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CHAPTER 1 EXECUTIVE SUMMARY

PacifiCorp proposes to upgrade the electric transmission system between Yreka and Weed in Siskiyou County. The Yreka / Weed Transmission Upgrade Project will upgrade the existing Line 1, a single wood pole 69 kilovolt (kV) transmission line, to 115 kV. The upgraded line will replace approximately 17 miles of existing wood poles with new wood poles 9 feet higher on average. In addition to upgrading Line 1 within the existing right-of-way, approximately 1.6 miles of new 115 kV transmission line will also be installed within a new right-of-way and three existing substations will be modified. The upgraded and new line together will be called Line 75.

The upgrade to Line 1 will occur begin at a tap point along the existing Line 75, which is located between the Hart Switching Station and Yreka Substation. The tap point is approximately 1 mile south of Montague. The 17 mile upgrade will end approximately 1 mile north of the City of Weed, where the new 1.6 miles of 115 kV line will be constructed into the Weed Junction Substation.

The Yreka, Lucerne, and Weed Junction Substation will require upgrades to existing equipment within the substation boundaries. All construction will occur within the existing fence lines to accommodate the new circuit. An analysis of potential environmental impacts as a result of the Lucerne Substation upgrade has been included within this PEA. PacifiCorp is seeking an exemption from California Environmental Quality Act (CEQA) review for Yreka and Weed Junction substations.

In order to mitigate potential environmental impacts of the Project, PacifiCorp proposes to locate the upgraded transmission line within the existing Line 1 right-of-way. The new wood poles will be placed in the same location or adjacent to the existing poles, wherever feasible. Only the new 1.6 miles of 115 kV line will require a new right-of-way.

The Project is needed in order to meet three objectives. The first is to ensure that the transmission system in the area has adequate capacity to safely and reliably meet local and contractual electric system demands. The second objective is to ensure the area transmission system meets planning criteria by providing an alternative transmission path in case of an outage of Line 14 between Hart Switching Station and Weed Junction by meeting Western Electricity Coordinating Council (WECC) N-1 Criteria (one line out of service). The final objective is to meet summer 2007 peak loads. In order to meet this objective, construction must be started in the fall of 2006.

Without this project, and with continued load growth in the area, Line 14 could be overloaded to the point that it would fail, resulting in a prolonged outage to the area while the line is rebuilt.

The Project was planned and engineered to avoid or minimize environmental impacts while still meeting the objectives stated above. This Proponent's Environmental Assessment (PEA) was produced to evaluate potential environmental impacts of the Project. Some of the key environmental issues evaluated include:

- Potential impacts to biological and cultural resources, and
- Potential visual impacts to the Project area.

However, the analysis in this PEA shows that all potentially significant impacts of the project can be avoided or mitigated to a less than significant level.

PacifiCorp is submitting this PEA to the California Public Utilities Commission (CPUC) in support of its Application for a Permit to Construct (PTC) the Project. The CPUC holds jurisdiction over the siting of transmission projects proposed by electrical corporations within the state of California, and is the lead agency with respect to such projects under CEQA (Cal. Pub. Res. Code Sec. 21000 et seq.). Therefore, in the Application of which this PEA is a part,

PacifiCorp seeks from the CPUC a PTC confirming the construction of the Project along the transmission line alignment as presented within this PEA, based on environmental review required by CEQA, consistent with General Order 131-D. The CPUC's *Information and Criteria List* for submittal of PEAs was used to produce this report.

Because all project impacts are less than significant or can be mitigated to a less than significant level, it is anticipated that the CPUC will be able to prepare a *Mitigated Negative Declaration* for its review of the project per CEQA. After permits are obtained, construction is expected to take approximately 3 months to complete. PacifiCorp seeks to have the Project in operation by June 2007.

CHAPTER 2 PROJECT DESCRIPTION

2.1 Project Overview

PacifiCorp has a transmission system comprised of several substations connected by 115 kV and 69 kV transmission lines (See Figure 2-1) near the cities of Yreka and Weed in the northern California area.

One of the 115 kV transmission lines (Line 14) runs from the Copco 2 substation near the California/Oregon border, south to Pacific Gas and Electric's (PG&E) Cascade substation near Lake Shasta. The line serves local distribution load and a long term, point-to-point, transmission service contract. Load growth in the Mt. Shasta and Weed areas has led to overloading of the line. When lines are overloaded, electrical loads are curtailed until the load on the line is brought into design limits. Local area reliability is at risk of service outages due to the reliance on this single path.

This project proposes to add a second 115 kV transmission path and unload some of the local load from the existing Line 14. This will be accomplished by upgrading approximately 17 miles of an existing 69 kV transmission line (Line 1), to 115 kV, adding approximately 1.6 miles of new 115 kV transmission line, and modifying three existing substations as described below. The upgraded and new line together will be called Line 75. Figure 2-2 shows the system after this modification.

Options to this project considered but eliminated include:

1. Rebuilding Line 14 using larger conductor to increase capacity. This option would involve replacing all of the H-frame structures and conductor for 37 miles between Copco 2 and Weed Junction Substations. It was eliminated because of the high cost and because there would still be risk of an outage caused by the loss of this line (it does not meet WECC N-1 criteria) and because of the difficulties in taking the line out of service for the rebuild.
2. Upgrading Line 2 to 115 kV. This option would involve reconductoring 37 miles of line and making major modifications to four substations. This option was eliminated because of cost and because of the proximity of Line 2 to Line 14 and the risk of a single event, such as a fire, taking out both transmission lines.
3. Do nothing. This option is not viable as Line 14 is currently experiencing periods where it is overloaded. Ultimately this will result in outages in the area and it does not meet WECC N-1 criteria.

For a more detailed description of options considered, please see Section 3.2, Project Alternatives Considered and Eliminated.

2.1.1 Summary of Project Components

Upgrade Existing Line

- Upgrade 17 miles of existing 69 kV line to 115 kV.
- Replace existing single wooden poles in the same location with single wood poles that are nine feet taller on average.
- Increase conductor size to 795 aluminum conductor with steel reinforcement (ACSR) except for 3.7 miles that was upgraded as part of a road widening in the 1970's.
- Transfer existing distribution and communication cables to the new poles.

Build New 115 kV Line

- Build approximately 1.6 miles of new 115 kV transmission line heading west from the Weed Junction substation to the upgraded line.

Yreka Substation

- Add a new 115 kV breaker within the existing fence.

Lucerne Substation

- Rebuild the 69 kV substation within the existing fence to 115 kV including replacing the wood structure with a metal structure.

Weed Junction Substation

- Add new 115 kV line position within the existing fence.
- Split the 115 kV bus.

Figure 2-1. Transmission System Pre-Project.

