

Summary

This initial study/mitigated negative declaration (IS/MND) has been prepared for the purpose of analyzing the potential physical environmental effects of the proposal by Williams Communications, Inc. (Williams) to install a network of fiber optic telecommunications cable and related facilities in California. The proposed project is analyzed at two levels in this IS/MND. The general characteristics of the proposed project and potential effects common to the project routes are examined at a projectwide level. The route-specific environmental settings and potential effects are examined at a route-specific level. Mitigation measures for potentially significant effects are identified at both levels. Two keynotes to this approach are Williams' commitment to avoidance of impacts through project design and adoption of constraints-driven mitigation measures as part of the proposed project.

In addition to meeting the California Public Utilities Commission's (CPUC's) rules for such assessments, the IS/MND has been prepared in accordance with the California Environmental Quality Act (CEQA) (Pub. Res. Code Section 21000 et seq.) and the updated State CEQA Guidelines (Title 14, Chapter 3, Section 15000, et seq., California Code of Regulations) to meet the requirements for a mitigated negative declaration.

The IS/MND concludes that, given the construction approach, design elements, and mitigation built into the proposed project and the mitigation measures included herein, no significant effect on the environment will occur and no substantial evidence exists in light of the whole record that the proposed project may have a significant effect on the environment.

PROJECT DESCRIPTION

As detailed in Chapter 2 of this IS/MND, Williams proposes to install and operate a fiber optic cable communications network throughout California to provide facilities-based and resold 24-hour InterLATA and IntraLATA interexchange services. Williams is applying to the CPUC for a Certificate of Public Convenience and Necessity (CPCN) authorizing Williams to install a fiber optic cable network, including necessary related facilities, within the state.

Williams proposes to install small-diameter (less than 2 inches outside diameter), high-density polyethylene (HDPE) conduits carrying fiber optic cables primarily within existing, disturbed rights-of-way (i.e., pipelines, utility corridors, roads, or railroads) over several linear routes across California. Approximately 99 percent of the work would be conducted inside existing disturbed rights-of-way within idle pipelines or utility ducts, or buried through use of plowing or trenching techniques. In addition to the fiber optic cable, a series of regenerator and optical amplification (OP-AMP) stations will be installed at intervals along the routes to boost transmission signals. Where practical, the stations would be located within existing utility substations or other existing facilities.

The following project routes and related facilities comprise the proposed project analyzed in this IS/MND. Specific descriptions of the routes and facilities are provided in Chapter 3. The routes are:

- # Point Arena to Sacramento (the route from Point Arena to the community of Robbins),
- # Sacramento to the California/Nevada border,
- # San Francisco to Santa Clara,

- # Pittsburg to Sacramento,
- # San Luis Obispo to Bakersfield,
- # San Luis Obispo to Los Osos Loop,
- # Riverside to the California/Arizona border,
- # Los Angeles to Riverside, and
- # Los Angeles to Anaheim.

Several standard construction methods would be used to install the conduit and cable along these routes. Chapter 2 contains a detailed description of these methods. The particular methods to be used along the project routes, as well as any deviations from the general descriptions, are discussed in Chapter 3. Williams has prioritized its preferred installation methods as follows:

- # inside idle natural gas or petroleum pipelines,
- # inside existing utility ducts,
- # plowing or trenching within existing pipeline rights-of-way,
- # plowing or trenching within existing railroad rights-of-way,
- # plowing or trenching in road rights-of-way, and
- # aerial installation.

Plowing requires use of a tracked vehicle with a cable reel on the front and a plow blade on the back. The plow furrows the soil and installs the cable at the same time. In some instances, the soil may be pre-ripped by a tractor in front of the plow. Trenching typically involves use of a rubber-tired backhoe or an excavator to dig a 1-foot-wide by 4-foot-deep trench. After the cable is installed in the trench, the trench is backfilled and restored. Additionally, at sensitive streams (i.e., streams supporting sensitive plant, animal, or fish species or critical habitat) with flowing water, or where necessary to avoid sensitive resources such as wetlands, threatened and endangered species, sensitive plant populations, cultural or paleontological resources, rerouting, guided or directional boring, bridge attachments (if available) will be used. Boring will also be used in some instances to cross rivers and to cross major roads in order to minimize traffic disruptions. Geographical, topographical, and resource avoidance considerations or availability of rights-of-way will generally require using a combination of two or more of these methods for installation along each of the project routes. The particular methods to be used along the project routes, as well as any deviations from the general descriptions, are discussed in Chapter 3.

Williams' primary approach to implementation of the proposed project is avoidance of impacts. As described more fully in Chapter 2, the proposed project incorporates mitigation by Williams to avoid or reduce possible environmental impacts to less-than-significant levels into project design and construction approach. The commitments include development and implementation of reclamation plans, fire prevention and management plans, and storm water pollution prevention plans (including erosion control and spill prevention countermeasures) for each project route, as necessary. Wetlands, rivers and streams, sensitive habitats, cultural resources, and other environmentally sensitive areas will be avoided during installation of the conduit and cable and siting of the regenerator/OP-AMP stations through rerouting, boring, or bridge attachment where available. Specific mitigation measures have also been identified in this IS/MND and adopted by Williams to avoid or reduce the impacts of the proposed project to less-than-significant levels. These measures are described in Chapter 5.

PROPOSED PROJECT ROUTES

Following is a brief description of the general location of the proposed project routes, including a table showing mileage for each route by right-of-way location (**Table S-1**). Detailed information is provided in Chapters 3 and 4.

