Chapter 2. Project Description

INTRODUCTION

On December 31, 1998, Williams applied to the California Public Utilities Commission (CPUC) for a Certificate of Public Convenience and Necessity (CPCN) authorizing Williams to provide and resell intraLATA and interLATA interexchange telecommunications services in the State of California (see application number A.98-12-037)[1]. Williams is currently authorized by the Federal Communications Commission (FCC) to provide interstate and international interexchange services and to construct facilities[2]. In conjunction with a nationwide expansion of its fiber optic cable system, Williams also plans to construct and operate additional fiber optic facilities in California. On October 21, 1999, the California Public Utilities Commission-approved an initial study/mitigated negative declaration (IS/MND) for Williams' Fiber Optic Cable System Installation Project - California Network (California Public Utilities Commission 1999). The CPUC-approved IS/MND is incorporated in this subsequent IS/MND by reference.

Williams proposes to construct more than 99% of the fiber optic cable system in California within existing, disturbed rights-of-way (e.g., road or railroad rights-of-way). A small part of the fiber optic cable system, such as optical amplification (OP-AMP)/regenerator stations and small segments of fiber optic cable, would be installed outside these rights-of-way. The Point Arena to Robbins project route and the Point Arena to Sacramento project route are consistent with this overall approach, with almost all facilities within road and railroad rights-of-way. Williams does not propose to create any new cross-country routes, in part to avoid or minimize environmental damage.

As discussed in Chapter 1, "Introduction", the California network is part of a larger initiative by Williams to build a nationwide fiber optic cable system with connections to international traffic. These projects provide an entry point from the Pacific Ocean to California at Point Arena (**Figure 1-1**). Project route segments, shown in **Figure 1-1**, have independent utility, which means that each specific project route can function independently between two locations, although part of a larger cable system. Thus, specific project routes are considered a separate construction effort that, when combined, constitute Williams' larger California network.

A project route segment from Point Arena to Robbins, California, was identified and approved in the original Williams IS/MND. However, the project route has been modified to take advantage of existing fiber optic cable installed by Pacific Gas and Electric (PG&E) and to take advantage of other route options which improve constructability and minimize environmental affects. Hence, this subsequent IS/MND has been

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[1] LATA: Local Access and Transport Area. These service or market areas of the Bell Operating Companies were established by order of the Modified Final Judgment for the divestiture of the Bell Operating Companies from AT&T Corp. California is divided into 11 LATAs.

[2] Section 63.07(a) of the FCC's rules authorizes nondominant domestic interstate telecommunications carriers to construct transmission facilities and to provide domestic interstate telecommunications services.

prepared. A description of the modified project route is presented in Chapter 3, "Project Route Descriptions".

The Point Arena to Sacramento project was identified as a future project in the previous CPUC- and CEQA-approved document. Furthermore, the original western 53 miles of this route were identified and approved by the CPUC in the original Williams IS/MND. Hence, this subsequent IS/MND has been prepared. A description of the modified project route is presented in Chapter 3, "Project Route Descriptions".

REGULATORY ENVIRONMENT

The projects are subject to several state and federal regulatory schemes that help to mitigate its impacts on the environment to less-than-significant levels. The permits of broadest application to the projects and their requirements are briefly described here to provide a context for the remainder of this chapter. Permits required by other agencies, including the State Reclamation Board; air quality districts; California Coastal Commission; and local cities, counties, and special districts, will be discussed in other parts of the this subsequent IS/MND.

Section 401 of the Clean Water Act (CWA) requires a water quality certification (or waiver) to be obtained from the applicable regional water quality control board (RWQCB) for discharge activities that may affect water quality. The permit establishes measures to ensure water quality protection and is a required prerequisite for issuance of a Nationwide Permit No. 12 (see below).

Section 402 of the CWA requires a National Pollution Discharge Elimination System (NPDES) certification to be obtained from the applicable RWQCB before construction that may disturb 5 or more acres of land. A storm water pollution prevention plan (SWPPP) containing erosion control measures is required (**Appendix E**).

Section 404 of the CWA requires issuance of an individual or nationwide permit (in this instance, Nationwide Permit No. 12 for discharges associated with excavation, backfilling, or bedding of utility lines) by the U.S. Army Corps of Engineers (Corps) before discharge of fill into the waters of the United States, including wetlands.

Section 10 of the Rivers and Harbors Act requires permit authorization for activities occurring within designated navigable waterways to maintain navigability in the interest of interstate commerce.

Section 7 of the federal Endangered Species Act (ESA) requires consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service regarding necessary means to avoid harm to plant, fish, and wildlife species that are federally listed as threatened or endangered where there is a federal lead agency (e.g., Corps, U.S. Forest Service, U.S. Bureau of Land Management) action. Section 7 requires and establishes protocols for preconstruction wildlife surveys and mitigation measures. Section 10 of the federal ESA has similar requirements but applies to actions without federal involvement.

Section 106 of the National Historic Preservation Act requires examination of cultural resources before various federal agencies can provide permits under their jurisdiction. Section 106 establishes requirements and protocols for preconstruction cultural resource surveys and mitigation of impacts on cultural resources. In addition, Section 106 requires federal agencies to consider the effects of

their undertakings (including permitted activities) on historic properties (i.e., resources listed in or eligible for inclusion in the National Register of Historic Places.

- Section 1603 of the California Fish and Game Code requires a streambed alteration agreement from the California Department of Fish and Game (DFG) before any action that would divert or obstruct flow or alter the channel of designated drainages, rivers, streams, and lakes. Potential impacts must be mitigated.

- The California State Lands Commission (CSLC) requires an easement (Pub. Res. Code 6301) for state lands crossed by the project routes below the ordinary high-water mark of tidal waters and below the low-water mark of nontidal waterways (e.g., the Garcia, Napa, and Sacramento River crossings). **Appendix C** provides the areas under jurisdiction of the CSLC.

A complete list of permits and approvals for the projects are provided in **Appendix B**.

MITIGATION INCORPORATED INTO PROJECT DESIGN AND CONSTRUCTION APPROACHES

This section describes the mitigation measures that Williams has incorporated into the project design and construction approaches. The additional mitigation recommended in Chapter 5A, "Environmental Impacts and Mitigation Measures for Point Arena to Robbins", and Chapter 5B, "Environmental Impacts and Mitigation Measures for Point Arena to Sacramento", has also been adopted by Williams and will be implemented as part of the proposed projects.

Construction Methods for Fiber Optic Cable and Conduit Installation

The fiber optic cable system would consist of the following belowground and aboveground components. The belowground facilities are the fiber optic cable and conduit, utility access vaults, and handholes/manholes. The aboveground facilities are the cable marker posts and OP-AMP/regenerator stations.

- Williams plans to install three or more conduits along the project routes. One conduit would accommodate the current fiber optic cable and the remaining conduits would be used for maintenance and future use by Williams or other carriers. Buried fiber optic cable consists of bundled glass optical fibers wrapped in plastic sheathing. Fiber optic cable is inserted into flexible, high-density polyethylene conduit that has a typical outside diameter of 1.5 to 2 inches. Each conduit can accommodate one fiber optic cable that is about 0.85 inch in diameter and is composed of 96 to 288 hair-thin glass fibers.

- Utility access vaults and handholes/manholes are usually placed at intervals of about 3 to 5 miles to serve as splice points and to assist fiber optic cable installation and maintenance (**Figure 2-1**). The utility access vaults and handholes measure approximately 30 by 48 by 24 inches and would typically be buried 48 inches below the surface **(Figure 2-1)**.

- In some areas, such as streets or OP-AMP/regenerator station sites, manholes measuring roughly 4 by 4 by 6 feet may be installed **(Figure 2-1)**. Only the manhole lids would be visible at the surface.

- Cable marker posts would be located at approximately 700- to 1,000-foot intervals to alert people of the presence of the fiber optic cable. The posts are typically 3½-inch-diameter round PVC posts with orange caps 4 feet aboveground. The caps are imprinted with embossed lettering that indicates the presence of fiber optic cable.