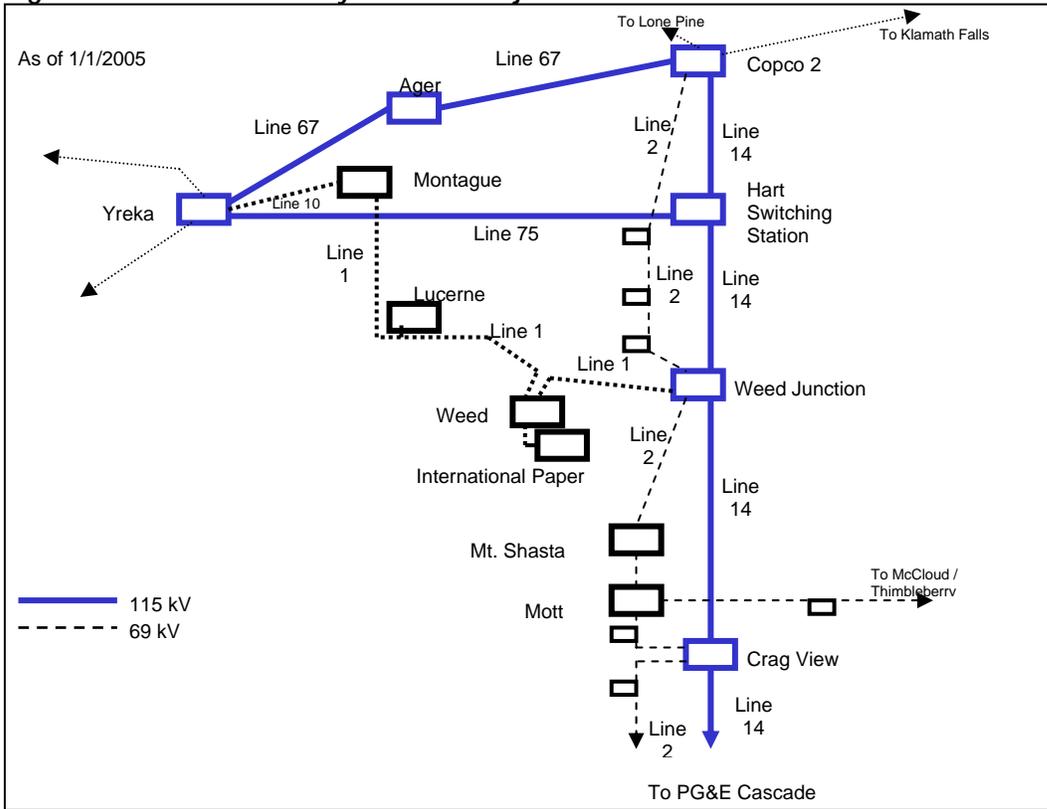
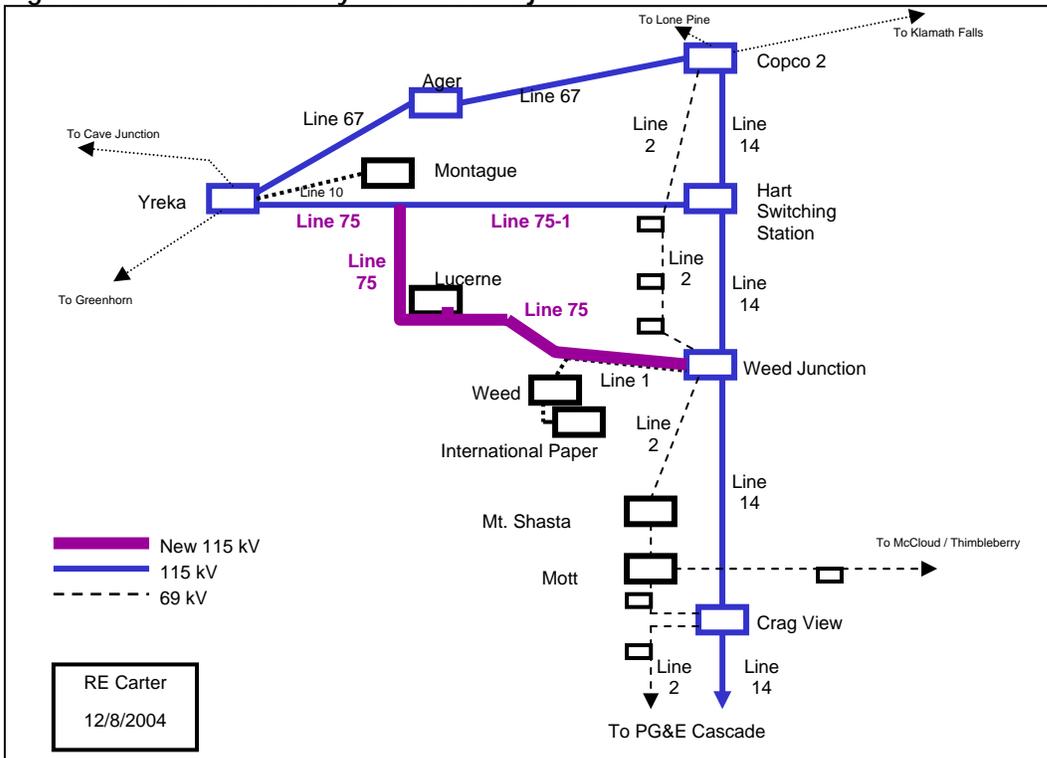


Figure 2-2. Transmission System Post-Project



2.2 Project Purpose and Need

Statement of Objectives

The basic objectives of the Yreka – Weed Transmission Upgrade are as follows:

- **Meet electric system demand** – The main objective of this project is to ensure that the system has adequate capacity to safely and reliably meet local and contractual electric system demand.
- **Ensure transmission system reliability** – The second objective is to ensure the area transmission system meets planning criteria by providing an alternative transmission path in case of an outage of Line 14 between Hart Switching Station and Weed Junction by meeting Western Electricity Coordinating Council (WECC) N-1 Criteria (one line out of service).
- **Complete Project by summer 2007** – Meet summer 2007 peak loads. In order to meet this objective, construction must be started in the fall of 2006 as the ground may be too wet for construction in the spring.

The basis for PacifiCorp's conclusion that the proposed Project is needed is beyond the scope of this Permit to Construct (PTC) Application. As the California Public Utilities Commission (CPUC) has repeatedly acknowledged, "need" issues are beyond the scope of a PTC application. (See, for example, Assigned Commissioner's Ruling dated October 16, 2002, A.01-07-004, p. 5 ("the need for the project is outside the scope of this [Atlantic-Del Mar PTC] proceeding"); D.94-06-014, 55 CPUC 2d 87, 92 (PTC review "focuses solely on environmental concerns, unlike the CPCN process which considers the need for and economic cost of a proposed facility"); GO 131-D, Section IX.B.1.f ("an application for a permit to construct need not include . . . a detailed analysis of purpose and necessity").) Nonetheless, PacifiCorp provides the following discussion of the purpose and need for the project for informational purposes.

The Yreka-Weed transmission project is necessary to improve reliability by increasing transmission capacity in the Yreka-Weed area in order to continue safe and reliable electric service to customers in the area, and to meet contractual obligations.

Without this project, and with continued load growth in the area, Line 14 could be overloaded to the point that it would fail, resulting in a prolonged outage to the area while the line is rebuilt.

2.3 Description of the Project

The Yreka-Weed Transmission upgrade project will add a second 115 kV transmission path allowing some of the local load to be removed from Line 14. This will be accomplished by upgrading 17 miles of an existing 69 kV transmission line to 115 kV, building 1.6 miles of new 115 kV line, and modifying three substations.

