting THPO - Barbara Durham - Timbisha Shoshone Tribe - Death Valley, CA - electronic mail
Details: If the Applicant receives no response from the Tribe within 30 days after notification through TCNS, the Tribe has no interest in participating in pre-construction review for the site. The Applicant, however, must notify the Tribe in the event archeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

27. General Legal Counsel - Arnold D Samuel - Buena Vista Rancheria - Sacramento, CA - electronic mail

If the applicant/tower builder receives no response from the Buena Vista Rancheria within 30 days after notification through TCNS, the Buena Vista Rancheria has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Buena Vista Rancheria in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

The information you provided was also forwarded to the additional Tribes and NHOs listed below. These Tribes and NHOs have NOT set their geographic preferences on TCNS Broadband, and therefore they are currently receiving tower notifications for the entire United States.

The information you provided was also forwarded to the following SHPOs in the state in which you propose to construct and neighboring states. The information was provided to these SHPOs as a courtesy for their information and planning.

28. Deputy SHPO - Carol Griffith - Arizona State Parks - Phoenix, AZ - electronic mail

29. Deputy SHPO - William Collins - Arizona State Parks - Phoenix, AZ - electronic mail

30. SHPO - Ronald James - Historic Preservation Office - Carson City, NV - electronic mail

Please be advised that the NTIA cannot guarantee that the contact(s) listed above opened and reviewed an electronic or regular mail notification. NTIA will contact you shortly to identify the next steps required for completing review under Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470f and its implementing regulations (36 CFR Part 800).

The following information relating to the proposed project was forwarded to the person(s) listed above:

Notification Received: 10/01/2010

Notification ID: 68732
Project Number: 6451
Applicant: CVIN, LLC
Applicant Contact: David Douglas

Project Type(s): Multiple Project Components

Region(s) affected (State, County): CALIFORNIA, AMADOR CALIFORNIA, CALAVERAS CALIFORNIA, COLUSA CALIFORNIA, EL DORADO CALIFORNIA, FRESNO CALIFORNIA, KERN CALIFORNIA, KINGS CALIFORNIA, MADERA CALIFORNIA, MARIPOSA CALIFORNIA, MERCED CALIFORNIA, NEVADA CALIFORNIA, PLACER CALIFORNIA, SAN JOAQUIN CALIFORNIA, STANISLAUS CALIFORNIA, SUTTER CALIFORNIA, TULARE CALIFORNIA, TUOLUMNE CALIFORNIA, YUBA

Address or Geographical Location Description: Please visit the following URL for maps related to this project: http://www.cvngbip.org/overview/map.html.

If you have any questions or comments regarding the content of this notice, please contact NTIA at btoptcns@ntia.doc.gov or the following:

Frank Monteferrante, Ph.D.
Environmental Compliance Specialist
Broadband Technology Opportunities Program
H.C. Hoover Building, Room 4228
14th St. and Constitution Avenue, NW
Washington, D.C. 20230
Telephone: (202) 482-1303
Fax: (202) 501-8009
Electronic Mail: btoptcns@ntia.doc.gov

Katherine Erolinda Perez
P.O. Box 717
Linden, CA 95236

North Fork Rancheria
Elaine Fink, Chairperson
P.O. Box 929
North Fork, CA 93643

North Fork Rancheria
Gaylen Lee
P.O. Box 869
North Fork, CA 93643

North Fork Rancheria
Martha Caballero, Tribal Administrator
P.O. Box 929
North Fork, CA 93643

California Valley Miwok Tribe
Silvia Burley
1163 E. March Lane, Ste D, PMB #812
Stockton, CA 95210

California Valley Miwok Tribe
Debra Grimes, Cultural Preservation Specialist
P.O. Box 1015
West Point, CA 95255

Picayune Rancheria of Chuckchansi
Morris Reid, Chairperson
46575 Road 417
Coarsegold, CA 93614

Picayune Rancheria of Chuckchansi
Sammuel Elizondo, Environmental Director
46575 Road 417
Coarsegold, CA 93614

Picayune Rancheria of Chuckchansi
Mary Motola, Cultural Specialist
46575 Road 417
Coarsegold, CA 93614

Patricia Ann Murphy Brattland
600 Coldstream Drive
El Cajon, CA 92020

Grindstone Rancheria of Wintun-Wailaki
Ronald Kirk, Chairperson
P.O. Box 63
Elk Creek, CA 95939

Southern Sierra Miwuk Nation
Jay Johnson, Spiritual Leader
5235 Allred Road
Mariposa, CA 95338

Southern Sierra Miwuk Nation
Anthony Brochini, Chairperson
P.O. Box 1200
Mariposa, CA 95338

Southern Sierra Miwuk Nation
Les James, Spiritual Leader
P.O. Box 1200
Mariposa, CA 95338

Amah Mutsun Tribal Band
Valentin Lopez, Chairperson
3015 Eastern Ave, #40
Sacramento, CA 95821

Amah Mutsun Tribal Band
Edward Ketchum
35867 Yosemite Ave.
Davis, CA 95616

Wintun Environmental Protection Agency
Dave Jones
P.O. Box 1839
Williams, CA 95987

Yocha Dehe Wintun Nation
Marshall McKay, Chairperson
P.O. Box 18
Brooks, CA 95606

Yocha Dehe Wintun Nation
Reno Franklin, Cultural Resources Director
P.O. Box 18
Brooks, CA 95606

Yocha Dehe Wintun Nation
Leland Kinter, Native Cultural Renewal Committee
P.O. Box 18
Brooks, CA 95606

Yocha Dehe Wintun Nation
Cynthia Clark, Native Cultural Renewal
P.O. Box 18
Brooks, CA 95606

Grindstone Rancheria of Wintun-Wailaki
Regina Dock
P.O. Box 63
Elk Creek, CA 95939