OP-AMP and regenerator stations house the electronic equipment to amplify and/or regenerate the transmitted signal along the fiber optic cable. The outside elements of the OP-AMP/regenerator stations are identical (e.g., overall footprint, buildings); the only difference is the electronic equipment inside these facilities. Because the only difference between these two facilities is the internal electronic equipment, the terms “OP-AMP station” and “regenerator station” are often used interchangeably. OP-AMP stations are the more frequently used facilities. Regenerator stations are required only for long, continuous routes (typically more than 200 miles between the beginning and end points). Williams plans to install OP-AMP/regenerator stations approximately every 30 to 40 miles along the project routes where they are required. Three OP-AMP/regenerator stations would be constructed for the Point Arena to Robbins project route, and four OP-AMP/regenerator stations would be constructed for the Point Arena to Sacramento project route. Each station would consist of a fenced area measuring approximately 150 by 275 feet. Within the fenced area, an approximately 30- by 97-foot concrete pad would be installed. Three to eight precast concrete buildings would be placed side by side on the pad to house the electronic equipment. A second pad measuring approximately 150 square feet would also be installed to house a diesel-powered emergency backup generator to provide power to the facility during electrical outages. OP-AMP/regenerator station locations for the project routes are described in Chapter 3, “Project Route Descriptions”.

A general discussion of the types of construction methods that would be used to install the fiber optic cable and conduit is provided below. All of these methods would be used at various locations on the project routes to accommodate geographic or topographic constraints, resource avoidance considerations, or availability of rights-of-way. The specific construction methods that would be used along the project routes are listed in Chapter 3, “Project Route Descriptions”.

Plowed and Trenched Installation in Existing Road Rights-of-Way

Plowed installation uses a tracked vehicle with a cable reel in front and a plow blade in back (**Figure 2-2**). As the vehicle moves, it simultaneously furrows the soil and installs the conduit or cable. In some instances, the soil may be preripped by a tractor in front of the plow. Ripping is a technique in which a slit is made in the surface of the soil to loosen it. The amount of surface disturbed by plowing is typically less than with the trenching method. The construction corridor is usually 20 to 40 feet wide. In sensitive areas, the construction corridor can occasionally be restricted to less than 20 feet.

Trenched installations typically involve a rubber-tired backhoe or an excavator digging a trench approximately 12 inches wide by 48 inches deep. Typically, no more than 1,000 feet of trench would be exposed by a crew at any time during construction, and trenches would be filled at the end of each day. If conditions do not allow for small isolated areas, such as handholes or assist points, to be backfilled at the end of each day, appropriate safety, erosion, and wildlife control features would be installed. Access vaults or handholes/manholes would be installed approximately every 3 to 5 miles. The construction corridors would typically be confined to within the existing rights-of-way. In some cases, the conduit and cable may be installed in the roadbed to avoid sensitive resources in the road shoulder or right-of-way margin.

In almost all instances, plowing or trenching in road rights-of-way has fewer environmental impacts than installing the fiber optic cable along a cross-country route because road rights-of-way have already been disturbed and are often actively maintained. These road rights-of-way may also act as access roads for vehicles and construction equipment.

Although trenching or plowing can be used at some stream crossings, flowing streams with sensitive resources (e.g., high-value habitat for threatened or endangered species) would be crossed by attaching the conduit to an existing bridge or by boring under the stream (**Figures 2-3** and **2-4**). The approximate work area for bored stream crossings would be 150 by 100 feet for large stream crossings and 100 by 50 feet for smaller stream crossings. The work areas would be located outside the stream area. No in-water trenching is proposed in flowing streams with sensitive resources located at or downstream of the crossing.

Plowed and Trenched Installation in Existing Railroad Rights-of-Way

Plowing, trenching, and stream crossing methods for installations in railroad rights-of-way are similar to those discussed for road right-of-way. Trenches are dug or plowed in or along the edge of the railroad right-of-way or other portions of the right-of-way parallel to the tracks. Bridge attachments would be used at stream crossings where bridges is feasible. To avoid sensitive resources where bridges or permission to attach to bridges are not available, the conduit would be installed underground by directional boring. Railroad rights-of-way often have preexisting access roads that will be used to convey vehicles and equipment during project construction.

Directional Boring

Directional boring would be used in various locations along the project routes to cross areas where surface disturbance must be avoided (e.g., crossing railroads, highways, rivers, or sensitive streams) (**Figure 2-4**). Directional bore lengths can range from less than 100 feet to more than 10,000 feet, depending on the type of equipment used. To complete the bore, a work area is established on each side of the crossing. For river, stream, and wetland crossings, the work areas would be located at least 25 feet from the bank or edge of the wetland resource. One work area contains the "pilot hole" and drilling equipment. The other work area contains the "receiving hole", where the drill bit emerges, and is used to fabricate the steel casing that would be pulled through the hole. For relatively short bores, smaller drilling equipment is used, and the two work areas would measure approximately 100 by 50 feet. Larger equipment, and a correspondingly larger work area (approximately 150 by 100 feet), is needed for longer bores. Drilling equipment most suitable for site-specific conditions would be used for each bore. Silt fences, straw bails, and other erosion control measures would be installed around these work areas, consistent with the SWPPPs.

During the boring process, a bentonite[3] slurry is typically pumped through the bore hole to help lubricate the drill bit, prevent the bore tunnel from collapsing, and carry drill cuttings to the surface. Bentonite is a naturally occurring Wyoming clay known for its hydrophilic characteristics. Material Safety Data Sheets are readily available for bentonite if required. The slurry is pumped through the bore hole, collected at the surface, passed through machinery to remove the bore cuttings, and then recirculated through the hole. The slurry is stored in tanks at the drill site when not in use. Any excess slurry remaining after the bore is complete would be removed from the site and either reused by the drilling contractor or discarded at an appropriate location.

Although it is highly unlikely, the slurry can escape from the bore hole through cracks or fissures in the soil and reach the ground surface. All efforts would be made to complete directional bores at sufficient depths to prevent bentonite releases. For relatively short or simple bores, the drilling contractor often determines the appropriate bore depth based on professional experience and site-specific conditions. For

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[3] If comparable drilling fluid other than bentonite is proposed by the contractor, appropriate regulatory agency and CPUC approval would be obtained.

longer or more complex bores, a geotechnical engineer is often used to evaluate soil conditions and determine a minimal bore depth. If necessary, the geotechnical engineer would order site-specific soil borings to determine subsurface soil conditions.

The SWPPPs include a discussion of various slurry containment measures. A specific contingency plan for bentonite releases and potential bore abandonment will be prepared for more complex river crossings, such as the Garcia, Napa, and Sacramento Rivers.

OP-AMP and Regenerator Stations

The signal transmitted along a fiber optic cable must be amplified (i.e., boosted) approximately every 30 to 40 miles and reconstructed (i.e., "cleaned up") every 160 to 200 miles. An OP-AMP station only amplifies the optical signal. A regenerator station houses electrical equipment that reconstructs and amplifies the optical signal. As discussed previously, the outside elements of the OP-AMP/regenerator stations are identical; the only difference is the electronic equipment inside these facilities. Thus, the terms "OP-AMP station" and "regenerator station" are often used interchangeably. OP-AMP stations are the more frequently used facilities, however. Regenerator stations are required only for long, continuous routes (typically more than 200 miles between the beginning and end points). Williams plans to install OP-AMP/regenerator stations approximately every 30 to 40 miles along the project routes where they are required. Typical OP-AMP/regenerator stations consist of three to eight precast concrete buildings (each measuring 12 by 30 feet) lined up side by side on a concrete pad. More buildings can be added if fiber optic cable system traffic levels require it (**Figure 2-5**). Each building is manufactured with one or two heating, ventilation, and air conditioning (HVAC) units to maintain a steady temperature for the electronic equipment. The HVAC units operate from the same electrical source as the rest of the station.