The proposed method of providing a separate 115 kV source to Weed Junction is to tap Line 75 about five miles east of Yreka Substation. The existing Line 1 will then be rebuilt and converted from 69 kV to 115 kV using 795 ACSR conductor. The existing 69 kV Line 1 circuit currently terminates at the Weed Substation. The proposed 115 kV line will no longer terminate at Weed Substation, and therefore will require a new 1.6 mile 115 kV line constructed to complete the circuit into Weed Junction Substation (see Figure 2). Lucerne substation will also be converted to 115 kV. The new complete 115 kV line will become an extension of Line 75, altering it to run between new breakers at Yreka Substation and Weed Junction Substation, with an open tap at Hart Switching Station. Weed and International Paper Substations will remain at 69 kV on a two mile long radial line, until converted at a future date.

2.3.1 Project Components

Upgrade existing 69 kV line to 115 kV

Line 75 crosses over Line 1 at a point five miles east of Yreka Substation. At this point, the two lines will be connected together by reframing the existing pole and installing new 115 kV line switches to the east, west, and south of the new tie. Line 1 will remain open on the north side of the tie with a dead span. This will leave the 69 kV Montague Substation, about 1.5 miles to the north, served via the 69 kV Line 10 from Yreka Substation on a radial feed. The load on Montague substation is about four MVA and not growing, placing it well below the planning limits for a radial configuration.

Line 1 runs for 21 miles between the Line 75 crossing and Weed Substation, taking a fairly direct route past Lucerne Substation. A 3.76 mile section of the line was relocated and rebuilt with 397.5 ACSR conductor and insulated to 115 kV due to a road widening project in the 1970's. This project proposes to rebuild Line 1 from the Line 75 crossing to structure 9/45, which will serve as the tap point into Weed Junction Substation. It will be rebuilt with 795 ACSR conductor and 115 kV insulation, with the exception of the 3.76 mile long section that has already been converted. The construction will require replacement of all wood pole structures and transfer of the existing distribution equipment located on the existing 69 kV poles to the new 115 kV wood structures. The replacement of the poles will occur within the existing right-of-way. The new poles will be placed immediately adjacent to the existing poles, and the old poles will be removed or cut off at ground level.

Build 1.6 Miles of New 115 kV Line

A new 115 kV line using 795 ACSR conductor will be constructed from the Weed Junction substation going due west, crossing mostly pastureland, until it intersects the existing Line 1 near structure 9/45. The route was chosen because it is the best option in terms of the listed factors:

- Environmental impact
- Visual impact
- Directness of the route
- Cost
- Separation from other transmission lines

A detailed review of the route options for the new line is conducted in Section 3.3 below, and a preferred route has been proposed. The preferred route is displayed on Figure 2-4

Modify Substations

Yreka Substation

At Yreka substation Line 75 presently ends at a motor operated switch. The motor operator will be removed or disabled and will become a breaker bypass switch. A new breaker will be installed and a new relaying and control panel will be installed in the control house for the new breaker. All work will occur and all new equipment will be installed within the existing substation fence.

Lucerne Substation

Lucerne Substation is the only distribution substation requiring conversion to 115 kV for this project. The wood frame will be replaced with steel. Proposed in this project is the construction of a standard steel single circuit substation within the existing substation fence, and removal of the existing wood structure and equipment. The proposed substation capacity of 6.25 MVA will amply provide for the 3 MVA of load, which is not growing. Refer to Chapter 15 Visual Resources for a typical picture and description of the new structure.

Weed Junction Substation

At Weed Junction Substation, the 115 kV bus carrying the Line 14 flow and the 115 kV transformer bus will be split, and the transformer bus served via the new line. A new 115 kV breaker line position will need to be constructed at the north end of the 115 kV transformer bus, replacing an existing wood pole dead end structure. Switch 2G10 is a brown glass cap and pin switch and will require replacement with a new switch. In order to be able to split the 115 kV buses under load, the new switch will have loop opening and line dropping capabilities. Sensor and relaying changes will be required to accommodate the new equipment. All new equipment will be installed within the existing substation fence.

2.4 Construction

This section describes construction methods to be used along the line route and at Yreka, Lucerne, and Weed Junction substations.

2.4.1 Transmission Line Specifications

Structures

The proposed structures for the 115 kV transmission line will be single circuit wood poles. The 115 kV poles will be between 65 and 75 feet tall and spaced between 200 to 250 feet apart where distribution is present, and between 400 to 600 feet apart where there is no distribution underbuild. The proposed structure designs are illustrated in Figure 2-3. The 115kV poles will be direct embedded to a depth of 8 to 10 feet depending on load and soil characteristics. No foundations will be required. Pole diameters will be approximately 18 inches.

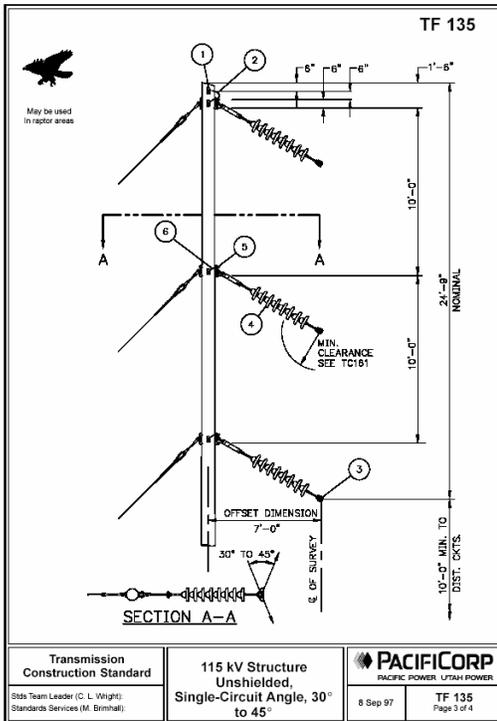
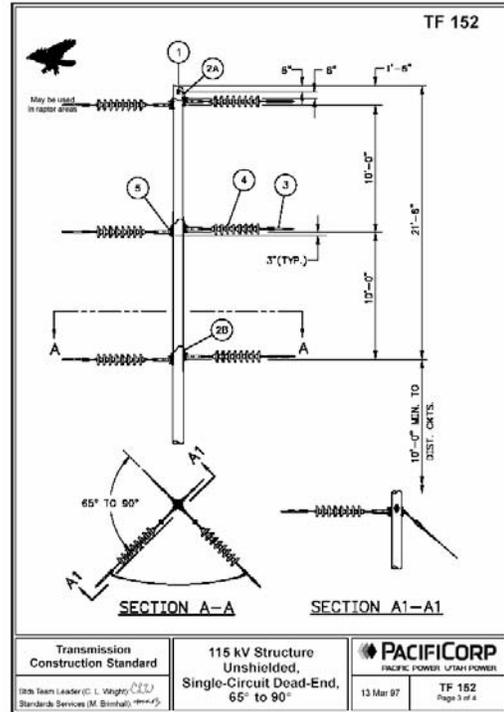
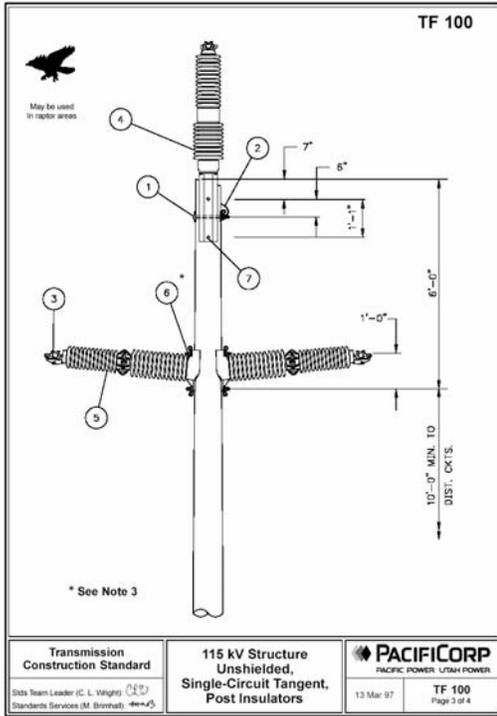
Conductors and Associated Hardware