Cortina Band of Indians
Chairperson
P.O. Box 1630
Williams, CA 95987

Cortina Band of Indians
Thelma Brafford, Tribal Administrator
P.O. Box 1630
Williams, CA 95987

Colusa Indian Community Council
Wayne Mitchem, Chairperson
3730 Highway 45
Colusa, CA 95932

Colusa Indian Community Council
Shannon Morganson, Tribal Administrator
3730 Highway 45
Colusa, CA 95932

Colusa Indian Community Council
Tammy Fullerton, Environmental Coordinator
3730 Highway 45
Colusa, CA 95932

Paskenta Band of Nomlaki Indians
Everitt Freeman, Chairperson
P.O. Box 398
Orland, CA 95963

Kesner Flores
P.O. Box 1047
Wheatland, CA 95692

Mechoopda Indian Tribe of Chico Rancheria
Dennis E. Ramirez, Chairperson
125 Mission Ranch Blvd.
Chico, CA 95926

Cold Springs Rancheria of Mono Indians
Robert Marquez, Chairperson
P.O. Box 209
Tollhouse, CA 93667

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
P.O. Box 410
Friant, CA 93626

Mechoopda Indian Tribe of Chico Rancheria
Paula Cuddeford, Tribal Administrator
125 Mission Ranch Blvd.
Chico, CA 95926

Mechoopda Indian Tribe of Chico Rancheria
Mike DeSpain, Director – OEPP
125 Mission Ranch Blvd.
Chico, CA 95926

Tule River Indian Tribe
Ryan Garfield, Chairperson
P.O. Box 589
Porterville, CA 93258

North Valley Yokuts Tribe
Katherine Erolinda Perez
P.O. Box 717
Linden, CA 95236

Buena Vista Rancheria
Rhonda Morningstar Pope, Chairperson
P.O. Box 162283
Sacramento, CA 95816

Tuolumne Band of Me-Wuk
Kevin Day, Chairperson
P.O. Box 699
Tuolumne, CA 95379

Tuolumne Band of Me-Wuk
Mary Camp, Tribal Administrator
P.O. Box 699
Tuolumne, CA 95379

Tuolumne Band of Me-Wuk
Stanley Cox, Cultural Resources Director
P.O. Box 699
Tuolumne, CA 95379

Tuolumne Band of Me-Wuk
Reba Fuller
P.O. Box 699
Tuolumne, CA 95379

Santa Rosa Rancheria
Rueben Barrios, Chairperson
P.O. Box 8
Lemoore, CA 93245

North Fork Mono Tribe
Ron Goode, Chairperson
13396 Tollhouse Road
Clovis, CA 93619

Kings River Choinumni Farm Tribe
John Davis, Chairman
1064 Oxford Ave.
Clovis, CA 93612

Dumna Wo-Wah Tribal Government
Keith F. Turner, Tribal Contact
P.O. Box 306
Auberry, CA 93602

Dumna Wo-Wah Tribal Government
Jim Redmoon, Cultural Resources Representative
724 W. Fountain
Fresno, CA 93705

Dunlap Band of Mono Historical Preservation Society
Mandy Marine, Board Chairperson
P.O. Box 18
Dunlap, CA 93621

Chowchilla Tribe of Yokuts
Jerry Brown
10553 N. Rice Road
Fresno, CA 93720

The Choinumni Tribe of Yokuts
Rosemary Smith, Chairperson
1505 Barstow
Clovis, CA 96311

Wukchumni Tribe
John Sartuche
929 N. Lovers Lane
Visalia, CA 93292

Jennifer Malone
637 E. Lakeview
Woodlake, CA 93286

Shingle Springs Band of Miwok Indians
John Tayaba, Vice Chairperson
P.O. Box 1340
Shingle Springs, CA 95682

Tubatulabals of Kern Valley
Donna Begay, Tribal Chairwoman
P.O. Box 226
Lake Isabella, CA 93240

Santa Rosa Rancheria
Lalo Franco, Director Cultural Department
P.O. Box 8
Lemoore, CA 93245

Esohm Valley Band of Indians/Wuksache Tribe
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906

Tule River Indian Tribe
Ryan Garfield, Chairperson
P.O. Box 589
Porterville, CA 93258

Kern Valley Indian Council
Robert Robinson, Co-Chairperson
P.O. Box 401
Weldon, CA 93283

Ron Wermuth
P.O. Box 168
Kernville, CA 93238

Sierra Nevada Native American Coalition
Lawrence Bill, Interim Chairperson
P.O. Box 125
Dunlap, CA 93621

Big Sandy Rancheria of Mono Indians
Liz Hutchins Kipp, Chairperson
P.O. Box 337 / 37302
Auberry, CA 93602

Choinumni Tribe
Lorrie Planas
3736 Palo Alto
Clovis, CA 93611

Traditional Choinumni Tribe
David Alvarez, Chairperson
2415 E. Houston Ave.
Fresno, CA 93720

Washoe Tribe of Nevada and California
Waldo Walker, Chairperson
919 Highway 395 South
Gardnerville, NV 89410

Shingle Springs Band of Miwok Indians
Nicholas Fonseca, Chairperson
P.O. Box 1340
Shingle Springs, CA 95682

Rose Enos
15310 Bancroft Road
Auburn, CA 95603

United Auburn Indian Community of the Auburn Rancheria
David Keyser, Chairperson
10720 Indian Hill Road
Auburn, CA 95603

United Auburn Indian Community of the Auburn Rancheria
Marcos Guerrero, Tribal Representative Committee
10720 Indian Hill Road
Auburn, CA 95603

United Auburn Indian Community of the Auburn Rancheria
Gregory S. Baker, Tribal Administrator
10720 Indian Hill Road
Auburn, CA 95603

Todd Valley Miwok-Maidu Cultural Foundation
Christopher Suehead, Cultural Representative
P.O. Box 1490
Foresthill, CA 95631