The buildings would be located within a 150- by 275-foot fenced area. The unstaffed, locked facility requires commercial electric power and periodic maintenance. Each station would have an overhead security light and a small light over the door. A diesel-powered emergency backup generator would be installed to be used during power outages.

During the planning process, Williams developed the following criteria for siting OP-AMP/regenerator stations and their access. OP-AMP/regenerator stations would not be sited in areas that:

- have not been surveyed, documented, and ensured clear of sensitive biological and cultural resources by Williams' environmental consultant, with approval by the CPUC;
- are within a designated 100-year floodplain, unless absolutely necessary;
- are immediately adjacent to waterbodies, including wetlands, drainages, vernal pools, rivers, streams, or lakes;
- are on sites with known contamination; or
- are in areas that are designated as scenic.

As part of the OP-AMP/regenerator station site selection, qualified biologists and archeologists have accompanied Williams project engineers, and right-of-way and construction personnel to ensure that sites are clear of sensitive biological and cultural resources before they are selected.

If the locations of OP-AMP/regenerator stations must be modified because of environmental factors or inability to negotiate with a property owner, Williams environmental consultant would fill out the environmental clearance compliance checklist shown in **Appendix F** for each modified OP-AMP/regenerator station and submit it to the CPUC for review and approval. If the criteria listed above are not met, or clearance cannot be granted as specified in the checklist, Williams would find another location that is acceptable to the CPUC, meets the above criteria, and is ensured to be environmentally clear, consistent with the checklist. No construction will occur until approval has been granted by the CPUC.

Three OP-AMP/regenerator stations for the Point Arena to Robbins project route and four OP-AMP/regenerator stations for the Point Arena to Sacramento project route, as described in Chapter 3, "Project Route Descriptions", are analyzed in this subsequent IS/MND.

Staging Area Establishment

Staging areas for construction equipment, materials, fuels, lubricants, and solvents would be established along the project routes during construction to allow more efficient use and distribution of materials and equipment. Staging areas are typically locations where materials or equipment are stored for more than 2 days. Temporary parking areas may also be established to park vehicles and equipment during the workday or overnight. All staging areas and temporary parking outside the approved right-of-way would be approved by the CPUC prior to use. No new staging areas would be established in undisturbed areas or on public lands. All staging areas would be located on private lands in existing contractor yards; existing commercial areas used for storing and maintaining equipment; previously cleared, graded, or paved areas; or level areas where grading and vegetation clearing are not required.

Staging and parking areas are typically selected by the construction contractor, as needed, before and/or during construction. This practice is consistent with construction methods used throughout California and the United States. To ensure that sensitive environmental resources are avoided or adequately protected, the locations of staging and parking areas would be determined in consultation with qualified biologists and archeologists. Because fuels, lubricants, and solvents would be stored in staging areas, all staging areas would be located at least 150 feet from sensitive stream/drainages.

Access Roads

Access to the project routes would be by existing access roads to the road or railroad rights-of-way. No new access roads would be created for fiber optic cable installation; however, some existing roads in isolated areas may require minimal repairs to make them usable for construction. After completion of fiber optic cable installation, access roads would be repaired, if necessary, to prevent future erosion.

After installation, access to the project routes for maintenance would also be by existing access roads to the road or railroad rights-of-way. Activities following installation would consist mainly of implementing erosion control measures or repairing or replacing cable conduit because of storm damage, landslides, or other emergencies.

Specific access roads are not selected until the early stages of construction planning. Selection of access roads would be determined after consultation with qualified biologists and archeologists to ensure that sensitive environmental resources are adequately protected or avoided. CPUC and the appropriate agency approval (e.g., DFG, Corps, and RWQCB) would be obtained for stream crossings if modifications to bed or bank are necessary.

Equipment Access through Streams

Because not all segments of the right-of-way follow improved roads and some areas lack bridges, construction equipment may need to be transported through some streams. In most cases, small or ephemeral streams along the existing rights-of-way to be used by Williams are already crossed by maintenance or access roads. In most of these instances, the stream banks are gradually sloped and water flows would be either nonexistent or low enough to allow vehicles to drive through the channel without any change in the channel. In some cases, these access points may need to be modified to accommodate construction equipment by placing clean drain rock, cutting fords, or installing temporary culverts. Such modifications would be permitted through the appropriate agencies (e.g., DFG) and would not occur in streams supporting sensitive resources.

Before beginning construction activities on the project routes, Williams and the onsite biological monitor would review the right-of-way to determine the most appropriate access method for each stream and note these methods on the construction drawings.

Facility Operation and Maintenance

Ground-disturbing activities associated with ongoing operation and maintenance of telecommunications projects are normally minor to nonexistent. Best management practices (BMPs) detailed in the SWPPPs would be implemented. In most emergency situations requiring immediate attention, such as a fiber optic cable cut, access to inspect damaged areas would be by public roads or helicopter.

Avoidance of Sensitive Resources

Qualified biologists, archeologists, and paleontologists have been working closely with Williams project engineers in the field to design the project routes around sensitive resources and to site OP-AMP/regenerator stations, directional drilling points, handholes/manholes, and other project features in areas that do not support sensitive resources.

Sensitive resources (i.e., biological and cultural resources) would be avoided through various means identified during the project design phase. However, there would also be avoidance measures occurring in the field during construction as a result of preconstruction surveys and through coordination with CPUC monitors. If required, the construction technique would be coordinated through a resource specialist (i.e., wildlife biologist, wetland ecologist, botanist, archaeologist, or paleontologist) familiar with the resource issue being avoided. Typical avoidance measures include minor modification of the project routes around the sensitive resource within the disturbed right-of-way, boring under the resource, or attaching the fiber optic cable to an existing bridge. The locations of all sensitive resources and the methods to avoid them would be shown on the construction drawings.

All sensitive resources would be staked and flagged in the field and marked on the construction drawings prior to initiating construction.

Stream/Water Crossings

All significant impacts would be avoided at sensitive drainages, including perennial stream crossings or streams that are flowing at the time of construction and have sensitive resources located at or downstream of the crossing. At all streams that provide important habitat, contribute significantly to water quality, or support sensitive or listed aquatic species, conduit and cable would be installed either by boring under the drainage or by attaching the fiber optic cable to bridges, where available. In some situations, these methods would also be used for wetlands. The avoidance methods for each sensitive resource would be shown on the construction drawings.

Guided or directional bore/drill machines operated at ground level would be used to bore under streams or other sensitive resources (**Figure 2-4**). The bore would return to the surface on the opposite side of the stream or sensitive resource. Equipment for guided bores comes in various sizes and larger equipment can traverse distances exceeding 5,000 feet. For most bores under streams and other sensitive resources associated with the projects, equipment capable of boring 500 to 1,000 feet would be adequate. Guided bores typically use bentonite, a fine, nontoxic clay that, when mixed with water, provides the necessary lubricant and operating fluid for the drilling process. The mixture is injected into the drill under pressure and recirculated back to the surface, where it is filtered and reused.

Spill prevention countermeasures contained in the SWPPPs (required under the NPDES permit mandated by the RWQCB) have been developed for the project routes to prevent or minimize the risk of bentonite entering surface waters during directional boring. Although bentonite contamination seldom occurs, bentonite can reach the ground surface and enter surface waters if the bore encounters a rock fracture during high-pressure boring operations conducted over long distances. However, the risk of bentonite reaching the surface or surface waters is minimized because contractors typically use the smallest available boring equipment, which injects bentonite at lower pressures.