Table S-1. Mileage of the Project Routes by Right-of-Way Location

Route Description	Total Miles	Right-of-Way					
		Local Road	State Highway	Railroad	Utility/Pipeline	New Road	Private Property
Point Arena to Sacramento	177.8	82.3	95.5	0.0	0.0	0.0	0.0
Sacramento to California/Nevada Border	126.6	49.3	1.0	62.0	0.0	0.0	14.3
San Francisco to Santa Clara	48.0	48.0	0.0	0.0	0.0	0.0	0.0
Pittsburg to Sacramento	74.8	45.9	7.0	15.6	6.3	0.0	0.0
San Luis Obispo to Bakersfield	141.1	14.0	0.0	25.3	101.8	0.0	0.0
San Luis Obispo to Los Osos Loop							
Northern Route	14.2	14.2	0.0	0.0	0.0	0.0	0.0
Southern Route	12.2	12.2	0.0	0.0	0.0	0.0	0.0
Riverside to California/Arizona Border	196.1	5.4	0.0	0.9	189.8	0.0	0.0
Los Angeles to Riverside	66.6	12.0	0.0	51.5	3.1	0.0	0.0
Los Angeles to Anaheim	23.6	2.5	0.0	21.1	0.0	0.0	0.0
Total	881.0	285.8	103.5	176.4	301.0	0.0	14.3

Point Arena to Sacramento

The project route would connect the AT&T Japan cable landing near Point Arena in Mendocino County with the community of Robbins, primarily following state, county, and private road rights-of-way. Sacramento, the urban center nearest to Robbins, was used in the project title because of the recognition factor for readers. The project route would be located predominantly in state highway and county road rights-of-way and would pass through private lands and federal lands managed by the U.S. Bureau of Land Management's (BLM's) Ukiah Field Office. It would cross Mendocino, Lake, Colusa, Yolo, and Sutter counties and the communities of Manchester, Point Arena, Yorkville, Highland Springs, Lower Lake, Clearlake, Brooks, Capay, Knights Landing, and Robbins. Five OP-AMP stations would be located on private property outside existing rights-of-way.

California/Nevada Border to Sacramento

The route would generally follow the Union Pacific Railroad right-of-way from the California/Nevada border to Hirschdale, east of Truckee in Nevada County. From Hirschdale to Colfax, the route would be located primarily in the rights-of-way of existing state roads, local roads, or an AT&T corridor. At Colfax, the route would reenter the railroad right-of-way and follow it into downtown Sacramento.

The route traverses the Sierra Nevada range, passing through the Tahoe National Forest and other rural forest lands, as well as the small communities of Hirschdale and Colfax. Once in the Sacramento Valley, it passes through rural residential areas to the east of Sacramento before entering the urbanized Sacramento area. Three OP-AMP stations would be located on private property outside existing rights-of-way.

San Francisco to Santa Clara

This route begins in San Francisco and travels through an existing Pacific Bell duct to the intersection with the BART system in Daly City. From this point the route travels south along local street rights-of-way to an out of service pipeline located in the City of Brisbane. The route continues in the pipeline to the City of San Bruno where it moves back to local streets. The route follows local streets and El Camino Real (State Highway 82) to its terminus in Santa Clara, crossing through the following communities: San Bruno, Millbrae, Burlingame, San Mateo, Belmont, San Carlos, Redwood City, Atherton, Menlo Park, Palo Alto, Mountain View, and Sunnyvale.

This eastern portion of the San Francisco Peninsula is heavily urbanized. The route passes through commercial, industrial, and some residential areas. Land uses along El Camino Real are primarily commercial in nature. No regenerator/OP-AMP stations would be constructed.

Pittsburg to Sacramento

The project route would begin at the Bay Area Rapid Transit District's (BART's) Bay Hill station in the City of Pittsburg (Contra Costa County). Between Pittsburg and the Antioch Bridge, the route would be located within Union Pacific Railroad right-of-way. Small segments of county roads would be used between the BART station and the railroad right-of-way and between the eastern end of the UPRR right-of-way and the Antioch Bridge. The route would cross the Antioch Bridge (the conduit would be attached to the bridge) and would continue in California Department of Transportation right-of-way for approximately 4 miles. The route would turn northwest within an existing Pacific Gas and Electronic Company (PG&E) transmission line right-of-way and would cross under the Sacramento River between two PG&E pipelines.

On the north side of the Sacramento River, the route would continue within city and county road rights-of-way, ending along Chiles Road, 2 miles east of Mace Boulevard in the City of Davis. The route would cross under I-80 between Chiles Road and the Union Pacific Railroad right-of-way to the north within an existing PG&E transmission line right-of-way. After crossing I-80, the route would follow the railroad right-of-way to the City of West Sacramento. At this point, the route would join an existing Pacific Bell duct and would continue under the Sacramento River and into the City of Sacramento. New duct would be constructed for a short segment along J and 7th streets.

The route would be situated within a variety of land uses, originating in the relatively urbanized area of Contra Costa County. From Pittsburg to Antioch, the route would cross mixed residential, commercial, and industrial areas. From Antioch to Davis, the route would be located in a rural setting, mostly in agricultural use and with very few nearby residences. The route through the City of Davis would be primarily urban. From Davis to West Sacramento, the setting would be agricultural. Once in West Sacramento, the route would again be located in a highly urbanized area. Two OP-AMP stations would be constructed on private property outside existing rights-of-way.

San Luis Obispo to Bakersfield

The project route would follow local roads and existing Pacific Bell ducts from central San Luis Obispo along the western side of U.S. Highway 101 to the intersection the Union Pacific Railroad near Cuesta Springs Road. The route would continue in the railroad right-of-way north to the City of Atascadero where it would connect to an idle Chevron pipeline for the remainder of the route into Bakersfield.

The western segment of the route near San Luis Obispo and Atascadero would be located in the Santa Lucia Range, and the eastern segment would be located on flatter terrain in Kern County. Three OP-AMP stations would be constructed: two within existing rights-of-way and one on private property outside existing rights-of-way.