The 115 kV transmission line will consist of three phases with one conductor per phase. Each conductor will be aluminum stranded with a steel stranded reinforced core. Minimum conductor height above the ground for the 115 kV transmission line will be 21 feet at 212 degrees F.

Right-of-Way Acquisition

PacifiCorp design standards require a right-of-way that is 50 feet wide for a 115 kV transmission line. The existing right-of-way for the 69 kV transmission line is 50 feet wide, and therefore additional right-of-way is not required for the upgrade to 115 kV. The new 115 kV line into Weed Junction will require new easements for the construction of this portion of the project. Perpetual easements will be obtained from private landowners through negotiations with the present owners for this approximately 1.6 miles of new line.

Figure 2-3. Proposed 115 kV structure.



2.4.2 Transmission Line Construction Requirements and Activities

Sequence of Activities

PacifiCorp will not initiate construction of the project until after issuance of the Permit to Construct from the CPUC. PacifiCorp will conduct all activities associated with the construction and operation of the line within the authorized limits of the right-of-way and in strict conformity with measures identified to reduce potential impacts of the project.

The construction of the proposed Project will follow the sequence of: 1) centerline surveyed and staked (1.6 miles of new line only); 2) access roads constructed only where necessary; 3) work areas cleared as needed; 4) materials distributed along centerline; 5) pole holes dug and poles framed and erected; 6) ground wire and conductors installed, and 7) construction sites will be cleaned-up, stabilized and/or reclaimed. The number of workers and types of equipment required to construct the proposed Project are shown in Table 2-1. Various phases of construction may occur at different locations throughout the construction process. This may require several crews operating at the same time at different locations.

Preliminary Design and Surveying

Construction survey work for the Proposed Project will consist of determining centerline location, specific pole locations, right-of-way boundaries, work area boundaries, and in some areas, access roads to work areas. Preliminary pole, access road, and set-up site locations have been identified in the preliminary design plans.

Access Roads

The proposed project will use existing roads and trails wherever feasible to minimize the construction of new access roads. Overland access to the right-of-way will also be utilized where feasible to minimize the construction of new roads. Upgrade of the 69 kV line will utilize existing access roads used for maintenance and patrol of the existing line. Only in a few limited areas will new access roads be necessary for construction of the upgrade to 115 kV and for the new 1.6 miles of 115 kV into Weed Junction. It is estimated that 2.5 miles of new access roads will be required for the project. These areas are identified on Figure 2-4.

Where practicable, access ways off the highways and roads were selected to utilize existing access to the ROW. In areas where no existing access was present, new access areas were selected to minimize disturbance. Prior to construction, the California Department of Transportation (Caltrans) will be contacted to identify any requirements and restrictions for highway access.

Where no existing roads exist, a permanent disturbance of 12 feet in width will occur in accessible, relatively flat areas. The new routes will not be bladed, disturbed, or otherwise modified other than the compaction of vegetation caused by equipment and vehicle travel. Where sidehill slopes are significant, access roads 12 feet wide will be bladed relatively flat. Areas that are covered with rock that cannot be driven around will require rock blading to establish a level trail for maintenance of the structures. Blading will be done only to the extent required and necessary to access the transmission structures with construction vehicles and equipment. Exact locations that will require blading have not currently been identified. This will be determined during final design and construction of the Project. However, for purposes of the impact assessment, it was estimated that the proposed 2.5 miles of new access roads, at 12 feet wide, would be disturbed, but would be restored and reseeded following construction.

Table 2-1. Transmission Line Construction – Estimated Personnel and Equipment.

Activity	People	Quantity of Equipment	
Survey	3	1	pickup truck
Access Road Construction	2 to 3	1	bulldozer (D-8 Cat)
		1	motor grader
		1	pickup truck
		1	water truck (for construction)
Auger Holes, Direct Embed Poles	5	1	hole digger
		1	water truck
		1	pickup truck
		1	line truck
Material Haul	3	1	tractor/trailer
		2	yard and field cranes or line trucks
		1	fork lift
Structure Assembly, Per Crew 2 Crews Required	4	1	pickup truck
		1	truck (2 ton)
Structure Erection Per crew 2 Crews Required	4	1	truck (2 ton)
		1	pickup truck
		1	bucket truck
		1	line truck
Wire Installation	8	1	wire reel trailer
		1	diesel tractor
		1	crane
		1	line truck
		3	pickup trucks
		2	bucket trucks
		2	3-drum pullers
		1	single drum puller (large)
		1	double bull-wheel tensioner (heavy)
1	static wire reel trailer OPGW		
Right-of-Way Restoration and Cleanup	4	1	truck
		1	motor grader
		1	pickup truck
		1	water truck

Maximum total personnel required considering all tasks is 33 to 34 persons (actual personnel at any one time will be less)

(INSERT)

Figure 2-4. Project Map

Work Areas and Set-Sites

Work areas will be required at each pole site to facilitate the safe operation of equipment and construction operations. The size of the work area is driven by the need to lay down the poles and install the necessary hardware and frame them to full length (65 to 75 feet). Within these work areas, the permanent disturbance associated with each pole will be 18 inches in diameter or 1.77 square feet. The work area outside of the permanent disturbance will be cleared of vegetation only to the extent necessary to allow for equipment to maneuver.

Temporary disturbance for tangent structure work areas will be 5000 square feet (100 feet x 50 feet). Temporary disturbance for angle/dead end structure work areas will be 5400 square feet (100 feet x 50 feet plus 20 feet x 20 feet for guy wires).

Grading will occur where the topography is too steep or uneven to allow safe operation of equipment. After line construction, all work areas will be restored.

Side hill construction will occur in areas that will require a leveled trail be established to access the structure location as well as a pad or leveled area to be established to allow for equipment set-up for installation of the poles. Typically, the blading for the trail will not exceed 12 feet, depending on the hill slope. The blading for the building pad will be done along the same area as the access road to reduce the overall amount of blading required for crane set-up, and will not typically exceed 30 by 40 feet at the structure.