April Wallace Moore
19630 Placer Hills Road
Colfax, CA 95713

Jill Harvey
11799 McCourtney Road
Grass Valley, CA 95949

Washoe Tribe of Nevada and California
Darrel Cruz, Cultural Resources Coordinator
919 Highway 395 South
Gardnerville, NV 89410

T'Si-akim Maidu
Grayson Coney, Cultural Director
P.O. Box 1316
Colfax, CA 95713

T'Si-akim Maidu
Eileen Moon, Vice Chairperson
760 So. Auburn St., Ste 2-C
Grass Valley, CA 95945

Strawberry Valley Rancheria
Cathy Bishop, Chairperson
P.O. Box 667
Marysville, CA 95901

Enterprise Rancheria of Maidu Indians
Art Angle, Vice Chairperson
3690 Olive Highway
Oroville, CA 95966

Enterprise Rancheria of Maidu Indians
Glenda Nelson, Chairperson
3690 Olive Highway
Oroville, CA 95966

Maidu Nation
Clara LeCompte
P.O. Box 204
Susanville, CA 96130

Butte Tribal Council
Ren Reynolds
1693 Mt. Ida Road
Oroville, CA 95966

APPENDIX G

Records of Consultation with the State Historic Preservation Officer

Letter to State Historic Preservation Officer
Regarding Area of Potential Effect

AECOM
2020 L Street, Suite 400
Sacramento, CA 95811
www.aecom.com

916.414.5800 tel
916.414.5850 fax

February 23, 2011

Dr. Milford Wayne Donaldson
Office of Historic Preservation
Department of Parks and Recreation
1725 23rd Street, Suite 100
Sacramento, CA 95816

Subject: Continued Consultation Regarding Broadband Technology Opportunities Program Grantee #6451, Central Valley Independent Network, The Central Valley Next Generation Broadband Infrastructure Project

Dear Dr. Donaldson:

In a letter dated September 30, 2010 the National Telecommunications and Information Administration (NTIA) initiated consultation with your office concerning the proposed Central Valley Independent Network (CVIN) Central Valley Next Generation Broadband Infrastructure Project. Consultation was initiated in accordance with regulations implementing Section 106 of the National Historic Preservation Act (NHPA) (36 Code of Federal Regulations [CFR] 800.3). NTIA is the lead Federal agency for compliance with Section 106 of the NHPA because NTIA proposes to provide funding to CVIN for planning, design, and construction of the proposed project. Funding will be provided to CVIN through the Broadband Technology Opportunities Program (BTOP) as part of the American Recovery and Reinvestment Act (ARRA).

In the September 30, 2010 letter, NTIA identified that this project is an "undertaking" as defined in CFR 800.16(y); provided a preliminary project description; provided a preliminary project overview map; and indicated that the grant recipient will continue consultations with your office on behalf of NTIA. AECOM was retained by CVIN (the grant recipient) to prepare the National Environmental Policy Act compliance document, to assist with consultation under Section 106 of the NHPA, to conduct necessary investigations to identify historic properties in the APE, and to determine appropriate and effective avoidance measures that will result in no adverse effects to historic properties as a result of the construction and operation of the project.

The purpose of this letter is to provide additional and updated project description information and updated project route maps; to define the Area of Potential Effects (APE); determine the scope of identification efforts in accordance with CFR 800.4; and to update your office on activities completed and planned to identify historic properties in the APE.

PROJECT DESCRIPTION

Appendix A to this letter contains an updated project description which reflects the results of route development and project design which has occurred after the preliminary project description was provided with the September 30, 2010 letter to your office. Similarly, Appendix B to this letter contains updated project route and project attribute maps.

AREA OF POTENTIAL EFFECTS

The APE for this undertaking includes all areas subject to ground disturbance (direct APE) and all areas subject to potential changes in the historical setting (indirect APE). The direct APE includes all areas where new fiber conduit will be installed using ground-disturbing construction methods. Because the exact location of conduit installation has not been determined, and also to allow for design flexibility to avoid potential historic properties and other resources, the direct APE includes entire road and state highway rights-of-way, including both sides of roads. The proposed route location is shown in Appendix B.

Although it is not anticipated that conduit will be installed away from road and state highway rights-of-way, if this becomes necessary the direct APE in those "cross-country" areas will be a 100-foot-wide corridor. CVIN has committed to use of existing graveled, paved, or graded areas for equipment lay-down and staging areas if such areas are needed outside of the road and state highway rights-of-way. Because no ground-disturbance or permanent changes in historical setting would result from use of existing equipment yards (graveled, paved, or graded areas), these areas are not included in the APE.

The indirect APE includes the locations of cabinet facilities, above-ground boxes which may be located adjacent to existing buildings at institutions that will be served by the proposed project. No indirect APE has been identified in areas where conduit will be installed because the conduit will be underground and not visible after construction.

The APE does not include areas where fiber will be blown into existing conduit or where existing fiber will be used because these components of the proposed project do not involve ground disturbing activities or changes in historical setting.

SCOPE OF IDENTIFICATION EFFORTS

The scope of identification efforts shall include a review of existing information on cultural resources in and adjacent to the APE, consultation with parties and agencies that may be knowledgeable of cultural resources in the APE, consultation with Native Americans, and a field survey conducted by professionally qualified cultural resource specialists meeting the Secretary of the Interior's Standards.

ACTIVITIES COMPLETED AND PLANNED TO IDENTIFY HISTORIC PROPERTIES IN THE APE

AECOM has completed cultural resources records searches at the regional Information Centers of the California Historical Resources Information System and has identified previously recorded cultural resources in and near the APE as well as areas which have already been adequately inspected for the presence of cultural resources.

The NTIA has initiated consultation with Native Americans, including Federally listed Tribes and all Native American organizations and individuals identified by the California Native American Heritage Commission. Native American consultation is on-going and will be documented in the Cultural Resources Inventory Report that will be prepared following completion of additional inventory efforts.