Sensitive Biological/Archeological Sites

Williams has conducted botanical, wildlife, wetlands, riparian, archeological, and paleontological studies to ensure that sensitive resources are identified and completely avoided or any impacts on sensitive resources that cannot be avoided are minimized to less-than-significant levels. Additional botanical surveys will be conducted between March and April 2000 to locate any early blooming plant species, which could not be identified during previous surveys. Biologists and archeologists are working closely with Williams' project engineers and resource agency staff to site the project routes and associated facilities (i.e., OP-AMP/regenerator stations) in areas with no sensitive resources. All sensitive resources would be staked and flagged in the field and marked on construction drawings before construction begins. Refer to the "Biological Resources" and "Cultural Resources" sections of Chapter 5A, "Environmental Impacts and Mitigation Measures for Point Arena to Robbins", and Chapter 5B, "Environmental Impacts and Mitigation Measures for Point Arena to Sacramento".

The results of biological and archeological field surveys for the project routes are shown in **Appendix G**. All of the field studies necessary to support the engineering design, with the exception of the additional spring botanical surveys, have been completed. Sensitive resources would be avoided by either locating the project routes and facilities away from the sensitive resource, or boring the conduit and cable under the resource. Cable and conduit can often be moved to the other side of the right-of-way or into pavement, if necessary. The avoidance methods for each sensitive resource would be staked and flagged in the field, where appropriate and necessary, and shown on the construction drawings for the project routes.

Appendix G contains an environmental compliance checklist that would be completed for any site modifications to the proposed locations of the OP-AMP/regenerator stations. This checklist would ensure that the appropriate biological and archeological clearances have been documented, received, and approved by the CPUC before construction of the facilities begin.

Work Zones

Fiber optic cable system installation activities would be confined to existing disturbed rights-of-way (i.e., road or railroad right-of-way). In the very few areas that facilities could be located outside these existing rights-of-way (i.e., private access roads and OP-AMP/regenerator stations), the same environmental clearance processes and mitigation measures would be implemented as within the right-of-way. In both instances, the construction area will typically be 20 to 40 feet wide for conduit and cable installation. Larger areas would be used for OP-AMP/regenerator construction and directional bores, as described previously.

Work within Permanent Rights-of-Way

Roads and railroads have permanent rights-of-way that vary in width. All excavation and grading activities associated with conduit and cable installation would be confined to the rights-of-way and their access roads. In most cases, construction would take place within the permanent rights-of-way or on the access and maintenance roads.

Work outside Permanent Rights-of-Way

Only minimal excavating or grading activities, such as for OP-AMP/regenerator stations and directional bores under the Sacramento River, may occur outside permanent rights-of-way. Operation outside the rights-of-way would not be allowed in any areas identified as supporting sensitive resources. Sensitive resources would be staked and flagged before construction and identified on the construction drawings, as necessary and appropriate, and activities would be monitored by trained construction inspectors, with support from qualified biologists and/or archeologists.

Surface Reclamation

Right-of-way reclamation is the final step in the conduit and cable installation process (**Appendix H**). The short-term objectives of reclamation are to control potential accelerated erosion and sedimentation and minimize impacts on adjacent waters, land uses, and other sensitive resources. Long-term objectives include erosion and sedimentation control, as well as reclamation of topography to preinstallation conditions (i.e., conditions prevailing before installation of the conduit and cable). The reclamation effort would focus on the following objectives:

topsoil salvage, storage, and replacement in wetland communities;
restoration of the right-of-way and associated maintenance and access roads;
restoration of drainage and wetland crossings; and
monitoring to ensure long-term success.

Topsoil Salvage, Storage, and Replacement in Wetland Communities

Trenching is the only installation technique with the potential to mix topsoil and subsoil. Trench depths would average approximately 4 feet. To retain the topsoil when trenching in wetland communities, which include drainages that support wetlands (when approved by the Corps as part of Nationwide Permit No. 12 authorization), double trenching would be employed. Double trenching consists of removing a layer of topsoil over the trench and then trenching the subsoil. Once the conduit is installed in the trench, the subsoil is placed back in the trench and compacted, and the topsoil is then spread over the top.

During double trenching operations, topsoil handling objectives are to remove, store, protect, and reapply the topsoil to facilitate revegetation. Topsoil is surface soil that contains higher amounts of organic matter, as well as the soil seedbank, and generally exhibits more favorable textures and less salts or other potentially limiting characteristics than subsoil. Double trenching would be used in wetlands where topsoil and seedbank are of particular importance and where double trenching has been authorized by the Corps.

At double trenching locations along the project routes, topsoil removal width and depth would vary depending on vegetation sensitivity, soil characteristics, slope, land use, potential safety hazards, and construction techniques. The topsoil would be removed to the appropriate depth to ensure the preservation of the soil and seedbank. The actual depth would be determined by field personnel at the time of construction in consultation with biologists where required. Generally, a minimum of 6 inches and a maximum of 12 inches of topsoil would be removed and stockpiled. The onsite biological and/or archeological monitors would verify the appropriate depth of the topsoil to remove.

Topsoil would be stored separately from excavated subsoil and replaced with a minimum of handling. Topsoil would not be stored in a manner that increases its water content. No drains or ditches would be blocked by topsoil or subsoil stockpiles. Additional measures that would be implemented to protect the topsoil include the following:

Gaps would be left in topsoil piles where drainages, drains, ditches, and livestock and farm machinery crossings are located.

Topsoil would not be used as padding in the trench or for any other use as a construction material.

Topsoil would be stored on the uphill side of the disturbance, away from the subsoil pile.

Topsoil would be protected from water or wind erosion by implementing measures in the SWPPPs.

After the excavation has been backfilled and the right-of-way returned to preinstallation contours, topsoil would be spread over those areas where topsoil was removed. Topsoil would not be handled during excessively wet or inordinately windy conditions. The following soil handling methods would be implemented to promote successful restoration:

Any refuse and debris would be removed from the compacted trench or excavation before topsoil is replaced.

The length of time topsoil is stored would be minimized based on the pace of the installation activities (normally, topsoil removal and respreading activities would occur on the same day).

Restoration of Right-of-Way and Associated Maintenance and Access Roads

On completion of conduit and cable installation, the plowed or trenched area within the right-of-way would be restored to a condition equal to the preinstallation condition.

In most instances, maintenance and access roads were constructed when the original road or railroad facilities were constructed. These existing roads provide access to the rights-of-way from other public or private roads. Minimal grading of these roads may be necessary in isolated areas to prepare them for use during construction.

In addition to paved state and county roads, maintenance and access roads also include low-use, unimproved farm roads. Following construction, the rights-of-way or disturbed areas would be graded to preinstallation grades and contours. Little grading is expected because no excavation activities would occur on the roads except to correct existing erosion problems.

Restoration of Drainage Crossings

The project routes would cross numerous drainages and wetlands. For most of these areas, the conduit and cable would be installed by boring, bridge attachment, or other nontrenching installation method that does not require excavation. However, if trenching is required in drainages or wetland crossings, the double trenching method described above would be used. Williams would ensure that drainages or wetlands that would be trenched receive proper clearance and approval by the CPUC, Corps, and DFG before construction begins.

Only small, nonsensitive drainages would be considered for trenching. No in-water work would occur in sensitive drainages (i.e., drainages supporting threatened or endangered species or other important functions or values) that are flowing at the time of construction. After the conduit and cable is installed, the trench would be backfilled, and the drainage channel recontoured to its preinstallation grades and bed conditions.

When the crossing is completed, the beds and banks of the drainages would be restored in a manner that allows vegetation to reestablish to its preinstallation conditions. Where necessary, a biodegradable erosion control blanket or riprap would be used to protect and stabilize streambanks. Riprap would be used only where existing stream channels consist of rock armoring and lack woody riparian vegetation. Erosion control blankets would be used on steep slopes or where the soils otherwise have high erosion potential. The type and locations of these measures would be determined in the field by the spread supervisor with input from the appropriate construction inspector.

Erosion Control

Erosion is the process of soil being displaced and transported by wind or water. Conduit and cable installation would disturb soil and vegetation, exposing sites to possible erosion. The hazard of erosion is increased by the presence of steep slopes, concentrated or channelized water flow, and high streamflows. This section summarizes the BMPs that will be undertaken in accordance with the California Code of Regulations and measures that would be implemented by Williams' contractor as specified in the SWPPPs prepared for the project routes.