Set-up sites for in-line pulling and tensioning were selected along the route every 11,750 feet or less. This is the length of the longest reel of conductor that will be utilized by the project. Pulling and tensioning sites for stringing the conductor will result in a temporary disturbance of 50 by 250 feet with an estimated 18 sites required for the entire transmission line (the rebuild and new line construction). For mid-span setups, work areas are located within the 50-foot right-of-way and up to 250 feet in length. Setup sites for corners and heavy angles are the width of the right-of-way and up to 250 feet in length on both sides to allow for equipment to be set up in line with the pulling of the conductor. Additional set up sites will be selected by the contractor. Where feasible, all areas were selected to allow access of equipment from roads and trails without requiring them to travel long distances on the right-of-way, and located to be in more level areas so that blading will not be required. Pulling and tensioning sites are identified on Figure 2-4.

Turn-around areas will be required in certain areas along the right-of-way where construction travel will be restricted by rock outcrops, washes, ravines, canals, or sensitive habitat areas. The turn-around areas will be located at the last structure that can access an area as well as the first structure on the other side of the restricted access area.

Construction Yards/Staging Areas

One construction yard/staging area, roughly 2 acres in size, will be required for materials and equipment storage and staging for construction activities. The proposed location for the staging area will be located adjacent to the Weed Junction Substation. This area will be located on existing disturbed areas adjacent to the substation. The yard will serve as a field office, reporting location for workers, parking space for vehicles and equipment, and a site for temporary marshalling of construction materials.

Augering of Pole Holes

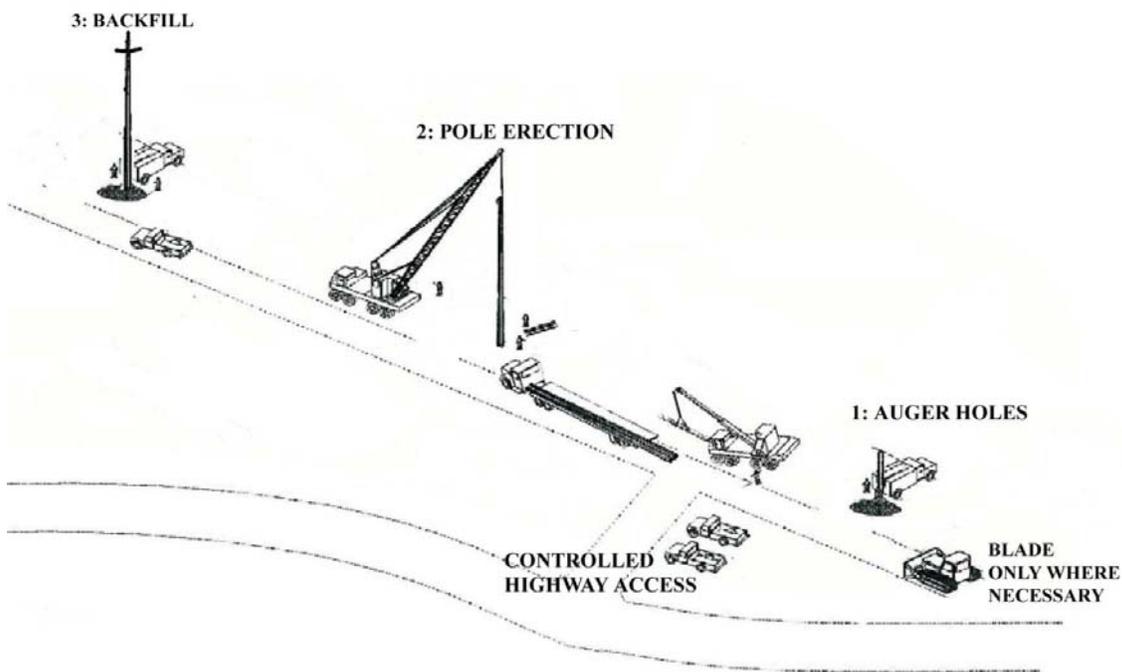
Excavations for installation of the poles will be made with power auger equipment. Where the soil permits, a vehicle-mounted power auger will be used. Excavation and installation requires equipment access to the pole sites. Excavation and pole installation requires access to each pole location by a power auger or drill, a crane, and material trucks.

Pole holes left open will be covered and/or fenced where practical to protect the public, livestock, and wildlife. Soil removed from holes will be stockpiled on the work area and used to backfill holes. All remaining soil not needed for backfilling will be spread on the work area.

Pole and Insulator Assembly

The wood poles and associated hardware will be delivered to each pole site by truck. Areas need to be large enough to accommodate laying down a pole while insulators are mounted to it. Typically, insulator strings and stringing sheaves are then installed at each ground wire and conductor position while the pole is on the ground. Stringing sheaves are used to guide the conductor during the stringing process for attachment onto the insulator strings. The assembled pole will then be hoisted into place by a crane or line truck. (See Figure 2-5 Typical Construction Sequence)

Figure 2-5 Typical Construction Sequence.



Conductor Installation

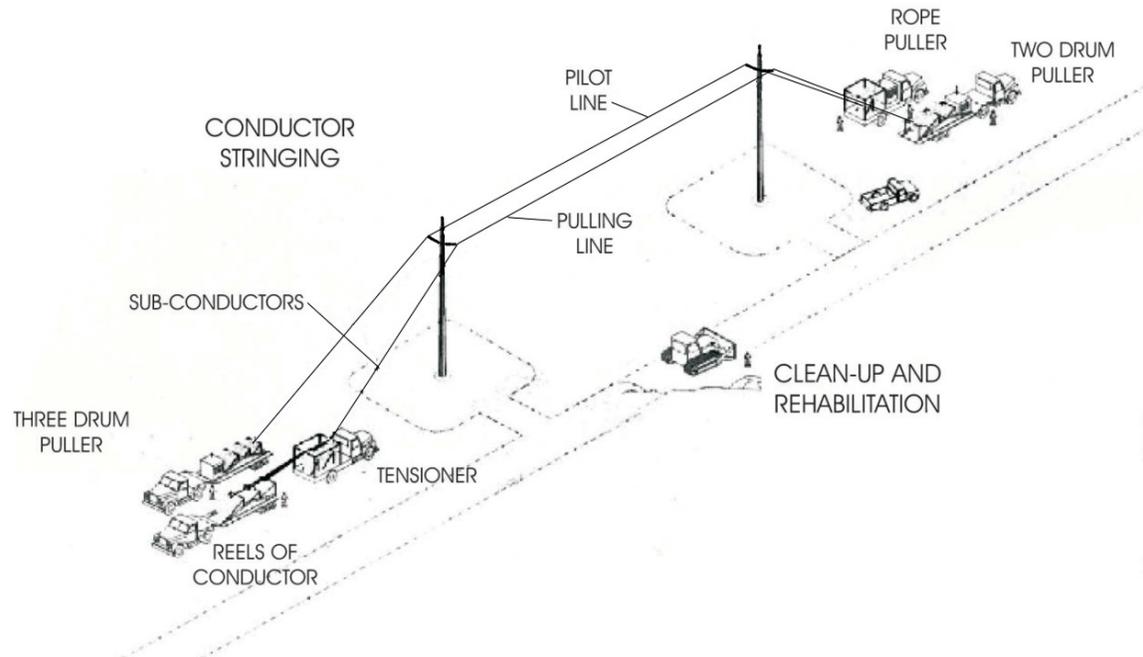
Once poles are in place, a pilot line will be pulled (strung) from pole to pole and threaded through the stringing sheaves on each pole. A larger diameter, stronger line will then be attached to the pilot line and strung. This is called the pulling line. This process is repeated until the ground wire and conductor is pulled through all sheaves. (See Figure 2-6, Typical Conductor Stringing Activities)

Conductor splicing will be required at the end of a conductor spool or if a conductor is damaged during stringing. The work will occur on work areas for the poles or pulling/tensioning sites.