It is anticipated that AECOM archaeologists and historians will commense field surveys of the APE beginning in late February or early March 2011. Areas which have already been adequately inspected for the presence of cultural resources will not be re-surveyed. The survey intensity in the APE will vary depending on visibility, previous disturbance, previous inspections, and perceived sensitivity for the presence of cultural resources. The exact field methods and intensity of survey will be determined

in the field by the qualified field director. Identified cultural resources will be recorded on standard DPR 523 site record forms and boundaries within the rights-of-way will be recorded using a Global Positioning System devise.

Following completion of the field inventory, AECOM will prepare a Cultural Resources Inventory Report which will describe the proposed project, describe the cultural setting of the project study area, describe the methods used to inventory cultural resources in the APE, describe all identified and previously identified cultural resources in the APE, and describe precisely how the project will avoid adverse effects to each cultural resource.

Because of the schedule constraints associated with the funding of the undertaking, cultural resources will not be evaluated for eligibility for listing on the National Register of Historic Places (NRHP) unless sufficient evidence is available to make such a determination based on surface observation or existing information. In most cases, therefore, eligibility for the NRHP will be assumed and strategies to avoid each resource will be developed and documented in the Inventory Report.

I request concurrence with the determination of the APE and the scope of identification efforts to identify historic properties in the APE. If you have any questions, please contact me at (916) 213-2767 or by email at barry.scott@aecom.com.

Sincerely,

Barry Scott, RPA
Senior Archaeologist

cc: David Nelson, Central Valley Independent Network (CVIN)
Jill Dowling, Department of Commerce

State Historic Preservation Officer
Area of Potential Effect Response

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

March 28, 2011

Reply In Reference To: NTIA101004A

Barry Scott
AECOM
2020 L Street, Suite 400
Sacramento, CA 95811

RE: American Recovery and Reinvestment Act (ARRA)-Funded Broadband Technology Opportunities Program Grantee #6451, Central Valley Independent Network, the Central Valley Next Generation Broadband Infrastructure Project

Dear Mr. Scott:

Thank you for consulting with me on behalf of the National Telecommunications and Information Administration (NTIA) in an effort to comply with Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f), as amended, and its implementing regulation found at 36 CFR Part 800. You are requesting my concurrence with the determination of this undertaking's Area of Potential Effects (APE) and the scope of identification efforts to identify historic properties within this area.

The Central Valley Independent Network (CVIN) and the Corporation for Educational Network Initiatives California (CENIC) are proposing to use an ARRA grant to build, operate, and maintain an approximately 817 mile-long fiber optic communications network in the northern Sacramento Valley, northern Sierra Nevada foothills, and northern and southern San Joaquin Valley. Approximately 723 miles of the route will consist of new construction; the remainder of the route, approximately 94 miles, will use existing conduits. The project area consists of trenching routes in roadside rights-of-way in 17 California counties: Amador, Calaveras, Colusa, El Dorado, Fresno, Kern, Kings, Madera, Merced, Nevada, Placer, San Joaquin, Stanislaus, Sutter, Tulare, Tuolumne, and Yuba.

In the northern Sacramento Valley, the westernmost anchor facility is the Colusa County Office of Education (COE), located in the city of Colusa. From this point, the route will follow the southeast alignment of State Route (SR) 20 (also known as the Colusa Highway) until it reaches the town of Meridian in Sutter County. From Meridian, the line continues for approximately 25 miles until reaching the town of Sutter, then loops through the town and connects to Sutter Union High School before continuing on to Yuba City. In Yuba City, the line will be connected to the Sutter COE Nos. 1 and 2 and the County Library; then continue east (crossing the Feather River) into Marysville. Here the fiber route will connect to the Yuba County Library COE Nos. 1 and 2 and the California Department of Transportation (Caltrans) building, before continuing into Linda to connect to Yuba Community College. From the college, the line heads northeast (north of Beale Air Force Base), and continues in this direction adjacent to the Hammonton-Smartville Road, south of the town of Smartville.

In the Sierra Nevada foothills, the route trends northeast before crossing SR 20 again, where it continues along Mooney Flat Road past Lake Wildwood, joins onto Pleasant Valley/Wildwood Heights Road, then heads east to connect with the Nevada COE in Nevada City (where a cabinet will be installed). The line then turns south on Ridge Road into a loop in Grass Valley, and then south briefly on SR 174, before continuing southwest on McCourtney Road. The route will then run southwest on Lime Kiln and Duggans Roads until it reaches a cabinet site at the Nevada COE No. 2 off of Magnolia Road, just north of Lake of the Pines. Connections will also be made with the Placer COE and the Placer County Library in Auburn before winding east in the foothills along El Dorado Street/SR 49. From there, the conduit will cross the Middle Fork of the American River near the Auburn State Recreation Area and pass into El Dorado County, then jog south along Coloma Road/SR 49 into the town of Cool.

From Cool, the conduit will be routed east along SR 193, past the towns of Greenwood and Georgetown, then south along Marshall Road past Garden Valley to Coloma. The line then winds southward through El Dorado County, making connections to the El Dorado COE and El Dorado County Library. From El Dorado, the line will continue roughly southeast along Missouri Flat Road through the town of Diamond Springs, where it will run adjacent to Pleasant Valley Road/SR 49; it then will proceed adjacent to Bucks Bar Road, continuing in a southeastern direction. The route will then pass near the town of Somerset, continue south adjacent to Mt. Aukum Road, pass near Aukum and River Pines, then turn to Plymouth Shenandoah Road heading south (near Plymouth) before heading east along Fiddletown Road through Fiddletown. Here the conduit will connect with an existing fiber route just east of Fiddletown in Amador County.