San Luis Obispo to Los Osos Loop

Two routes would provide a diverse connection between the proposed AT&T China cable landing site in the town of Los Osos (northern route) and the San Luis Obispo County facility in San Luis Obispo (southern route). Both routes generally would cross urban and industrial areas in the portions of the routes east of U.S. 101 and would be located adjacent to agricultural and grazing land along Los Osos Valley Road. No regenerator/OP-AMP stations would be constructed.

California/Arizona Border to Riverside

This route would begin at the California/Arizona border near Yuma, Arizona and run west to a location in Riverside. The route would cross desert from the California/Arizona border to the northern edge of the Imperial Valley near Niland (Imperial County). From this agricultural valley, it again would traverse west across desert areas to the Coachella Valley in eastern Riverside County, where it would pass through agricultural and urban lands. Grass and scrub lands dominate where the route would cross San Geronio Pass. The route would become increasingly urban as it passes through the cities of Banning and Beaumont, with small rural breaks. Within San Timeteo Canyon, the route would pass through scrub lands and rural residential areas. After exiting the canyon, the route would pass through urban and agricultural areas and into downtown Riverside. One regenerator station and four OP-AMP stations would be constructed on private property outside existing rights-of-way.

Los Angeles to Riverside

The proposed project route would begin in the City of Riverside and would end in downtown Los Angeles. Most of this route would be built within a Union Pacific Railroad right-of-way. From downtown Riverside, the route would travel through local road rights-of-way and the KMEP pipeline for approximately 15 miles until entering the railroad right-of-way and continuing west to Los Angeles.

The railroad right-of-way would travel west through several cities, including Ontario, Pomona, and La Puente. After crossing the San Gabriel River, the route would continue through the City of El Monte, cross the Rio Hondo channel, and continue through the cities of San Gabriel and Alhambra. Within the City of Alhambra, the rail line goes below grade into a trench that extends for 2 to 3 miles. At this point, the route would continue within adjacent road rights-of-way along Mission Road. Once the rail line returns to a surface grade, the route would again be placed within the UPRR right-of-way and continue into downtown Los Angeles where the cable would either be installed in existing conduit or trenched or bored city streets.

Most of this project route would be located within the urbanized Los Angeles metropolitan area. It would pass through industrial, commercial, and residential areas. One OP-AMP station would be constructed on private property outside existing rights-of-way.

Los Angeles to Anaheim

The project route would begin within the urbanized Los Angeles metropolitan area and would continue, by way of an existing conduit or by means of trenching or boring, across the Los Angeles River, and enter the Union Pacific Railroad right-of-way northwest of the Pomona and Santa Monica freeway interchange. Once in railroad rights-of-way, the corridor would continue south through the communities of Vernon and Maywood, under Interstate 710 and the Rio Hondo channel, through the City of Downey, under Interstate 605, and continue parallel to I-5 through the cities of Norwalk, Cerritos, and Buena Park before entering the City of Anaheim. In Anaheim, the route would leave the railroad right-of-way and continue for a distance under local roads. No regenerator/OP-AMP stations would be constructed.

SUMMARY OF MITIGATION MEASURES

The proposed project has been designed by Williams, based on biological and cultural resources constraints and opportunities information, to avoid significant environmental impacts through site design and construction approach or to reduce such effects to less-than-significant levels through the application of additional mitigation measures. The proposed project incorporates construction methods (e.g., installation in idle natural gas pipelines and other utility ducts) and practices (e.g., storm water pollution prevention plans, reclamation plans) that would either avoid or minimize its physical impacts. Williams has also committed to additional mitigation measures to ensure there would be no significant environmental effects resulting from the proposed project. These mitigation measures are discussed in detail in Chapter 5 and summarized in **Table S-2**.

GROWTH-INDUCING IMPACTS

The proposed project would serve the expanding telecommunications market in California, nationally and internationally. The contribution of this project to California's projected population growth would be negligible because it is not a primary factor in selecting whether to move to California and because much of the growth is independent of the availability of fiber optic capacity.

California is growing at a rapid pace, with annual population increases projected to average approximately 1.6% over the next 10 years. At least half of the projected population increase would be from births to existing residents. (California Department of Finance 1998.) Potential residents consider a variety of factors when deciding to move to California, including job availability, salaries, relative housing cost, quality of schools, commuting distance, and recreational opportunities. As population increases, so will the demand for telecommunications. Stand-alone fiber optic cable is one means of meeting this demand. Others are wireless technology and expanding the capacity of existing telephone lines.

CUMULATIVE IMPACTS

The impacts of the proposed project would be negligible or less than significant. As discussed in Chapter 5, through compliance with standards established for environmental protection and incorporation of project elements and mitigation measures designed to primarily avoid or reduce impacts below the level of significance, the proposed project would not make a cumulatively considerable contribution to any significant cumulative impact.

Table S-2. Summary of Impacts and Mitigation Measures

Impact and Mitigation by Resource Area	Point Arena to Sacramento	Sacramento to Calif./Nevada Border	San Francisco to Santa Clara	Pittsburgh to Sacramento	San Luis Obispo to Bakersfield	San Luis Obispo to Los Osos Loop	Riverside to California/Arizona Border	Los Angeles to Riverside	Los Angeles to Anaheim
Aesthetics									
<p>Impact: Possible Temporary Minor Changes in Landscape from Trenching Operations</p> <p>Mitigation: Mitigation is incorporated in the design and construction approach.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Minor Changes in the Existing Visual Character or Quality of a Site</p> <p>Mitigation: Mitigation is incorporated in the design and construction approach.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Minimal Visual Effect Resulting from Construction of Regenerator/OP-AMP Stations</p> <p>Mitigation Measure A-1: Design Regenerator/OP-AMP Stations to Be Unobtrusive</p>	•	•		•	•		•	•	