The conductor will be strung using powered pulling equipment at one end and powered braking or tensioning equipment at the other end. For public protection during wire installation, guard structures may be erected over roadways, other existing power-lines, structures, and other obstacles. Guard structures will consist of H-frame poles placed on either side of an obstacle. These structures prevent ground wire, conductor, or equipment from falling on an obstacle.

Equipment for erecting guard structures includes augers, line trucks, pole trailers, and cranes. Guard structures may not be required for small roads. On such occasions, other safety measures such as barriers, flagmen, or other traffic control will be used.

Figure 2-6 Typical Conductor Stringing Activities.



Erosion and Sediment Control and Pollution Prevention During Construction

Erosion and sediment controls may be necessary to prevent soil erosion in construction areas located on hillsides where a leveled trail to access a structure location or a leveled area is required to allow equipment set-up for pole installation. An erosion and sediment control plan will be developed prior to construction. The goal of the erosion and sediment control plan will be to remove sediment and wastes from runoff before the runoff is discharged from the project site. This will be accomplished by:

- Minimizing the acreage of disturbed and exposed soil during the construction phase and implementing stabilization measures where necessary.
- Removing sediment from runoff before it leaves the site.
- Complying with specific erosion and sediment control measures specified within the erosion and sediment control plan.

Applying and maintaining standard erosion and sedimentation control methods will minimize erosion and water quality impacts. These may include straw wattles, straw bail barriers and silt fencing which will be placed at construction boundaries. Gravel ramps may be installed at access points to public roadways to prevent or minimize the tracking of mud, dirt, sediment, or similar materials onto the roadway.

Erosion control structures such as waterbars, diversion channels, terraces and slope roughening may be constructed, if necessary, to divert water and reduce soil erosion along the right-of-way, or other areas disturbed by construction where slopes exceed 30%. Selection of appropriate erosion control materials will be based on soil properties, steepness of the slope, and anticipated surface flow or runoff.

Existing vegetation will be preserved to the maximum extent practicable during all phases of construction. Vegetation clearing will be kept to a minimum and occur only where construction plans call for it. .

All disturbed areas will be re-seeded using a native seed mix and best management practices for erosion control. On slopes greater than 30% additional measures such as organic fiber mulching, geo-textile fabrics, and sod mats will be used.

Diesel fuel, gasoline, oil and other lubricants as well as adhesives and sealants will be utilized during the construction of the transmission line and substation. Bulk quantities will be stored in designated construction yards/staging areas. Vehicle fueling and maintenance activities will be restricted to staging areas or approved areas away from drainage channels and sensitive habitats. All construction vehicles will be monitored for leaks and receive regular off-site preventive maintenance to reduce the chance of leakage.

Construction Waste Disposal

Construction sites, material storage yards, and access roads will be kept in an orderly condition throughout the construction period. Refuse and trash will be removed from the sites and disposed in an approved manner. Oils and fuels will not be dumped along the line. Oils or chemicals will be hauled to an approved site for disposal. No open burning of construction trash will occur.

All forms of refuse and waste produced along the right-of-way during construction will be collected and disposed of in a designated landfill or appropriate waste disposal site. Refuse and waste is defined as any discarded material, trash, garbage, packing material, containers, waste petroleum products, broken equipment, used parts, excess construction materials.

Site Reclamation

Disturbed areas within the right-of-way will be graded and reseeded as required by the property owner. The natural drainage pattern along the right-of-way will be restored as near as possible to the original pattern. The reclamation will involve the personnel and equipment as shown in Table 2-1.

Work sites will be restored using excess materials, vegetation, and topsoil stockpiled for that purpose. The contractor will dispose of excess soil materials, rock, and other objectionable materials that cannot be used in restoration work.

Disturbed areas, with the exception of access roads, will be restored, as nearly as possible, to their original contour and reseeded where appropriate. Ripping and other surface scarification on construction roads or other areas will be done as necessary. In some cases the amount of soil compaction and vegetation destruction may not warrant ripping and reclamation. This will be decided on a case-by-case basis.

Fire Protection

There will be strict adherence to all federal, state, and county laws, ordinances, rules, and regulations pertaining to fire prevention and suppression.

2.4.3 Operation of Transmission Line

Permitted Uses

After the transmission line has been energized, land uses that are compatible with safety regulations and operation and maintenance activities will be permitted in and adjacent to the right-of-way. In previous projects existing land uses such as agriculture and grazing generally have been permitted within the right-of-way. Incompatible land uses within transmission line right-of-ways include construction and maintenance of inhabited dwellings, and any use requiring changes in surface elevation that will affect existing or planned facilities.

Land uses that comply with local regulations will be permitted adjacent to the right-of-way. The right-of-way through private lands may be used for roads, agriculture and other purposes consistent with the easements.

Safety

Safety is a primary concern in the design of this 115 kV transmission system. The transmission line will be protected with power circuit breakers and related line relay protection equipment. If conductor failure were to occur, power will be automatically removed from the line. All fences, metal gates, pipelines, etc that cross or are within the transmission line right-of-way will be grounded to prevent electrical shock. Electrical equipment and fencing at the substations will be grounded.

2.4.4 Maintenance of the Transmission Line

The 115 kV transmission line will be inspected on a regular basis by ground patrols. Maintenance will be performed as needed. When access will be required for non-emergency maintenance and repairs, the maintenance crews will adhere to the same precautions that will have been taken during the original construction.

Emergency maintenance will involve prompt movement of repair crews to repair or replace any damage. Crews will be instructed to protect crops, plants, wildlife, and other environmental resources. Restoration procedures following completion of repair work will be similar to those prescribed for normal construction.

2.4.5 Abandonment of the Transmission Line

At the end of the useful life of the Proposed Project, if the facility were no longer required, the transmission line will be abandoned under the terms of the other easement agreements. Subsequently, poles, conductors, insulators and hardware will be dismantled and removed from the right-of-way.

2.5 Permit Requirements

The CPUC is the lead agency for the Yreka / Weed Transmission Upgrade Project under the CEQA. In accordance with CPUC General Order 131-D, PacifiCorp is submitting this PEA as part of its application for a Permit to Construct. As needed, PacifiCorp will also obtain permits, approvals, and licenses from, and will participate in reviews and consultations with, federal, state, and local agencies as shown in Table 2-2.

Table 2-2. Project-related Permits and Authorizations.