The existing fiber route runs between the towns of Volcano and Pine Grove, and the city of Jackson. A small amount of fiber will be constructed in Jackson to connect existing fiber to the Amador COE and Amador County Library. This route extends south across the Mokelumne River; the new fiber conduit will connect with the existing route in the town of Mokelumne Hill. From there, along Hawver Road and Gold Strike Road, the conduit will proceed south into the town of San Andreas, where it will be connected to the Calaveras County Library and a new cabinet site. The route will continue through the town of Angels Camp, where a new cabinet site is established and the route connects to the Calaveras COE. The line will head east through the town of Vallecito along Parrot Ferry Road, cross the Stanislaus River, pass through the town of Columbia, and connect to Columbia College. From the college site, the line will be routed along Sawmill Flat Road/SR 49 into the town of Sonora, connecting to the Tuolumne COE and Tuolumne County Library, and then extended southwest on County Road E15 and SRs 120 and 108 past Jamestown to connect with an existing fiber route near Tulloch Lake.

From Tulloch Lake, the line will be connected at the western end of an existing fiber route in San Joaquin County at the intersection of Rock Creek and Milton Roads. From this point the line will head south, then west, through Farmington before connecting to the San Joaquin COE and San Joaquin County Library. The route then veers south on Yosemite Ave/SR 120, then east through Escalon, south past Denair, and into Modesto

and Stanislaus County. In Modesto, the line will be connected with the Stanislaus COE and Stanislaus County Library. From these points, the line is to head east into Empire before turning south, then southeast on Santa Fe Avenue through Hughson, Denair, and into Turlock, where it will be connected with California State University (CSU) Stanislaus. From CSU Stanislaus, the conduit will continue southeast along County Road 37 past Ballico, where it will cross the Stanislaus River and pass through the town of Winton; the route will then loop in Atwater and Merced, forming connections between existing cellular towers, new cabinet sites, Merced College, the Merced COE, and the Merced County Library. In Madera County, at an existing WilTel site at the intersection of Avenue 24 and Santa Fe Avenue, the proposed route will connect with an existing fiber route and head east for approximately 5.5 miles, then move south along Road 28½ into Madera to connect with the Madera COE and Madera County Library. The line will connect to an existing fiber route near the intersection of Avenue 14 and Road 29 just east of Madera, and then reconnect to an existing fiber run in Fresno. The new fiber route in Fresno will provide connections between the existing fiber route, CSU Fresno, the Fresno COE, Fresno County Library, and the State Center Community College District.

Southeast of Fresno, straddling Fresno and Tulare Counties, a new ring will be constructed to connect Reedley College in Reedley and the communities of Orange Cove, Orosi, and Dinuba. Straddling Kings and Tulare Counties, a similar ring of new fiber will be built to connect the Tulare COE, Tulare County Library, Kings COE, and Kings County Library. This route will also include the towns of Farmersville, Goshen, Home Garden, Hanford, Lemoore, Corcoran, Cairns Corner, Exeter, and various cellular towers in and around these towns. From Tulare, the line is to head east into the town of Lindsay, then south through the town of Strathmore and into Porterville, where it will connect to the Porterville Library and Porterville College; south of Porterville the proposed route will again be connected to an existing fiber route. The line will then proceed along Avenue 56 at the Friant-Kern Canal and head west into Earlimart to connect to Earlimart Elementary School and the Tulare COE hub. At this point, the conduit will run south along Avenue 32/Road 144 through Delano; here the line will head west, terminating in Tulare County at the intersection of Corcoran Road and Garces Highway.

The southernmost ring of the route will be constructed in Kern County in the city of Bakersfield. This ring will connect the Kern Community College District, Kern COE, Kern County Library, CSU Bakersfield, and the Kern County Office of Public Safety, and will provide connections to some rural areas in southeast Bakersfield. The conduit will then run east-west along SR 58 across Keyandee and loop south to cross through or near the communities of Gosford, Vernola, and Wible Orchard along White Lane/East White Lane. The route will also be extended north to south along SR 184 to Mayfair, Lonsmith, Algoso, and Magunden.

Within urban areas, the conduit will be installed primarily through directional drilling (boring), with drilling access points spaced intermittently. Midblock locations under existing sidewalks are the preferred locations for access boxes. Typically, conduits will be installed up to 12 feet under street intersections to avoid concentrations of other

existing utilities. Under some circumstances or to accommodate a local jurisdiction's preference, the conduit may be installed by cutting pavement, excavating a narrow trench, and backfilling and repaving the cut pavement. In areas where existing conduit would be used to install new fiber optic lines, microducts and fiber would be air-jetted or blown into the existing conduit at existing access locations. Installation of fiber into existing conduits using these methods will not require any new ground disturbance—only access to existing buried boxes—and will require two vehicles and an air compressor.

In nonurban areas, the conduits will typically be installed using a plowing technique, in which a tine incises the soil to a depth of 48 inches below the existing ground surface and the conduits are placed in the incised slit at the same time. In areas where the soil matrix prohibits the use of plowing, a narrow trench would be excavated, the conduit would be placed at the bottom of the trench, and the trench would be backfilled and compacted. In areas where right-of-way is very narrow, sensitive environmental resources or habitats need to be avoided, or other circumstances dictate; it may be necessary to cut pavement and install the conduits in a narrow trench below the pavement. In such circumstances, the trench would be backfilled with slurry to ensure proper compaction and pavement integrity. Plowing is the preferred method of construction, where practicable and feasible.

The exact location of conduit installation within road rights-of-way will be determined based on several factors: the presence and location of sensitive environmental resources such as biological habitat, wetlands, drainages, and cultural resources; the locations of existing buried utilities; constructability; and the preference of jurisdictional agencies. Minor route modifications may be made based on these factors.