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Agricultural Resources - no impacts would occur.									
Air Quality									
<p>Impact: Temporarily Increased Levels of Air Pollutants during Construction Exceeding Air District Thresholds</p> <p>Mitigation Measure AQ-1: Implement Construction Best Management Practices</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Temporary Emissions Exceeding Limits from Operating Emergency Backup Generators</p> <p>Mitigation Measure AQ-2: Obtain Authority to Construct and Permit to Operate Emergency Backup Generators, Where Required</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Temporary Generation of Odors from Diesel Exhaust during Construction and from Diesel Backup Generators at Regenerator/OP-AMP Stations</p> <p>Mitigation: None required because the impact is absent or less than significant.</p>	•	•	•	•	•	•	•	•	•

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Biological Resources									
<p>Impact: Possible Disturbance of Special-Status Plant Populations</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction.</p> <p>Mitigation Measure B-3: Avoid Impacts on State-Listed and Federally Listed and CNPS 1B Special-Status Plant Populations by Establishing and Observing Exclusion Zones</p>	•	•	•	•	•	•	•	•	•
<p>Mitigation Measure B-4: Avoid Impacts on CNPS Lists 2 and 4 Special-Status Plant Populations by Implementing Specific Measures</p> <p>Mitigation Measure B-5: Confine Construction Equipment and Associated Activities to the Project Routes in Areas That Support Sensitive Resources</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Introduction of New Noxious Weeds or Spread of Existing Noxious Weed Infestations</p> <p>Mitigation Measure B-6: Avoid the Dispersal of Noxious Weeds in the Fiber Optic Cable and Associated Facility Rights-of-Way</p>	•	•		•	•	•	•	•	

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<p>Impact: Possible Disturbance of Vernal Pools and Associated Habitat for Special-Status Species</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-7: Avoid Impacts on Vernal Pool Habitats by Establishing and Observing Exclusion Zones around Vernal Pools and Hydrologically Connected Areas</p>				<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 				
<p>Impact: Possible Disturbance to Delta Green Ground Beetle and Its Habitat</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-7: Avoid Impacts on Vernal Pool Habitats by Establishing and Observing Exclusion Zones around Vernal Pools and Hydrologically Connected Areas</p> <p>Mitigation Measure B-8: Avoid Riparian and Wetland Habitats That Support Special-Status Species by Establishing and Observing Exclusion Zones</p>				<ul style="list-style-type: none"> • 					

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Construction Activities Near Areas that are Habitat for the Valley Elderberry Longhorn Beetle</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-9: Avoid Disturbance to Elderberry Shrubs by Establishing and Observing Exclusion Zones</p>	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 		<ul style="list-style-type: none"> • 					
<p>Impact: Possible Disturbance to Delhi Sands Flower-Loving Fly Habitat</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-10: Avoid Disturbance to Delhi Sands Flower-Loving Fly Habitat</p>							<ul style="list-style-type: none"> • 		

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<p>Impact: Possible Disturbance to Quino Checkerspot Butterfly Habitat</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-11: Avoid Disturbance to Quino Checkerspot Butterfly Habitat</p>							<ul style="list-style-type: none"> • 		
<p>Impact: Possible Disturbance to Morro Shoulderband Snail Habitat</p> <p>Mitigation Measure B-12: Avoid Morro Shoulderband Snail Habitat by Rerouting or Boring Under Suitable Habitat Areas</p>						<ul style="list-style-type: none"> • 			

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<p>Impact: Possible Disturbance of Habitat for Non-Federally Listed Special-Status Amphibians and Reptiles</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-8: Avoid Riparian and Wetland Habitats That Support Special-Status Species by Establishing and Observing Exclusion Zones</p> <p>Mitigation Measure B-13: Avoid Disturbance to Special-Status Reptiles and Amphibians by Boring Under Streams or Constructing Barrier Fencing and Relocating Animals During Construction</p>	•	•		•	•	•	•		

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<p>Impact: Possible Disturbance to California Red-Legged Frogs in Drainages That Intersect the Proposed Project Route</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-8: Avoid Riparian and Wetland Habitats That Support Special-Status Species by Establishing and Observing Exclusion Zones</p>		<ul style="list-style-type: none"> • 			<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 		
<p>Impact: Possible Disturbance of Habitat for the Arroyo Southwestern Toad</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-8: Avoid Riparian and Wetland Habitats That Support Special-Status Species by Establishing and Observing Exclusion Zones</p>							<ul style="list-style-type: none"> • 		

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<p>Impact: Possible Disturbance to Potentially Occupied Habitat for California Tiger Salamanders</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-7: Avoid Impacts on Vernal Pool Habitat by Establishing and Observing Exclusion Zones around Vernal Pools and Hydrologically Connected Areas</p> <p>Mitigation Measure B-8: Avoid Riparian and Wetland Habitats That Support Special-Status Species by Establishing and Observing Exclusion Zones</p>	•			•	•	•			

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<p>Impact: Possible Disturbance to Blunt-Nosed Leopard Lizard Habitat</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-14: Avoid Blunt-Nosed Leopard Lizard Habitat by Conducting Preconstruction Searches for Burrows and Implementing Protection Measures, If Necessary</p> <p>Mitigation Measure B-15: Avoid Blunt-Nosed Leopard Lizard Burrows by Establishing and Observing Exclusion Zones Around Burrows</p> <p>Mitigation Measure B-16: Construct in Blunt-Nosed Leopard Lizard Habitat during the Lizard's Active Season</p>					<ul style="list-style-type: none"> • 				