The erosion and sediment control practices specified in the SWPPP are also designed to meet the erosion and sediment reduction objectives of the Garcia River Watershed Total Maximum Daily Load (TMDL) program that is nearing completion by the North Coast Regional Water Quality Control Board (RWQCB). Under the TMDL program, land management activities may opt to meet general elements of the RWQCB's Garcia River Sedimentation Reduction Plan (SRP) or submit a site-specific SRP. Erosion and sediment control practices specified in the SWPPP are similar to the required elements of an SRP which include an inventory of existing sites along the route that generate sediment, assessment of unstable areas, and monitoring of sediment reduction practices that are used. RWQCB staff are expected to inspect construction practices for compliance with the SWPPP and TMDL requirements; Williams will ensure that construction practices are implemented consistent with RWQCB requirements.

Erosion and Sediment Control Measures

Erosion and sediment control measures are used to reduce both the amount of soil that is displaced from a land area and the rate of soil discharge. The following standard erosion and sediment control measures and practices would be used during and after construction to control accelerated soil erosion and sedimentation to less-than-significant levels:

minimize site disturbance;

perform initial cleanup;

compact subsurface backfill material;

leave topsoil in roughened condition, except in road shoulders;

install trench plugs;

perform seeding and mulching;

install erosion control blankets;

install silt fencing and straw bale dikes;

where necessary, construct water bars, install baffle boards, and armor drainage banks with riprap; and

conduct periodic maintenance of erosion and sediment control measures.

These measures, described below, are routinely implemented in the construction industry and have been proven successful for similar fiber optic cable system installations.

Minimize Site Disturbance. The most basic way to avoid erosion is to minimize site disturbance. Williams' contractor would be directed at the environmental training program (described later in this chapter) to implement practices that minimize site disturbance to ensure that impacts are avoided or reduced to less-than-significant levels. The contractor would be directed to:

remove only the vegetation that is absolutely necessary to remove,

avoid off-road vehicle use,

avoid all sensitive resource areas,

avoid excessive trips along the right-of-way or access or maintenance roads, and

instruct all personnel about the concepts of stormwater pollution prevention to ensure that they are conscious of how their actions affect the potential for erosion and sedimentation.

Williams inspectors would be onsite during all construction activities and reinforce the importance of confining all vehicular traffic to the existing right-of-way and maintenance and access roads.

Perform Initial Cleanup. Williams' contractor would be directed to perform initial site cleanup immediately following conduit and cable installation. Initial cleanup includes removing debris and spoils and restoring original contours. Initial cleanup performed as part of construction would contribute significantly to the overall site stability and make final cleanup easier. The site would immediately begin to stabilize naturally with little additional effort required during final cleanup. A site that is not initially cleaned up is more susceptible to erosion.

Compact Subsurface Backfill Material. Proper compaction of subsurface soil serves as an erosion control measure. Uncompacted plow or trench furrows are susceptible to subsurface erosion through the migration of surface and subsurface water. Proper compaction of the subsurface material and plow furrows is necessary to help prevent surface and subsurface migration of water along the plow or trench furrow and prevent trench settlement.

Leave Topsoil in Roughened Condition. Reapplied topsoil would be left in roughened condition to facilitate the establishment of vegetation and reduce the potential for erosion.

Install Trench Plugs. A trench plug is a permanent mechanical erosion control measure consisting of soil-filled burlap bags placed in the excavated trench before backfilling. Trench plugs control erosion by stopping subsurface water flow. Trench plugs are placed in the trench at regular intervals along areas with steep slopes. The spacing is determined by slope grade, topography, and soil characteristics. Trench plugs would be installed as shown on the construction drawings.

Perform Seeding and Mulching. Seeding consists of sowing soil-stabilizing grasses on areas disturbed by construction activities (except crop land and areas surfaced with pavement or gravel). Vegetation promotes both erosion and sedimentation control. The root structure of vegetation holds soil in place, resisting erosion. Grasses slow the flow of surface water, allowing suspended soil particles to settle. Mulch, typically consisting of wheat straw, is usually applied over the seed to protect the soil surface until the grasses become established.

Install Erosion Control Blankets. On steep slopes that are susceptible to erosion, erosion control blankets would be installed to hold seed and soil in place until vegetation is established. The onsite spread supervisor would determine where erosion control blankets are necessary.

Install Silt Fencing and Straw Bale Dikes. Silt fences and straw bale dikes would be installed, as needed, at the toe of slopes below disturbed areas to prevent sediment from reaching streams and wetlands. These sediment barriers retain sediment while allowing water to seep through them. Straw bale dikes may also be installed around drop inlets and in small swales to retain sediment.

Additional Measures

The following measures may be used, but would only be used rarely because Williams would avoid construction on steep slopes.

Construct Water Bars. A water bar is an earthen berm permanently placed along the ground across the disturbed area of construction. Water bars control erosion by slowing runoff rates and diverting runoff from the disturbed area.

Install Baffle Boards. A baffle board consists of pressure-treated 2- by 12-inch boards and 4-inch-diameter wooden posts. Baffle boards work like water bars, but are used on slopes too steep for water bars to function. Baffle boards cannot be used on roads. Baffle board spacing is determined by slope grade, topography, and soil type. Baffle boards would be installed, as necessary, by the contractor during final cleanup.

Armor Drainage Banks with Riprap. Armoring drainage banks with riprap may be used on rare occasions. Riprap is a method of permanent erosion control used for slope stabilization, water energy dissipation, and armoring of stream banks. Riprap would be used only on stream banks where the existing channel consists of rock or in highly erodible drainages that lack woody riparian vegetation.

Assessment and Implementation of Erosion Control Measures

Existing permanent erosion control measures are likely in place along many existing rights-of-way as a result of previous facility construction. The effectiveness of these measures would be evaluated before construction. Any existing measures would be restored as required and left in place after the installation of the fiber optic cable system is complete. Following construction activities, the right-of-way would also be assessed by the spread superintendent to determine where additional erosion control measures are necessary.

Equipment Maintenance and Refueling

The equipment used for the projects would require periodic maintenance and refueling. These activities would be accomplished responsibly, using prescribed spill prevention countermeasures (**Appendix E**). To reduce the potential of contamination by spills, no refueling, storage, servicing, or maintenance of equipment would occur within 150 feet of drainages or other sensitive environmental resources. No refueling or servicing would be done without placing absorbent material or drip pans underneath the vehicle to contain spilled fuel. Any fluids drained from the machinery during servicing would be collected in leak-proof containers and taken to an appropriate disposal or recycling facility. If these activities result in damage to or accumulation of a product on the soil, it would be assessed and disposed of properly. Under no circumstances would contaminated soils be added to a spoils pile.

Onsite refueling of construction equipment would be done by mobile refueling trucks. The refueling trucks would be independently licensed and regulated to transport and dispense fuels. This licensing and regulation would help ensure that the appropriate spill prevention techniques are implemented.

Restrictions would be placed on all equipment refueling, servicing, and maintenance supplies and activities. All maintenance materials, oils, grease, lubricants, antifreeze, and similar materials would be stored in offsite staging areas. If these materials are required during field operations, they would be placed in a designated area away from site activities and sensitive resources.

During construction, all vehicles and equipment required onsite would be parked or stored at least 150 feet away from rivers, streams, wetlands, known archeological sites, and other sensitive resource areas. These areas would be identified on the ground and noted on U.S. Geological Survey 7.5-minute quadrangles and on the construction drawings, as appropriate. All wash-down activities would be conducted at least 150 feet from sensitive environmental resources.

CONSTRUCTION MANAGEMENT STRUCTURE

Williams has extensive experience constructing fiber optic cable facilities. Since 1997, the company has installed over 8,000 miles of fiber optic cable in the United States. Before 1997, a former affiliate of Williams pioneered fiber optic installation within idle pipelines and pipeline corridors while constructing and operating a 13,000-mile fiber optic cable system spanning 37 states.