In the southern San Joaquin Valley region, the proposed route will intersect several large irrigation canals. Where the conduit will cross these canals, directional drilling will occur below the canals, at a minimum of 15 feet below the base of each canal's centerline. The route will also cross several railroads. Where the route would cross railroad alignments, directional drilling would occur below the railroad tracks, at a minimum of 18 feet below the base of the centerline of the tracks. Directional drilling would originate and terminate in the rights-of-way of public roads outside of the railroad right-of-way. The proposed route also crosses several major state highways (SR 41, 99, 198). In each case, the state highways would be crossed either by completing directional drilling under the roadway or by attaching conduits to the bridge over the roadway. The method used will depend on the bridge's age and condition, and if it lies within California Department of Transportation (Caltrans) jurisdiction, and on Caltrans preferences. Where vaults will be placed within Caltrans rights-of-way, approval and installation procedures specified in the Caltrans *Draft Vault Criteria and Encroachment Permit General Provisions* will be followed.

In most cases where the proposed route would cross streams and rivers (such as the Sacramento River, Feather River, Yuba River, North Fork American River, South Fork American River, North Fork Cosumnes River, Middle Fork Cosumnes River, South Fork Cosumnes River, Stanislaus River, Calaveras River, Dry Creek [near Modesto], Merced River, and the Fresno River) directional drilling below the stream would occur, with a

minimum of 15 feet below the centerline of the stream base. Stream crossing origination and completion points will be a minimum of 100 feet from the edge of the stream. Larger stream crossings may be accomplished by attaching conduits to existing bridges, using a 4- to 6-inch galvanized iron pipe attached to the underside of the bridge, depending on the age and condition of the bridge and the preferences of the agency with jurisdiction over the bridge.

If existing power poles are available in the immediate vicinity of the proposed route, aerial fiber inserts may be considered as an alternative to directional drilling to avoid sensitive environmental resources or stream/river crossings. However, because of the vulnerability of the fiber optic line to damage, aerial placement of the fiber optic facility is not a preferred construction technique.

You define the Direct Area of Potential Effects (APE) as all areas subject to ground disturbance and the Indirect APE as all areas subject to potential changes in the historical setting. The Direct APE includes all areas where new fiber conduit will be installed using ground-disturbing construction methods. Because the exact location of conduit installation has yet to be determined, the Direct APE includes entire road and state highway rights-of-way. Although it is not anticipated that conduit will be installed away from road and highway right-of-ways, should this become necessary the Direct APE in these "cross-country" areas will be designated as a 100-foot-wide corridor. As I understand it, CVIN has committed to use of existing gravel-covered, paved, or graded areas for equipment lay-down and staging areas if such areas are needed outside of the rights-of-way. Because no ground disturbance or permanent changes in the historical setting will result from the use of existing equipment yards, these areas will not be included in the APE. The Indirect APE includes the locations of cabinet facilities and above-ground boxes which may be located adjacent to existing buildings at institutions that the project will serve. The Indirect APE will not be extended to areas where the conduit will be installed due to the fact that line will be underground and not visible after construction. Both APE's do not include areas where fiber will be blown into existing conduit or where existing fiber will be used because these components of the project will not necessitate ground disturbance or changes to the historical setting.

The scope of identification efforts shall include a review of existing information on cultural resources in and adjacent to the APE, consultation with parties and agencies that may have additional information about the project area, consultation with Native Americans, and a field survey conducted by cultural resource specialists meeting the Secretary of the Interior's standards.

In addition to your letter, you have provided maps delineating the broadband route and a detailed project description.

Having reviewed your submittal, I concur that the APE has been properly determined and documented pursuant to 36 CFR Parts 800.4 (a)(1) and 800.16(d). I understand that AECOM will soon commence with the above-referenced identification efforts.

Once completed, please submit the results of these investigations, along with analysis of your findings, to me for review and comment. I would also be interested in seeing any comments you might receive from Native American tribal groups or entities.

Thank you for considering historic resources during project planning. I look forward to consulting with you on this important undertaking. If you have any questions or comments, please contact Tristan Tozer of my staff at (916) 445-7027 or email at ttozer@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

APPENDIX H

Airports and Schools within 2 Miles of the Study Area

Table F-1
Airports Within 2 Miles of the Study Area

Airport Name	County
Colusa County Airport	Colusa
Sutter County Airport	Sutter
Beale Air Force Base	Yuba
Hammonton Air Strip	Yuba
Nevada County Air Park	Nevada
Auburn Municipal Airport	Placer
Dubey Airport	El Dorado
Akin Airport	El Dorado
Perryman Airport	El Dorado
Westover-Field Amador County Airport	Amador
Calaveras County Airport	Calaveras
Columbia Airport	Tuolumne
J-B Airport	San Joaquin
Stockton-Metropolitan Airport	San Joaquin
Modesto City-County Airport	Stanislaus
Turlock Airport	Stanislaus
Castle Airport Aviation and Development Center	Merced
Atwater Municipal Airport	Merced
Merced Municipal Airport	Merced
Chowchilla Airport	Madera
Arnold Ranch Airport	Madera
Sierra Sky Park	Fresno
Bland Field	Fresno
Fresno Air Terminal Airport	Fresno
Fresno-Chandler Downtown Airport	Fresno
Kings River Community College Airport	Fresno
Stone Airstrip	Kings
Hanford Municipal Airport	Kings
Blair Strip	Kings
Corcoran Airport	Kings
Salyer Farms Airport	Kings
Alta Airport	Tulare
Thunderhawk Field	Tulare
Eckert Field	Tulare
Bakersfield Municipal Airport	Kern