Agency	Permit / Approval	Jurisdiction / Action Requiring Permit or Approval
FEDERAL AGENCIES		
U.S. Army Corps of Engineers	Nationwide Permit, Section 404 of Clean Water Act	Fill in a wetland, water of the U.S.
U.S. Fish and Wildlife Service	Endangered Species Act Consultation	Consultation on federally-listed species
Federal Aviation Administration	Notice of Proposed Construction or Alteration	Tower location and height in relation to air traffic
STATE AGENCIES		
California Public Utilities Commission	Permit to Construct	Project approval and CEQA review
California Department of Fish and Game	Endangered species consultation	Consultation on state-listed species
	Section 1600 Streambed Alteration	Alteration or construction in a streambed or drainage channel
State Historic Preservation Officer (SHPO)	National Historic Preservation Act compliance	
State Water Resources Control Board	NPDES General Permit for Storm water	Construction impacting 1 or more acres
California Department of Transportation	Encroachment Permit	Crossing of Interstate 5
LOCAL AGENCIES		
Siskiyou County	Encroachment Permit	Crossing of county roads

CHAPTER 3 ALTERNATIVES TO THE PROPOSED PROJECT

3.1 Introduction

In accordance with Section IX of General Order 131-D and the Commission Information and Criteria List, PacifiCorp evaluated several alternatives in addition to the proposed Project described in Chapter 2. A description of these project alternatives, as well as an evaluation of the four routing options considered for the new 115 kV component of the Project are described within this chapter.

3.2 Project Alternatives Considered

The following options were considered for this project:

3.2.1 Rebuild Line 14 Alternative

The first alternative to the proposed Project would involve the rebuilding of Line 14 with 1272 ACSR conductor for 37 miles between Copco 2 and Weed Junction Substations. The new conductor would increase the transmission capacity of Line 14 from 117 MVA to 201 MVA during summer and from 153 MVA to 305 MVA during winter. The estimated cost of this alternative is \$12.7 million in comparison to the estimated cost of \$8 million for the proposed Project. The rebuild of Line 14 would involve replacing all H-frame structures between the two substations. This would require taking the line out of service for several months, which cannot be done without an alternate feed for the distribution load within the area. The only alternate feed for this option would be the project proposed in this PEA. As a result, this alternative is not reasonable because implementing it would require either (a) that electrical service be cut for several months to 1400 customers, or (b) the proposed Project is constructed first. These are the principal reasons why PacifiCorp has rejected this alternative. An additional reason is because this alternative does not address reliability concerns (N-1 problem). If Line 14 failed between the Hart Switching Station and the Weed Junction Station, the combined load at the Crag View and Weed Junction Substation could not be served from the south without overloading the line. Thus, this alternative is not a reasonable alternative to the proposed action.

3.2.2 Upgrade Line 2 Alternative

A second alternative to the proposed Project would upgrade Line 2 from 69 kV to 115 kV for 37 miles between Copco 2 and Weed Junction Substations. This would require replacing all of the existing poles with larger poles and increasing the wire size. Also required would be the construction of a new 115 kV breaker position at Copco 2 Substation, the rebuild of Big Springs Substation and a 1.9 mile transmission tap, conversion of Shastina Substation to 115 kV, and construction of a 115 kV breaker position at Weed Junction Substation. This alternative is the most expensive at an estimated cost of \$16 million in comparison to the proposed Project which would cost approximately \$8 million.

This alternative would result in both feeds to Weed Junction Substation being in the same corridor. The primary disadvantage of this alternative is that it would present a single event exposure risk, such as a brush fire, which could take both lines out of service simultaneously. However, this alternative would increase the transmission capacity to acceptable levels and eliminate the N-1 problem. Nevertheless, this alternative would still have a higher risk than the proposed Project. Therefore, PacifiCorp has rejected this alternative because it presents unacceptable reliability risks at a high cost.

3.2.3 No Project Alternative

The No Project Alternative would not be an acceptable option to the proposed Project because it fails to meet the Project Objectives. Increasing loads have led to line overloads during both the summer and winter peaks, causing violations of WECC reliability criteria. With a potential failure of Line 14, other transmission lines serving the area would not provide the adequate transmission capacity to serve the load. Therefore, the No Project Alternative is not recommended.

3.3 New Line Options Considered

The proposed Project involves upgrading Line 1 from 69 kV to 115 kV, between a tap point on the existing Line 75 and the Weed Junction Substation (see Figures 2-1 and 2-2). However, in order to maintain 69 kV service to customers served by the Weed and International Paper Substations, it is necessary to complete the 115 kV circuit to Weed Junction Substation with a proposed new 115 kV path and thereby avoiding additional upgrades to the Weed and International Paper Substations at a cost of four million dollars. This new 115 kV path between the existing Line 1 corridor and Weed Junction Substation will begin at structure 8/45, located approximately 2 miles north of the City of Weed.

Several options were considered for the new 1.6 miles of 115 kV line from the tap point (structure 9/45) along the existing Line 1, to the Weed Junction Substation. The four options are shown on Figure 3-1, and are described below. Table 3-1 includes additional comparison of each option. Note that this new line is only required for the recommended Project alternative, rebuilding of Line 1.

3.3.1 Description of Options

Option 1

Option 1 would expand the existing 50 feet right-of-way to 100 feet for approximately 1.6 miles to accommodate a new 115 kV transmission line. The new line would parallel the existing 69 kV transmission line from Weed Substation and Weed Junction Substation on the north side, and running from pole 19/45 to the Weed Junction Substation. This option would place the new 115 kV line within 500 feet of four residences. In addition, this option would require significant removal of trees to expand the right-of-way an additional 50 feet. One local resident has said that these trees are “one of the last forested areas of Weed.” This option would also place the new 115 kV line parallel to and visible from Highway 97, a National Scenic Byway/All-American Road and eligible state scenic highway, for approximately 1 mile. It would cost approximately \$800,000 to construct the new 1.6 miles of line for this option.

Option 2

Option 2 would place the new 115 kV line through open pastures north of the existing 69 kV line. The route would then utilize an existing unpaved road for about 1/3 of the route, heading southeast into the Weed Junction Substation. There is an existing distribution line that currently parallels this unpaved road. Existing outbuildings and a residence are also located adjacent to the unpaved road, and would be located within the 115 kV right-of-way and could potentially be located directly beneath the new 115 kV line. This option would reduce the amount of clearing required for a new right-of-way in comparison to Option 1, and would be less visible from Highway 97 when compared to Options 1 and 4.

This option, like Option 3 below, would cross three property owners. However, there are a total of two residences within 500 feet of this option, one which would be located within the right-of-way as described above. One rancher who owns the property traversed by this option would prefer Option 3 below because Option 2 would cross through the center of his pastureland. It would cost approximately \$750,000 to construct the new 1.6 miles of line for this option.

Option 3 (Proposed Project)

Starting at the tap point and moving towards Weed Junction Substation, Option 3 is the same as Option 2 for the first 1/3 of the route along the unpaved road. Beginning from Hoy Road, the proposed route deviates from Option 2 by running east toward Weed Junction Substation, south of Option 2 through open pasture for a distance of approximately 1100 feet. This section of new line would run adjacent to the trees north of the existing 69 kV line. This option has the advantage of crossing the property of only three owners and would be located near the least number of residences in comparison to the other three options. There is only one residence within 500 feet of this option. This option would reduce the amount of clearing required for a new right-of-way in comparison to Option 1, and would be less visible from Highway 97 when compared to Options 1 and 4. It would cost approximately \$750,000 to construct the new 1.6 miles of line for this option.

Option 4

Option 4 would involve installing new double circuit structures to combine the new 115 kV line with the existing 69kV line between the Weed and Weed Junction Substations. This section of Line 1 supplies the Weed and International Paper Substations. This portion of the line cannot be taken out of service for more than a few hours at a time and only on select days, primarily weekends, because the increase in load in the area has resulted in an inability to supply the excess load over the section of Line 1 fed from Yreka Substation.