Table S-2. Summary of Impacts and Mitigation Measures

Impact and Mitigation by Resource Area	Point Arena to Sacramento	Sacramento to Calif./Nevada Border	San Francisco to Santa Clara	Pittsburgh to Sacramento	San Luis Obispo to Bakersfield	San Luis Obispo to Los Osos Loop	Riverside to California/Arizona Border	Los Angeles to Riverside	Los Angeles to Anaheim
<p>Impact: Possible Disturbance to Coachella Valley Fringe-Toed Lizard and Its Habitat</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-17: Avoid Potentially Occupied Coachella Valley Fringe-Toed Lizard Habitat by Establishing and Observing Exclusion Zones</p>							•		
<p>Impact: Possible Disturbance to Flat-Tailed Horned Lizard and Its Habitat</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-18: Implement the Flat-Tailed Horned Lizard Rangelwide Management Strategy</p>							•		

Table S-2. Summary of Impacts and Mitigation Measures

Impact and Mitigation by Resource Area	Point Arena to Sacramento	Sacramento to Calif./Nevada Border	San Francisco to Santa Clara	Pittsburgh to Sacramento	San Luis Obispo to Bakersfield	San Luis Obispo to Los Osos Loop	Riverside to California/Arizona Border	Los Angeles to Riverside	Los Angeles to Anaheim
<p>Impact: Possible Disturbance to Desert Tortoise and Its Habitat</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-19: Avoid Desert Tortoise Burrows by Conducting Preconstruction Searches and Implementing Protection Measures, If Necessary</p> <p>Mitigation Measure B-20: Avoid Desert Tortoise Burrows by Establishing and Observing Exclusion Zones</p>						<ul style="list-style-type: none"> • 			

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Construction Activities near Areas with Potentially Active Nonlisted Special-Status Raptor Nests and Other Potential Nesting Habitat</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-21: Avoid Disturbing Active Special-Status Raptor Nests</p>	<p>•</p>	<p>•</p>		<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	
<p>Impact: Possible Disturbance of Active Swainson’s Hawk Nests</p> <p>Mitigation Measure B-1: - Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-22: Avoid Disturbing Active Swainson’s Hawk Nests by Establishing and Observing Buffer Zones</p>	<p>•</p>	<p>•</p>		<p>•</p>	<p>•</p>				

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Possible Disturbance to Active Northern Spotted Owl Nests</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-23: Avoid Disturbing Northern Spotted Owl Nests by Constructing During the Non-Breeding Season or by Establishing and Observing Buffer Zones Around Active Nests</p>	<ul style="list-style-type: none"> • 								
<p>Impact: Possible Disturbance to Active California Spotted Owl and Northern Goshawk Nests</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-24: Avoid Disturbing California Spotted Owl and Northern Goshawk Nests by Establishing and Observing Buffer Zones and Avoid Construction Activities During the Breeding Season</p>	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 							

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Construction Activities in Areas near Potential Active Burrowing Owl Nests</p> <p>Mitigation Measure B-1: Retain Qualified Biologists or Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-25: Avoid Disturbing Active Burrowing Owl Nests and Implement Standard DFG Guidelines during the Nonbreeding Season</p>	<p>•</p>	<p>•</p>		<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	
<p>Impact: Construction Activities Near Areas that are Habitat for California Condors</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p>					<p>•</p>				

Table S-2. Summary of Impacts and Mitigation Measures

Impact and Mitigation by Resource Area	Point Arena to Sacramento	Sacramento to Calif./Nevada Border	San Francisco to Santa Clara	Pittsburgh to Sacramento	San Luis Obispo to Bakersfield	San Luis Obispo to Los Osos Loop	Riverside to California/Arizona Border	Los Angeles to Riverside	Los Angeles to Anaheim
<p>Impact: Temporary Construction Activities in Areas That are Potential Habitat for Willow Flycatcher and Least Bell's Vireo</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-8: Avoid Riparian and Wetland Habitats That Support Special-Status Species by Establishing and Observing Exclusion Zones</p> <p>Mitigation Measure B-26: Avoid Noise Disturbance near Occupied Least Bell's Vireo Habitat during the Nesting Season, and Implement Protection Measures, If Necessary</p> <p>Mitigation Measure B-27: Avoid Noise Disturbance near Occupied Willow Flycatcher Habitat during the Nesting Season and Implement Protection Measures, If Necessary</p>		•			•	•	•		

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Temporary Construction Activities Near Areas that are Potential Nesting Habitat for California Gnatcatcher</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions Before Construction</p> <p>Mitigation Measure B-28: Avoid Occupied California Gnatcatcher Habitat During the Nesting Season, and Implement Protection Measures, If Necessary</p>							<ul style="list-style-type: none"> • 		

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Possible Disturbance to Kit Fox Den and Their Habitat</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-29: Avoid San Joaquin Kit Fox Dens by Conducting Preconstruction Searches and Implementing Protection Measures, If Necessary</p> <p>Mitigation Measure B-30: Avoid San Joaquin Kit Fox Dens by Establishing and Observing Exclusion Zones</p>					<ul style="list-style-type: none"> • 				
<p>Impact: Possible Disturbance to Active Special-Status Kangaroo Rat Burrows and Their Habitat</p> <p>Mitigation Measure B-31: Avoid Giant, Tipton, and Morro Bay Kangaroo Rat Burrows by Conducting Preconstruction Surveys and Implement Protection Measures, If Necessary</p> <p>Mitigation Measure B-32: Avoid Giant, Tipton, and Morro Kangaroo Rat Burrows by Establishing and Observing Exclusion Zones</p>					<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 			