Source: Data compiled by AECOM in 2010

Table F-2
Schools Within 2 Miles of the Study Area

School Name	County
Colusa High School	Colusa
Sutter Union High School	Sutter
Nuestro School	Sutter
Butte Vista Elementary	Sutter
Franklin Elementary School	Sutter
River Valley High School	Sutter
Yuba City High School	Sutter
Marysville High School	Yuba
Yuba Community College	Yuba
Pleasant Valley Elementary	Nevada
School of the Arts Educational	Nevada
Nevada Union High School	Nevada
Bitney College Prep High School	Nevada
Colfax Elementary School	Placer
Colfax High School	Placer
Weimar Hills Middle School	Placer
Weimar Academy	Placer
Sierra Hills High School	Placer
Clipper Gap Head Start	Placer
Placer High School	Placer
Northside Elementary School	El Dorado
Cool Christian School	El Dorado
Golden Sierra High School	El Dorado
Gold Trail School	El Dorado
Edwin Markham Intermediate	El Dorado
El Dorado High School	El Dorado
Sierra Elementary School	El Dorado
Independent Learning Center	El Dorado
Union Mine High School	El Dorado
Shenandoah High School	El Dorado
Golden Oak Elementary	El Dorado
Mountain Creek Middle School	El Dorado
Plymouth Elementary School	Amador
Community Christian School	Amador
Argonaut High School	Amador

Table F-2
Schools Within 2 Miles of the Study Area

School Name	County
Mokelumne Hill Elementary School	Calaveras
Oakendell Community School	Calaveras
Gold Strike High School	Calaveras
Caleveras High School	Calaveras
Mountain Oaks School	Calaveras
Altaville Grammar School	Calaveras
Bret Harte High School	Calaveras
Mark Twain Elementary School	Calaveras
Vallecito High School	Calaveras
Columbia Elementary School	Tuolumne
Columbia Community College	Tuolumne
Columbia College	Tuolumne
Springfield Community Day School	Tuolumne
Sonora Union High School	Tuolumne
Sonora Elementary School	Tuolumne
Sierra Waldorf School	Tuolumne
Copperopolis Elementary School	Calaveras
Glenwood Elementary School	San Joaquin
St. Mary's High School	San Joaquin
Stagg High School	San Joaquin
Edison High School	San Joaquin
Venture Academy	San Joaquin
Van Allen Elementary School	San Joaquin
El Portal Middle School	San Joaquin
Escalon High School	San Joaquin
Grace M. Davis High School	Stanislaus
Central Catholic High School	Stanislaus
Modesto High School	Stanislaus
Downey Thomas High School	Stanislaus
Johansen Peter High School	Stanislaus
Glick Middle School	Stanislaus
Alice Stroud Elementary School	Stanislaus
Hughson High School	Stanislaus
Turlock Junior High School	Stanislaus
Ballico Elementary School	Merced

Table F-2
Schools Within 2 Miles of the Study Area

School Name	County
Winton Middle School	Merced
Atwater High School	Merced
Saint Anthony's School	Merced
Aileen Colbun Elementary School	Merced
Mitchell Senior Elementary	Merced
Thomas Olaeta Elementary School	Merced
Peggy Heller School	Merced
Challenger Learning Center	Merced
Buhach Colony Special Education	Merced
Valley Community School	Merced
Joe Stefani Elementary School	Merced
McSwain Elementary School	Merced
Gracey School	Merced
Bear Country Pre-School	Merced
Golden Valley High School	Merced
Fuller School	Madera
Gateway Continuing High School	Madera
Fairmead Elementary School	Madera
Berenda School	Madera
James Monroe Elementary School	Madera
Thomas Jefferson Middle School	Madera
Madera High School	Madera
Martin Luther King Middle School	Madera
Madera South High School	Madera
Ripperdan School	Madera
Eastin-Arcola Elementary School	Madera
Sun Empire Elementary	Fresno
Biola-Pershing Elementary School	Fresno
Liberty Intermediate School	Fresno
Kerman High School	Fresno
Kerman Middle School	Fresno
Floyd Kerman Elementary	Fresno
Pershing Continuation High School	Fresno
Central High School	Fresno
Roosevelt Elementary School	Fresno

Table F-2
Schools Within 2 Miles of the Study Area

School Name	County
Polk Elementary School	Fresno
Houghton-Kearney Elementary School	Fresno
Sunset Elementary School	Fresno
Columbia Elementary School	Fresno
Edison High School	Fresno
Computech Middle School	Fresno
Carver Academy Middle School	Fresno
San Joaquin Memorial High School	Fresno
University High School-Fresno	Fresno
Hoover High School	Fresno
Fresno High School	Fresno
Weldon Elementary	Fresno
Century Elementary	Fresno
Buchanan High School	Fresno
Alta Sierra Intermediate School	Fresno
Clovis North High School	Fresno
Clovis West High School	Fresno
Bullard High School	Fresno
Saroyan Elementary School	Fresno
Rio Vista Middle School	Fresno
McCord Elementary School	Fresno
Orange Cove High School	Fresno
Wellspring Academy California	Tulare
Dinuba High School	Tulare
Wilson Elementary School	Tulare
Lincoln Elementary School	Tulare
Jefferson Elementary School	Tulare
Monson Sultana School	Tulare
Orosi High School	Tulare
Palm Elementary School	Tulare
Hurley Elementary School	Tulare
Saint Paul's School	Tulare
El Diamante High School	Tulare
Mineral King Elementary School	Tulare
Liberty Elementary School	Tulare

Table F-2
Schools Within 2 Miles of the Study Area

School Name	County
Farmersville Junior High School	Tulare
Farmersville High School	Tulare
Rocky Hill Elementary School	Tulare
Exeter High School	Tulare
Exeter Union High School	Tulare
Wilson Middle School	Tulare
Outside Creek Elementary School	Tulare
Liberty Elementary School	Tulare
Tulare Joint Union High School	Tulare
Lincoln School	Tulare
Countryside High School	Tulare
Roosevelt School	Tulare
Maple School	Tulare
Tulare Western High School	Tulare
Pleasant Elementary School	Tulare
Waukena Joint Union Elementary	Tulare
Corcoran High School	Kings
John Muir Middle School	Kings
Gundacker Community Day School	Kings
Lakeside Elementary School	Kings
Lemoore High School	Kings
Liberty Middle School	Kings
Meadow Lane School	Kings
Armona Union Academy	Kings
Armona Elementary School	Kings
Pioneer Union Elementary School	Kings
Western Christian School	Kings
Simas Elementary School	Kings
Hanford West High School	Kings
Hanford High School	Kings
Monroe Elementary School	Kings
Washington Elementary School	Kings
Kit Carson Elementary School	Kings
Delta View Joint Union School	Kings
Cypress School	Tulare