To provide the best potential for success of the projects, a proper management structure, adequate training of field personnel, an environmental awareness program, and the ability to respond to changing circumstances are critical. A field management structure has been established (**Figure 2-6**) and mitigation monitoring plans have been prepared and adopted (**Appendix I**) for overseeing the construction process. In addition, training classes for the contractor and construction crews would be held to cover issues such as environmental protection, safety, spill prevention and response, fire prevention and management, and proper management of storm water runoff.

The field management structure established for the project routes would include engineering, construction, and environmental personnel, such as spread superintendents, spread supervisors, contract compliance inspectors, environmental resource coordinators, and biological and archeological support. The roles and responsibilities of each onsite representative would be clearly understood and communicated during the training program and are summarized below.

Spread Superintendent

The Williams spread superintendent would be onsite to address engineering questions, make field decisions, and coordinate with permitting agencies. The spread superintendent has the overall responsibility for onsite decisions and direct reporting responsibilities to the Williams' project manager for contract compliance, as well as the ability to halt construction operations in case of environmental noncompliance, emergencies, safety issues, and disputes with the construction contractor.

Spread Supervisor

Williams' spread supervisor would be onsite to oversee the individual contract compliance inspectors and work with the contractor to resolve field conflicts. The spread supervisor would report directly to the spread superintendent and performs most of the administrative duties. The spread supervisor would communicate all information on construction activities related to compliance, safety, and administration on a daily basis.

Contract Compliance Inspectors

Contract compliance inspectors would be assigned to each construction crew to observe their work. If multiple crews work in the same area, one inspector may monitor more than one crew. The contract compliance inspector would monitor environmental resource concerns and check implementation of erosion protection measures. The contract compliance inspector would be trained in environmental issues that may be encountered during construction and would have immediate access to qualified biologists, archeologists, and paleontologists when necessary.

Environmental Resource Coordinator

An environmental resource coordinator would be assigned to the project routes. The environmental resource coordinator would work with the contract compliance inspector, biologists, archeologists, agencies, and the engineering and construction representatives to resolve conflicts and coordinate resource avoidance and protection. The environmental resource coordinator would patrol the construction site periodically (while maintaining contact with spread superintendents, spread supervisors, and contract compliance inspectors) to help monitor implementation of resource protection measures.

Biological and Archeological Resource Monitors

Qualified biologists and archeologists would locate and stake in the field and locate on the construction drawings previously identified sensitive resources and identify the necessary protection methods for the contractor. Biologists and archaeologists would also be onsite during construction where their presence is needed, as required in this document, or as a condition of required permits. In addition, they would coordinate, as necessary, with monitors from the CPUC and any other appropriate agencies. Other resource monitors (i.e., Native American and paleontological monitors) would be available, as necessary and appropriate.

ENVIRONMENTAL TRAINING AND AWARENESS

An important component of implementing construction successfully is education through training and awareness programs. All levels of field management and construction personnel would be informed about environmental protection and the seriousness of noncompliance. Training would take place at the Williams engineering level and the contractor level. Appropriate personnel from the CPUC would attend environmental training sessions, and other regulatory agencies would be invited.

Williams and its Consultant Team

Williams and its consultant team includes contract compliance inspectors, environmental resource coordinators, biologists and archeologists, and spread superintendents and supervisors. Training seminars led by project managers and qualified biologists and archeologists would be held before construction to explain and educate construction supervisors and managers about the following:

- the need for and importance of resource avoidance and protection,
- resource mapping format and interpretation of construction drawings,
- resource protection staking methods,
- construction process as it relates to required mitigation measures,
- roles and responsibilities, and
- project management structure and contacts.

All contract compliance inspectors would be required to complete an inspector training class covering the issues mentioned above.

Contractor Team

The contractor team would include the job superintendent, crew foremen, and crew members. Training and education would take place through several processes beginning with the preconstruction meetings and continuing with field meetings to reinforce previous training.

Preconstruction Meetings

Meetings with the contractor would be held before construction begins on the project routes. These meetings would be used to reinforce the need for and importance of compliance with environmental resource avoidance and protection measures.

The following issues related to environmental protection would be explained at these meetings:

the need for and importance of resource avoidance and protection,
resource mapping format and interpretation of construction drawings,
resource protection staking methods,
construction process as it relates to required mitigation measures,
roles and responsibilities, and
project management structure and contacts.

Field Meetings - Contractor Job Superintendents and Foremen

The spread superintendents and supervisors, contract compliance inspectors, and environmental coordinators would regularly conduct meetings with the contractors' superintendents and foremen to coordinate the construction and mitigation processes.

Contractor Crew Members

The contractors' foremen would be responsible for transmitting the information discussed in the preconstruction meetings to the individual crew members through tailgate meetings in the field. These tailgate meetings are usually held weekly to discuss safety issues and would be attended by the contract compliance inspectors and environmental resource coordinator. Environmental issues would also be included and discussed in these meetings.

LAND USES ISSUES

The project routes crosses land owned and/or used by other entities, including public roads, utilities, railroads, and private property.

Public Roads

The project routes both parallel and cross numerous existing public roads. In almost all cases, the fiber optic cable system would be installed in the road shoulder or beneath these roads without resulting in surface disturbance. Permits would be acquired from the appropriate governing agency, including the California Department of Transportation (Caltrans), where necessary before construction in public road rights-of-way.

In coordination with affected jurisdictions, Williams would comply with local requirements for installation activities within public road and highway rights-of-way to reduce construction-related impacts on traffic and circulation patterns during the construction period. All construction activities would follow the standard construction specifications of the affected jurisdictions.

Utility Crossings

Conduit and cable installation would not threaten overhead utilities because of the amount of vertical clearance under the utilities. For underground facilities, "One Call" utility location services would be contacted a minimum of 48 hours before construction. One Call services alert all registered utilities about the scheduled construction activities, allowing the utilities to identify the location of their underground facilities and thus greatly reduce the possibility of interruptions in utility services.

Private Property

In a few locations, the project routes cross private property. Landowners would be contacted and permission received from the landowner before construction. Right-of-way personnel would be available to answer landowners' questions during construction and to negotiate any cleanup or restoration issues that may arise.

CONSTRUCTION SCHEDULE AND WORKFORCE

Construction Schedule

Construction of the fiber optic cable system is scheduled to commence in March 2000, or on receipt of all necessary authorizations from the CPUC and other applicable governing agencies, and scheduled to be completed by August 2000. All appropriate permits and approvals would be in place before construction commences in a particular area and would be provided to the CPUC. Construction segments and schedules may vary according to environmental constraints (biological, archeological, seasonal work windows) and the completion of permitting processes.

Sequence of Work

Monitoring activities associated with construction would proceed as follows:

- locate all sensitive resources, construction methods, and avoidance measures or mitigation measures on the construction drawings;
- acquire permits and approvals from governing agencies;
- conduct preconstruction wildlife surveys in predetermined suitable habitat areas;
- stake and flag resources as stipulated in the environmental documentation and from results of field surveys conducted for the project routes;
- prepare the rights-of-way and install sedimentation control measures where needed;
- install conduit and cable and construct associated facilities;
- restore the rights-of-way and install erosion control measures;
- apply seed and mulch as specified in the SWPPPs and reclamation plans;
- monitor erosion control; and

monitor success of mitigation.

Construction Workforce

The labor and equipment associated with each type of construction method were discussed previously. The number and types of crews associated with each project route segment (spread) and the flow of construction activities along the project routes are discussed below. The actual number and composition of the workforce may vary with conditions at the time of construction. The contractor is responsible for determining the most efficient methods for completing the work within the given parameters.