Table S-2. Summary of Impacts and Mitigation Measures

Impact and Mitigation by Resource Area	Point Arena to Sacramento	Sacramento to Calif./Nevada Border	San Francisco to Santa Clara	Pittsburgh to Sacramento	San Luis Obispo to Bakersfield	San Luis Obispo to Los Osos Loop	Riverside to California/Arizona Border	Los Angeles to Riverside	Los Angeles to Anaheim
<p>Impact: Possible Disturbance to Active Stephens' Kangaroo Rat Burrows</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-33: Avoid Stephens' and Pacific Kangaroo Rat Burrows by Conducting Preconstruction Searches and Implementing Protection Measures, If Necessary</p> <p>Mitigation Measure B-34: Avoid Stephens' Kangaroo Rat Burrows by Establishing and Observing Exclusion Zones</p>						<ul style="list-style-type: none"> • 			

Table S-2. Summary of Impacts and Mitigation Measures

Impact and Mitigation by Resource Area	Point Arena to Sacramento	Sacramento to Calif./Nevada Border	San Francisco to Santa Clara	Pittsburgh to Sacramento	San Luis Obispo to Bakersfield	San Luis Obispo to Los Osos Loop	Riverside to California/Arizona Border	Los Angeles to Riverside	Los Angeles to Anaheim
<p>Impact: Possible Disturbance to Active San Joaquin Antelope Ground Squirrel Burrows</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-35: Avoid San Joaquin Antelope Ground Squirrel Burrows by Conducting Preconstruction Searches and Implementing Protection Measures, If Necessary</p> <p>Mitigation Measure B-36: Avoid San Joaquin Antelope Ground Squirrel Burrows by Establishing and Observing Exclusion Zones</p>					•				

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Construction Activities Near Active Breeding Sites for Northern Harrier, Snowshoe Hare, White-Tailed Jackrabbit, Sierra Nevada Mountain Beaver, and American Badger</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-37: Avoid Disturbance to Northern Harrier, Snowshoe Hare, White-Tailed Jackrabbit, Sierra Nevada Mountain Beaver, and American Badger by Conducting Preconstruction Surveys and Establishing No-Disturbance Buffers</p>	<p>•</p>	<p>•</p>		<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	
<p>Impact: Construction Activities on Bridges that are Nesting Habitat for Swallows</p> <p>Mitigation Measure B-38: Avoid Disturbance to Nesting Swallows by Implementing Timing Restrictions, Removing Nests, and Installing Mesh Netting</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Construction Activities in Areas Near Bat Maternity Roosting Sites</p> <p>Mitigation Measure B-1: Retain Qualified Biologists or Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions Before Construction</p> <p>Mitigation Measure B-8: Avoid Riparian and Wetland Habitats That Support Special-Status Species by Establishing and Observing Exclusion Zones</p> <p>Mitigation Measure B-39: Avoid Bat Maternity Roost by Postponing Bridge Attachments</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>
<p>Impact: Possible Disturbance of Other Special-Status Wildlife Species</p> <p>Mitigation: None required because the impact is absent or less than significant.</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Temporary Construction Activities in Streams that Support Threatened, Endangered, and Special-Status Fish Species</p> <p>Mitigation Measure B-1: Retain Qualified Biologists or Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p> <p>Mitigation Measure B-5: Confine Construction Equipment and Associated Activities to the Project Routes in Areas That Support Sensitive Resources</p> <p>Mitigation Measure B-8: Avoid Riparian and Wetland Habitats That Support Special-Status Species by Establishing and Observing Exclusion Zones</p> <p>Mitigation Measure B-40: Avoid and Minimize Disturbance of Woody Riparian Vegetation along Drainages</p> <p>Mitigation Measure B-41: Conduct Postconstruction Monitoring in Woody Riparian and Wetland Communities That Are Substantially Disturbed during Construction Activities</p> <p>Mitigation Measure F-1: Avoid In-Water Construction in All Flowing Streams That Support Sensitive Fish Species at or below the Crossing Location</p>	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Possible Removal or Disturbance of Woody Riparian Vegetation</p> <p>Mitigation Measure B-1: Retain Qualified Biologists or Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-5: Confine Construction Equipment and Associated Activities to the Project Routes in Areas That Support Sensitive Resources</p> <p>Mitigation Measure B-8: Avoid Riparian and Wetland Habitats That Support Special-Status Species by Establishing and Observing Exclusion Zones</p> <p>Mitigation Measure B-40: Avoid and Minimize Disturbance of Woody Riparian Vegetation along Drainages. Refer to the discussion of this mitigation measure earlier in this section.</p> <p>Mitigation Measure B-41: Conduct Postconstruction Monitoring in Woody Riparian and Wetland Communities That Are Disturbed during Construction Activities</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>
<p>Impact: Possible Disturbance of Sensitive Biological Resources from the Use of Staging Areas outside the Delineated Proposed Project Study Area and Not within Previously Paved or Graveled Areas</p> <p>Mitigation Measure B-42: Survey Proposed Staging Areas before Construction and Implement Avoidance Measures, if Required</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Short-Term Direct Disturbance of Waters of the United States (Including Wetland Communities)</p> <p>Mitigation Measure B-1: Retain Qualified Biologists or Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-5: Confine Construction Equipment and Associated Activities to the Project Routes in Areas That Support Sensitive Resources</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>
<p>Mitigation Measure B-41: Conduct Postconstruction Monitoring in Woody Riparian and Wetland Communities That Are Substantially Disturbed during Construction Activities</p> <p>Mitigation Measure B-43: Minimize Disturbance and Restore Other Waters of the United States to Preproject Conditions</p> <p>Mitigation Measure B-44: Minimize Disturbance and Restore Jurisdictional Wetlands to Preproject Conditions</p> <p>Mitigation Measure B-45: Avoid and Protect Specified Jurisdictional Wetlands Adjacent to Construction Areas</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Possible Temporary Disturbances to Wildlife Movements</p> <p>Mitigation Measure B-8: Avoid Riparian and Wetland Habitats That Support Special-Status Species by Establishing and Observing Exclusion Zones</p> <p>Mitigation Measure B-13: Avoid Disturbance to Special-Status Reptiles and Amphibians by Boring Under Streams or Constructing Barrier Fencing and Relocating Animals During Construction</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>
<p>Impact: Possible Wildlife Entrapment in Open Trenches</p> <p>Mitigation Measure B-46: Fill or Cover Open Trenches</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>
<p>Impact: Possible Temporary Disturbance of Common Wildlife Species</p> <p>Mitigation Measure: Mitigation is incorporated in the design and construction approach.</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>