Table F-2
Schools Within 2 Miles of the Study Area

School Name	County
Mission Oak High School	Tulare
Lincoln Elementary School	Tulare
Lindsay High School	Tulare
Monache High School	Tulare
Porterville High School	Tulare
Granite Hills High School	Tulare
John J. Doyle Elementary School	Tulare
Hope Elementary School	Tulare
Terra Bella Elementary School	Tulare
Earlimart Elementary School	Tulare
Delano High School	Kern
Highland Elementary School	Kern
North High School	Kern
Garces Memorial High School	Kern
East Bakersfield High School	Kern
Highland High School	Kern
Stiern Middle School	Kern
Foothill High School	Kern
Orangewood Elementary School	Kern
West High School	Kern
Stockdale High School	Kern
Liberty High School	Kern
Leo B. Hart Elementary School	Kern
Christa Mcauliffe Elementary	Kern
Tevis Junior High School	Kern

Source: Data compiled by AECOM in 2010

APPENDIX I

Background Conditions and Modeling of Noise Impacts

Appendix G

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : CVIN EA/IS
Project Number :
Modeling Condition : Existing
Ground Type : Soft
K Factor : 10
Metric (L_{eq}, L_{dn}, CNEL) : CNEL
Traffic Desc. (Peak or ADT) : ADT

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	SR 20	Colusa	Meridian	9,800	50	100	92	3	5	87		13	
2	SR20	Meridian	Yuba City	30,000	50	100	92	3	5	87		13	
3	SR20	Yuba City	Marysville	40,000	50	100	92	3	5	87		13	
4	SR174	Grass Valley	Colfax	8,100	50	100	92	3	5	87		13	
5	SR49	Auburn	Cool	9,000	50	100	92	3	5	87		13	
6	SR49	Cool	Coloma	3,500	50	100	92	3	5	87		13	
7	SR49	Sonora	SR120	10,700	50	100	92	3	5	87		13	
8	SR120	SR49	Tulloch Reservoir	15,200	50	100	92	3	5	87		13	
9	SR120	Tulloch Reservoir	Escalon	11,800	50	100	92	3	5	87		13	
10	SR108	Escalon	Modesto	16,100	50	100	92	3	5	87		13	
11	SR132	Modesto	Empire	14,900	50	100	92	3	5	87		13	
12	SR58	Bakersfield		51,000	50	100	92	3	5	87		13	

Appendix G

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : CVIN EA/IS
Project Number :
Modeling Condition : Existing
Metric (Leq, Ldn, CNEL) : CNEL

		Segment		Noise Levels, dB CNEL				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	SR 20	Colusa	Meridian	62.1	54.9	61.3	65.2	48	103	222	478	1030
2	SR20	Meridian	Yuba City	67.0	59.8	66.2	70.1	101	217	468	1008	2171
3	SR20	Yuba City	Marysville	68.2	61.0	67.4	71.3	122	263	567	1221	2630
4	SR174	Grass Valley	Colfax	61.3	54.1	60.5	64.4	42	91	195	421	907
5	SR49	Auburn	Cool	61.8	54.5	61.0	64.8	45	97	210	452	973
6	SR49	Cool	Coloma	57.7	50.4	56.9	60.7	24	52	112	241	518
7	SR49	Sonora	SR120	62.5	55.3	61.7	65.6	51	109	235	507	1092
8	SR120	SR49	Tulloch Reservoir	64.0	56.8	63.2	67.1	64	138	297	640	1380
9	SR120	Tulloch Reservoir	Escalon	62.9	55.7	62.1	66.0	54	117	251	541	1166
10	SR108	Escalon	Modesto	64.3	57.1	63.5	67.3	67	143	309	665	1434
11	SR132	Modesto	Empire	64.0	56.7	63.2	67.0	63	136	293	632	1362
12	SR58	Bakersfield		69.3	62.1	68.5	72.4	144	309	666	1435	3093

Appendix G

Project-Generated Construction Source Noise Prediction Model

CVIN Trenching Phase

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	1,278	50.0
	50	85.2
	100	77.3
	150	72.6
	200	69.3
	250	66.8
	300	64.7
	350	62.9
	400	61.4
	450	60.1
	500	58.8
	550	57.8
	600	56.8

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	0.4
Backhoe	80	0.4
Rock Drill	85	0.2
Dump Truck	84	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor	0.63

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Excavator	81.0
Backhoe	76.0
Rock Drill	78.0
Dump Truck	80.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85.2

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.

[2] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

$L_{eq}(equip) = E.L.+10*\log (U.F.) - 20*\log (D/50) - 10*G*\log (D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Appendix G

Project-Generated Construction Source Vibration Prediction Model

Fairfield Train Station EIR

Location	Distance to Nearest Receiver in feet	Predicted Vibration Level (PPV)	Predicted Vibration Level (VdB)	Equipment	Reference Distance	PPV at 25 feet (in/sec)[1]	Approximate Lv (VdB) at 25 feet[2]
Distance to Impact	15	0.191	93.6	Drilling	25	0.089	87
Distance to Impact	43	0.039	79.9				

Sources:

[1] Where PPV is the peak particle velocity

[2] Where Lv is the RMS velocity expressed in vibration decibels (VdB), assuming a crest factor of 4.

Source: Caltrans 2002, FTA 2006