Williams is anticipating hiring multiple contractors to install the conduit and cable and construct associated facilities. On past similar fiber optic installation projects with multiple contractors, each contractor has been expected to operate one spread on the project routes. The number of spreads may vary depending on the contractor's ability to meet the schedule for fiber optic cable system installation. Each spread would consist of the following crews:

Preparation Crew – The preparation crews would prepare the rights-of-way for construction by placing temporary gates in fences, clearing vegetation where necessary, and repairing erosion problems on existing roads to provide access.

Installation Crew – The installation crews would install the conduit and cable using the construction methods discussed in this chapter.

Cleanup Crew – The cleanup crews would perform final cleanup of the rights-of-way, restoring preinstallation ground contours, installing erosion protection measures (e.g., erosion control blankets), and restoring affected stream channels.

Seeding Crew – The seeding crews would apply seed and mulch where necessary.

SUMMARY OF MITIGATION MEASURES INCORPORATED INTO DESIGN AND CONSTRUCTION APPROACH

Williams would be responsible for implementing the mitigation measures identified in this document and other measures that would be determined by the associated permitting agencies and through the CEQA review process (e.g., DFG, Corps, CSLC, Caltrans, RWQCBs). Some of the general mitigation measures that are known at the time of the preparation of this document are described below. The measures have been developed and designed as part of the projects to avoid potential significant impacts or reduce them to less-than-significant levels.

Staging Areas

No new equipment staging areas would be established in undisturbed areas or on public lands; all staging areas would be located on private lands. To the fullest extent possible, access to the projects would be by existing access roads to the road and railroad rights-of-way used for the projects. If any new access roads to OP-AMP/regenerator stations are required, surveys would be conducted to identify sensitive biological and archeological resources. These resources would be fully avoided and approved for use by the CPUC prior to construction.

Sensitive Resources

All sensitive resources (i.e., biological and archeological resources, sensitive stream crossings, wetlands) would be identified during field studies and staked and flagged in the field and marked on construction drawings before construction. Most sensitive resources already have been identified along the project routes and are specifically addressed and documented in this subsequent IS/MND. Additional botanical surveys will be conducted between March and April 2000 to locate any early blooming special-status plant species not identified during previous surveys. All sensitive resources would be identified and documented for the CPUC and other regulatory agencies at the permitting stage and prior to construction. The remaining field studies (i.e., plants that can only be identified in spring) would be completed prior to construction. Sensitive resources would be avoided by minor modification of the project routes within the disturbed right-of-way; boring under the resource; or attaching the conduit to an existing bridge, where applicable. The conduit and cable would be bored under sensitive streams (streams supporting threatened or endangered species or other resources of special value) or attached to bridges, and no construction activities would be conducted within the limits of the stream. No construction equipment would be operated in sensitive streams.

Work Scheduling

Construction activities would be scheduled so they do not interfere with the reproductive cycles of sensitive plant and animal species. Construction work windows would be included, where applicable, in the construction specifications.

Work in Wet Weather

In consultation with the contract compliance inspector and environmental professionals, as needed, no construction or routine maintenance activities would be performed during periods when the soil is too wet to support the construction equipment.

Storm Water Pollution Prevention Plans

SWPPPs have been developed **(Appendix E)** and submitted to the appropriate RWQCB for the project routes in support of NPDES regulations, as required by the RWQCB. The plans identify activities that may cause pollutant discharge (including sediment) during storms, and the BMPs that would be employed to control pollutant discharge. Construction techniques that reduce the potential for runoff, including minimizing site disturbance, controlling water flow over construction sites, stabilizing bare soil, and ensuring proper site cleanup are identified. In addition, the plans specify the erosion and sedimentation control measures to be implemented, such as silt fences, trench plugs, terraces, water bars, baffle boards, and seeding and mulching.

The SWPPPs also specify spill prevention countermeasures, the types of materials used for equipment operation (mainly vehicle fluids such as fuel and hydraulic fluids), and measures to prevent or cleanup hazardous material and waste spills. Emergency procedures for responding to spills is also identified.

The SWPPPs would be included in the contract specifications for these projects.

Fire Prevention and Response Plans

Fire prevention and response plans have been developed and submitted to the appropriate regulatory agencies. These plans were developed with input from the fire response managers of affected agencies and would be submitted prior to construction. These plans identify the fire precaution and suppression measures that would be implemented and the parties responsible for fire prevention and response. Prevention and response measures, such as requirements to have firefighting water tanks onsite and extinguishers and shovels in vehicles, have been identified (**Appendix J**).

The fire prevention and response plans would be included in the contract specifications for these projects.

Reclamation Plans

Rreclamation plans have been developed for these project routes, as required by applicable regulatory agencies. These reclamation plans identify areas that would be restored and the methods that would be used. Seed mixes, schedules, success criteria, and monitoring requirements for restoration of wetlands and drainages are identified (**Appendix H**).

The reclamation plans would be included in the contract specifications for these project routes.

CUMULATIVE IMPACTS

This section evaluates the project's potential contribution to cumulative impacts that could result from the approval of past, present, and reasonably foreseeable future projects, in conjunction with the project route. CEQA requires a discussion of a project's cumulative impacts when "the project's incremental effect is cumulatively considerable" (State of California 1999; Sec. 15130). According to CEQA, even if a project's impacts are individually limited, when these impacts are evaluated within the context of other projects, past, current, and future, the project's impacts may contribute considerably to overall cumulative impacts (ibid.; Section 15065).

Based on the analysis of this project and a review of existing and anticipated development in the project study area, the following evaluation was prepared. Existing environmental setting described in Chapter 4A, "Environmental Setting for Point Arena to Robbins", and 4B, "Environmental Setting for Point Arena to Sacramento", are the basis for the cumulative analysis. The cumulative evaluation only covers those environmental topic areas where cumulative impacts have the potential to occur.

Cumulative impacts are not anticipated in the following areas; therefore, they have not been included in the cumulative discussion: mineral resources, population and housing, and utilities and service systems. The basis for not including and expanded discussion of the potential cumulative impacts for these topic areas is stated below.

- Mineral resources. The installation of conduit and cable in existing rights-of-way would not affect the prior ability to access mineral resources within these rights-of-way. The limited number of OP-AMP/regenerator stations that would be installed and Williams' preference to build them at existing substations and keep them out of 100-year floodplains greatly limits the potential that any such station would interfere with an existing or future mineral resource recovery operation. Therefore, the project would not cause any cumulative impact on mineral resources.

- Population and housing. The project would neither produce nor displace housing. It would have no impact on population or housing and would not contribute to cumulative impacts.

Utilities and service systems. The project would not require utilities or service systems. Therefore, it would not contribute to cumulative impacts.

The following projects would be most relevant to potential cumulative impacts.

Dunnigan-Manchester Fiber Optic Project. AT&T will be installing buried fiber optic cable and associated facilities from the Dunningan Radio Facility near Dunnigan, California, to the Manchester Radio Facility near Manchester, California. This new fiber optic cable will replace existing, obsolete cable that is not compatible with the new switching equipment and must be replaced. This route, which will closely follow the existing route, will tie the recently replaced Dunnigan-to-Sacramento fiber optic cable with the Manchester Radio Facility. Installation will be primarily within an existing AT&T right-of-way. In five distinct re-route areas (totaling approximately 39 miles), installation will occur within new rights-of-way.

AT&T Japan-U.S. Fiber Optic Project. The AT&T Japan-U.S. cable landing project would be located in the ocean and the immediate shoreline where it connects to the Manchester Radio facility.

Timbering operations in western Mendocino County. This cumulative analysis also takes into account existing, ongoing development that may contribute to potential cumulative impacts in the project study area. The primary industry in western Mendocino County is logging. Transport of the logged trees takes place along unpaved and paved roads.

1989 AT&T fiber optic cable installation. The existing AT&T fiber optic cable was installed in 1989. This previous project will be considered in the cumulative analysis relevant to fiber optic presence along logging roads in western Mendocino County.