Table S-2. Summary of Impacts and Mitigation Measures

<p>Impact and Mitigation by Resource Area</p>	<p>Point Arena to Sacramento</p>	<p>Sacramento to Calif./Nevada Border</p>	<p>San Francisco to Santa Clara</p>	<p>Pittsburgh to Sacramento</p>	<p>San Luis Obispo to Bakersfield</p>	<p>San Luis Obispo to Los Osos Loop</p>	<p>Riverside to California/Arizona Border</p>	<p>Los Angeles to Riverside</p>	<p>Los Angeles to Anaheim</p>
<p>Impact: Possible Temporary Increases in Sedimentation and Turbidity Possibly Affecting Fish</p> <p>Mitigation Measure B-1: Retain Qualified Biologists or Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-5: Confine Construction Equipment and Associated Activities to the Project Routes in Areas That Support Sensitive Resources</p> <p>Mitigation Measure B-40: Avoid and Minimize Disturbance of Woody Riparian Vegetation along Drainages</p> <p>Mitigation Measure B-41: Conduct Postconstruction Monitoring in Woody Riparian and Wetland Communities That Are Substantially Disturbed during Construction Activities</p> <p>Mitigation Measure B-43: Minimize Disturbance and Restore Other Waters of the United States to Preproject Conditions</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>
<p>Mitigation Measure F-1: Avoid in-Water Construction in All Flowing Streams That Support Sensitive Fish Species at or below the Crossing Location</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>	<p>•</p>

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<p>Impact: Possible Short-Term Disturbance of Fish Habitat</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions Before Construction</p> <p>Mitigation Measure B-40: Avoid and Minimize Disturbance of Woody Riparian Vegetation along Drainages</p> <p>Mitigation Measure B-41: Conduct Postconstruction Monitoring in Woody Riparian and Wetland Communities That Are Substantially Disturbed during Construction Activities</p> <p>Mitigation Measure B-43: Minimize Disturbance and Restore Other Waters of the United States to Preproject Conditions</p> <p>Mitigation Measure F-1: Avoid in-Water Construction in All Flowing Streams That Support Sensitive Fish Species at or below the Crossing Location</p>	•	•	•	•	•	•	•	•	•

Table S-2. Summary of Impacts and Mitigation Measures

Impact and Mitigation by Resource Area	Point Arena to Sacramento	Sacramento to Calif./Nevada Border	San Francisco to Santa Clara	Pittsburgh to Sacramento	San Luis Obispo to Bakersfield	San Luis Obispo to Los Osos Loop	Riverside to California/Arizona Border	Los Angeles to Riverside	Los Angeles to Anaheim
<p>Impact: Possible Short-Term Degradation of Fish Habitat from Accidental Seepage of Bentonite into Streams</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions Before Construction</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Effects on Fish from Accidental Spills of Toxic Substances during Construction</p> <p>Mitigation Measure B-1: Retain Qualified Biologists and Resource Specialists to Monitor Construction Activities near Specified Sensitive Biological Areas</p> <p>Mitigation Measure B-2: Conduct a Biological Resource Education Program for Construction Crews and Enforce Construction Restrictions before Construction</p>	•	•	•	•	•	•	•	•	•

Table S-2. Summary of Impacts and Mitigation Measures

Impact and Mitigation by Resource Area	Point Arena to Sacramento	Sacramento to Calif./Nevada Border	San Francisco to Santa Clara	Pittsburgh to Sacramento	San Luis Obispo to Bakersfield	San Luis Obispo to Los Osos Loop	Riverside to California/Arizona Border	Los Angeles to Riverside	Los Angeles to Anaheim
Cultural Resources									
<p>Impact: Possible Long-Term Disturbance of Cultural Resource Sites</p> <p>Mitigation Measure C-1: Develop and Implement Avoidance Procedures</p> <p>Mitigation Measure C-2: Develop and Implement Cultural Resources Monitoring Plan</p> <p>Mitigation Measure C-3: Conduct Test Excavation to Determine Resources Significance, and if Significant, Conduct Data Recovery Excavation</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Indirect Impact on Historic Structures from Siting of Regenerator/OP-AMP Sites</p> <p>Mitigation Measure C-4: Site Regenerator/OP-AMP Facilities to Avoid Setting Impacts on Significant and Potentially Significant Resources</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Long-Term Damage to Unidentified Buried Cultural Resource Sites from Ground-Disturbing Activities</p> <p>Mitigation Measure C-5: Stop Work If Cultural Resources Are Discovered during Ground-Disturbing Activities</p>	•	•	•	•	•	•	•	•	•

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<p>Impact: Possible Disturbance to Paleontological Resources during Construction</p> <p>Mitigation Measure C-6: Retain a Qualified Paleontologist to Oversee Construction Activities and Prepare a Report</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Long-Term Damage to Previously Unidentified Human Remains on Federal or Nonfederal Land from Ground-Disturbing Activities</p> <p>Mitigation Measure C-7: Comply with State and Federal Laws Pertaining to the Discovery of Human Remains</p>	•	•	•	•	•	•	•	•	•
Geology and Soils									
<p>Impact: Possible Temporary Damage to the Cable System from Earthquake-Induced Strong Ground Shaking</p> <p>Mitigation: None required because the impact is absent or less than significant.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Temporary Damage to the Cable System from Earthquake Fault Displacement</p> <p>Mitigation: None required because the impact is absent or less than significant.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Temporary Damage to the Cable System from Earthquake-Induced Liquefaction</p> <p>Mitigation: None required because the impact is absent or less than significant.</p>	•	•	•	•	•	•	•	•	•

Table S-2. Summary of Impacts and Mitigation Measures

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<p>Impact: Possible Long-Term Slope Mass Failure</p> <p>Mitigation: None required because the impact is absent or less than significant.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Temporary Accelerated Erosion and Sedimentation from Soil Disturbance and Vegetation Removal</p> <p>Mitigation: Mitigation is incorporated in the design and construction approach.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Potential Damage to the Cable System from Seasonal Soil Expansion and Contraction</p> <p>Mitigation: Mitigation is incorporated in the design and construction approach.</p>	•	•	•	•	•	•	•	•	•

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Hazards and Hazardous Materials									
<p>Impact: Possible Temporary Exposure to or Release of Hazardous Materials during Construction</p> <p>Mitigation Measure H-1: Ensure Proper Labeling, Storage, Handling, and Use of Hazardous Materials</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Exposure of the Public or Environment to Hazardous Materials Sites</p> <p>Mitigation Measure: Mitigation is incorporated in the design and construction approach.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Temporary Limited Emergency Access</p> <p>Mitigation Measure: Mitigation is incorporated in the design and construction approach.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Temporary Exposure of People or Structures to Wildland Fires</p> <p>Mitigation Measure: Mitigation is incorporated in the design and construction approach.</p>	•	•	•	•	•	•	•	•	•
Hydrology and Water Quality									
<p>Impact: Possible Temporary Transport of Sediment to Waterbodies</p> <p>Mitigation Measure: Mitigation is incorporated in the design and construction approach.</p>	•	•	•	•	•	•	•	•	•

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<p>Impact: Possible Temporary Disruption of Bed and Bank Sediments in Channels during Conduit and Cable Installation</p> <p>Mitigation Measure: Mitigation is incorporated in the design and construction approach.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Long-Term In-Channel Erosion and Deposition from Decreased Channel Stability</p> <p>Mitigation Measure: Mitigation is incorporated in the design and construction approach.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Temporary Degraded Water Quality from Accidental Spills of Hazardous Materials during Construction</p> <p>Mitigation Measure: Mitigation is incorporated in the design and construction approach.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Temporary Water Quality Degradation and Siltation from Accidental Seepage of Bentonite into Streams</p> <p>Mitigation Measure: Mitigation is incorporated in the design and construction approach.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Possible Increased Flood Hazards from Possible Placement of Regenerator/OP-AMP Stations within the Floodplain</p> <p>Mitigation Measure: None required because the impact is absent or less than significant.</p>	•	•	•		•		•	•	

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Land Use and Planning									
<p>Impact: Possible Conflict with Local Land Use Plans</p> <p>Mitigation Measure LU-1: Obtain and Comply with Local Zoning Permits</p>	•	•	•	•	•	•	•	•	•
Mineral Resources									
<p>Impact: Possible Conflict with Future Mineral Exploration and Access to Resource Sites</p> <p>Mitigation Measure: None required because the impact is absent or less than significant.</p>	•	•	•	•	•	•	•	•	•
Noise									
<p>Impact: Temporary Exposure of Residences and Other Sensitive Receptors to Construction Noise in Excess of Local Standards</p> <p>Mitigation Measure N-1: Employ Noise-Reducing Construction Practices</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Temporary Exposure of Residences or Other Sensitive Receptors to High Noise Levels from Helicopter Operation That Could Exceed Local Noise Ordinance Criteria</p> <p>Mitigation Measure N-2: Limit Use of Helicopters near Residences and Other Sensitive Land Uses</p>									

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<p>Impact: Temporary Exposure of Residences or Other Sensitive Uses to Localized Groundborne Vibration and Noise</p> <p>Mitigation Measure: None required because the impact is absent or less than significant.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Exposure of Nearby Sensitive Receptors to Excessive Noise Levels from Use of Emergency Backup Generators and Other Support Equipment at Regenerator/OP-AMP Stations</p> <p>Mitigation Measures N-3: Design and Locate Emergency Backup Generators and Other Support Equipment to Limit Noise from the Engine Generator</p>	•	•	•		•		•	•	
Population and Housing - no impacts would occur.									
Public Services - no impacts would occur.									
Recreation									
<p>Impact: Possible Temporary Disruption of Hunting Opportunities</p> <p>Mitigation Measure: None required because the impact is absent or less than significant.</p>	•	•	•	•	•	•	•	•	•

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Transportation/Traffic									
<p>Impact: Temporary Traffic Disruption within Road Rights-of-Way</p> <p>Mitigation Measure T-1: Obtain and Comply with Local and State Road Encroachment Permits</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Temporary Disruption of Traffic</p> <p>Mitigation Measure: None required because the impact is absent or less than significant.</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Temporary Increase in Accident Risk</p> <p>Mitigation Measure T-1: Obtain and Comply with Local and State Road Encroachment Permits</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Temporary Effects on Traffic Flow</p> <p>Mitigation Measure T-1: Obtain and Comply with Local and State Road Encroachment Permits</p>	•	•	•	•	•	•	•	•	•
<p>Impact: Creation of Limited New, Temporary Parking</p> <p>Mitigation Measure T-1: Obtain and Comply with Local and State Road Encroachment Permits</p>	•	•	•	•	•	•	•	•	•
Utilities and Service Systems - no impacts would occur.									