Aesthetics

The Williams fiber optic cable system installation project and the projects discussed above would include associated facilities and cable markers that would be visible. The associated facilities would be sited only in areas that do not support sensitive resources and would be designed to be unobtrusive. Cable markers indicating the existence of underground fiber optic cable would be installed along the project route; however, they would be within existing rights-of-way containing either railroads, roads, or other facilities and would be consistent with the existing markers already located within these disturbed rights-of-way. These projects would not make a cumulative considerable contribution to any impact on aesthetics.

Agricultural Resources

The Williams fiber optic cable system installation project and the projects discussed above could potentially result in, at most, temporary disruption of agricultural activities during construction. Most impacts would occur only in the areas of the disturbed right-of-way, which would not affect agriculture. Any agricultural activities allowed within the right-of-way before project construction would be allowed to continue after its installation. However, it is unlikely that agricultural activities currently occur within these railroad or road rights-of-way. The project would not contribute to the loss of agricultural land in California.

Air Quality

The project could result in temporary air emissions from the consumption of fuel by construction equipment. In addition, dust could be generated during construction activities. These are short-term impacts that would not be compounded by other short-term air quality impacts because it is unlikely that they would occur in the same area and at the same time as other construction projects.

With implementation of the identified mitigation measures, the project would comply with all air quality standards. Installation and operation of the fiber optic cable system would neither conflict with or obstruct implementation of any applicable state or federal air quality plan, or violate any air quality standard or contribute substantially to an air quality violation. It would not result in a cumulatively considerable net increase of a criteria pollutant in a nonattainment area. Furthermore, it would not expose sensitive receptors to substantial pollutant concentrations.

Biology

The project discussed above could have an effect on special-status plant and wildlife species. However, these projects incorporate mitigation measures that would reduce these impacts to less-than-significant levels. Impacts on listed species would be avoided by Williams because mitigation measures described in Chapter 5A, "Environmental Impacts and Mitigation Measures for Point Arena to Robbins", and 5B, "Environmental Impacts and Mitigation Measures for Point Arena to Sacramento" would be implemented. These mitigation measures would be incorporated into project design specifications. Therefore, no cumulative impacts on listed species or their habitats are anticipated for the following reasons:

Most of the major habitat types the project would affect are abundant in the project study area.

The project route is linear and narrow and construction would disturb a small amount of habitat relative to the amount of these habitats available locally and project wide.

Activities related to the project would be temporary and vegetation would be expected to recover quickly particularly within disturbed rights-of-way.

OP-AMP/regenerator facilities, while resulting in a small amount of permanent habitat loss, would be sited in areas that either do not support habitat (i.e., developed sites), support only ruderal vegetation, or support a locally common plant community.

Much of the project route would be already disturbed from original construction and ongoing maintenance activities for the railroad and road rights-of-way.

Mitigation measures have been designed and incorporated into the project design and construction approach to avoid or minimize effects on biological resources to less-than-significant levels. Additionally, Williams has adopted all of the recommended biological mitigation measures in this document as part of the project.

Much of the project study area is relatively remote and the project would be located primarily within already disturbed or developed rights-of-way.

The cumulative impacts of the project on fish or their habitats are expected to be minimal. No direct habitat loss or impairment of passage or migration would occur because, as designed, Williams would use noninvasive drainage crossing methods for flowing sensitive streams (i.e., crossings would not require in-water work or structures) and multiple crossings within individual drainages would be minimized. All identified projects could potentially have an impact on fisheries resources. However, each project would implement spill prevention countermeasures similar to those being implemented by Williams. Measures to minimize the potential for long-term chronic erosion and stabilize site conditions and minimize the potential for accidental spills of materials to surface waters to less-than-significant levels would be implemented. Therefore, no cumulative impacts on fish populations or their habitats are anticipated.

Cultural Resources

The Williams fiber optic cable system installation project and the projects discussed above could potentially disturb cultural resources during construction. These projects have incorporated mitigation measures to reduce these impacts to less-than-significant levels. Williams would also avoid impacts on all identified cultural resources. In addition to avoiding impacts on specific identified resources, the project will not contribute to larger cumulative impacts on historic properties. With the implementation of monitoring and mitigation measures, no cumulative impacts will result from the project.

Geology and Soils

Development in California has the cumulative impact of bringing additional people into potential contact with geologic hazards. In some instances, such as where mass grading occurs, a project may directly contribute to increased landslide hazard or soil erosion.

The project would not expose persons to substantial risk of loss, injury, or death relative to geologic hazards; result in substantial soil erosion; potentially result in landslides or other mass movement; create substantial risks due to expansive soils; or produce wastewater from septic tanks, sewers, or other disposal facilities. Therefore, the contribution of the project to cumulative impacts would be less than significant.

Hazards and Hazardous Materials

The proposed project would not be expected to make a considerable contribution toward hazard or hazardous materials impacts. Contaminated soils or other materials may be unexpectedly encountered along the project route and would require appropriate handling and disposal by a licensed contractor. Because the characteristics and the volume of hazardous materials that could be unexpectedly encountered during construction of the projects cannot be determined, the possible cumulative impact is only speculative. Some materials encountered along the project routes may be recyclable, which would reduce any possible impact on hazardous waste disposal/landfill capacity to a less-than-significant level. The cumulative impact of disposal of contaminated materials unexpectedly encountered along the project routes are considered a less-than-significant impact because of regulatory safeguards that limit exposure and require controlled handling and disposal.

Hydrology and Water Quality

Cumulative temporary water quality impacts from erosion and discharges of contaminated storm water could occur in watersheds because of other similar ground-disturbing activities taking place such as other underground cable installation projects, logging, or road building. Large-scale projects are individually responsible for implementation of appropriate erosion and spill control measures pursuant to their applicable permitting processes such as streambed alteration agreements, waste discharge requirements and NPDES storm water permits, and local grading ordinances. Because the project would also be responsible for avoiding and minimizing water quality impacts and implementing BMPs as specified in the SWPPP, the cumulative effect of temporary, small increases in sediment load would be minimal to the overall amount occurring from all other similar projects. Because the direct and residual effects of trench spoils erosion would be minor after complete restoration of disturbed areas, no cumulative long-term impacts would be expected. Successful spill prevention countermeasures would result in no cumulative impacts.

Land Use and Planning

The Williams fiber optic cable system installation project and the cumulative projects discussed above would neither result in the physical division of a community or leave evidence of its existence, other than the associated facilities. Further, any necessary discretionary permits would be obtained from state and federal agencies relative to habitat conservation plans, thereby ensuring compliance with such plans, and from local agencies relative to zoning regulations. These projects would make little contribution to any cumulative effect.

Noise

Noise is a temporary impact that occurs only during the construction phase of the construction phase of the project. It is unlikely that other projects would be under construction in the same area at the same time. Williams will also incorporate mitigation measures to reduce noise impacts to less-than-significant levels. Therefore, noise impacts would be temporary and highly localized, and no cumulative impacts are anticipated.

Public Services

The project would not require public services. Therefore, it would not contribute to any cumulative impacts.

Recreation

The project would not require recreational services or adversely affect recreational hunting on more than a temporary basis. Therefore, it would not contribute to cumulative impacts.

Transportation/Traffic

The Williams fiber optic cable system installation project and the project discussed above would not result in any increase in vehicular traffic beyond the marginal temporary increase caused by installation crews. The projects may result in temporary obstructions of traffic, but the individual traffic plans being instituted as part of each project would minimize the impacts of such obstructions on traffic flow and emergency access. These are short-term impacts that would not be compounded by other traffic impacts because it is extremely unlikely that they would occur in the same area at the same time as other construction projects. As a result, these projects would not contribute to a cumulatively considerable transportation or traffic impact.

NO-PROJECT ALTERNATIVE

The No-Project Alternative is the circumstance under which the fiber optic cable system is not installed. The temporary impacts of installing the fiber optic cable system would not occur. Because the projects would not have significant impacts that cannot be avoided or mitigated, selection of the No-Project Alternative would have no net environmental benefits.