Construction of a double circuit line would result in numerous extended outages to retail customers in the Weed area. Maintenance of the double circuit line would require that both lines be de-energized, which would cause additional interruptions.

This option also provides a reliability risk by having two circuits on the same structure. If one structure was damaged in an accident, both circuits would be lost. Also, if it was necessary to remove one line from service for maintenance, both lines would need to be taken out of service.

This option would result in a widened right-of-way with larger structures parallel to and visible from Highway 97, a National Scenic Byway and All-American Road for approximately 1 mile. There are four residences within 500 feet of this option. The estimated cost of Option 4 is the highest of the four options at \$1.1 million.

3.3.2 Landowner Meeting

A landowner meeting was held on October 21, 2005 in Weed, California. The meeting was planned and held for those owners of land that would potentially be crossed by the proposed Option 3 as described above. However, a larger set of landowners (fourteen) were present at the meeting. A list of those in attendance is included as Appendix B.

Concerns and comments received during the landowner meeting are listed below. The locations within the PEA where these concerns and comments have been addressed are indicated as well.

- Potential impacts to springs located east of Hoy Road, and biological and cultural resources

Potential springs or wetlands, biological resources, and cultural resources are addressed in Chapters 6 and 7 of this PEA.

- Concern regarding visual impacts from the new line to residences

Visual impacts, including those to residences, are addressed in Chapter 15 of this PEA.

- Potential property values impacts

This PEA has addressed impacts to land uses within the Project area (Chapter 11), but has not specifically addressed impacts to property values.

3.3.3 Summary of Options

The preferred option for routing of the new 115 kV transmission line from the existing Line 1 location into the Weed Junction Substation is Option 3. Option 3 was selected after evaluating the feasibility and the environmental effects of each option. Option 3 is being proposed because it:

- Has the fewest residences within 500 feet of the line minimizing visual impacts to residences;
- Will require less tree removal than other options for new right-of-way;
- Minimizes visibility from Highway 97;
- Provides better reliability than other options because it maximizes separation of electrical circuits;
- Minimizes impacts to farmable land; and
- Is the lowest cost option.

	Residences within 500 Feet	Pasture crossed (miles)	Utilizes existing ROW	Parallels existing ROW (miles)	Tree clearing (miles)	Cost	Comments
Option 1 Expand ROW and parallel existing 69kV	4	0.2	no	1.6	1.3	\$800k	<ul style="list-style-type: none"> • Close to existing residences. • ROW Tree clearing. • ROW tree clearing and line parallel & visible from Highway 97. • Reliability concerns for entire route; limited separation.
Option 2 New ROW along unpaved road	2	0.8	no	0.1	0.1	\$750k	<ul style="list-style-type: none"> • Spans existing outbuildings and residence. • Limited tree clearing. • Visible from a few residences. • Combines distribution along unpaved road.
Option 3 New ROW south of unpaved road	1	1.2	no	0.3	0.1	\$750k	<ul style="list-style-type: none"> • Least impact on existing residences. • Limited tree clearing. • Visible from a few residences. • Parallels existing line for only 0.3 miles.
Option 4 Double circuit w/ existing 69kV	4	0.2	yes	-	maint.	\$1.1m	<ul style="list-style-type: none"> • No expansion of ROW necessary. • Maintenance tree clearing within ROW. • Double circuit structures parallel & visible from Highway 97. • Reliability concerns for entire route.

Table 3-1. New 115 kV Routing Options Comparison.

(INSERT)

Figure 3-1. New 115 kV Transmission Options.

CHAPTER 4 IMPACT ASSESSMENT SUMMARY

4.1 CEQA Appendix G: Environmental Checklist Form

1. Project Title

Yreka / Weed Transmission Upgrade Project

2. Lead agency name and address

California Public Utilities Commission

505 Van Ness Avenue

San Francisco, California 94102-3298

3. Contact Person and phone number

John Boccio, (415) 703-2641

4. Project location

Siskiyou County, California

5. Project sponsor's name and address

PacifiCorp

700 NE Multnomah Street, Suite 550

Portland, Oregon 97232

6. General Plan designation

The proposed Project will occur within the general plan area of Siskiyou County. Siskiyou County does not have a general plan land use map that show the boundaries of specific planned land use categories.

7. Zoning

The majority of the proposed Project will be within an existing utility corridor and will be located within PacifiCorp fee-owned rights-of-way or easements. The proposed route for the new line would cross 0.1 mile of land zoned as Prime Agricultural District (AG-1) and 1.5 miles of land zoned as Non-Prime Agricultural District (AG-2-B-40).

8. Description of Project

The Project will add a second 115 kV transmission path allowing some of the local load to be removed from Line 14. This will be done by upgrading approximately 17 miles an existing 69 kV transmission line to 115 kV, building 1.6 miles of new 115 kV line, and modifying three substations.

9. Surrounding land uses and setting

The Project area primarily includes rolling hills consisting of open space and pastures, with some forested lands, and rural residential.

10. Other public agencies whose approval is required

A list of required permits / authorizations and the approving agency is provided in Chapter 2.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

Aesthetics	Agriculture Resources	Air Quality
Biological Resources	Cultural Resources	Geology /Soils
Hazards & Hazardous Materials	Hydrology / Water Quality	Land Use / Planning
Mineral Resources	Noise	Population / Housing
Public Services	Recreation	Transportation/Traffic
Utilities / Service Systems	Mandatory Findings of Significance	

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE

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

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

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

Signature

Date

Signature

Date

4.2 Environmental Issues

4.2.1 Aesthetics

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>a) A majority of the Project will involve the replacement of wooden poles already present along 17 miles of right-of-way. The replacement poles will be slightly taller than the current ones (9 feet); the new conductors will be located along the same centerline as the existing line. The new 1.6 mile line will be located approximately 300 feet from the Volcanic Legacy National Scenic Byway (Hwy 97) at the nearest point, and will be seen from that road for less than 0.2 mile. The existing scenic quality is moderately high. Views from State Highway 97 are short in duration, visual contrast will be moderate, and sensitivity is moderate, and therefore unlikely to constitute a substantial visual change from any scenic vista. The Federal Highway Administration, who administers the National Scenic Byway program, was contacted about the Project, and had no comments, questions, or concerns about the visual impact of the Project.</p> <p>The Lucerne Substation will be upgraded from 69 kV to a 115 kV substation. The construction will include replacing the wood structure with a metal structure within the existing fence line. The overall contrasts will be low in a moderately low scenic quality landscape. Views from nearby high sensitivity residences will be long in duration, and are in foreground viewing condition; however, contrasts will be low and will therefore not have a substantial adverse effect on the scenic vista.</p>				
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>b) The Volcanic Legacy National Scenic Byway is not an officially designated State Scenic Highway, but is eligible. Scenic resources such as trees and rock outcroppings will not be substantially damaged because existing poles will be replaced where already existing, and the construction of new structures and access roads will occur in open fields away from scenic resources such as trees and rocky areas and will not be visible from the Volcanic Legacy National Scenic Byway for the majority of the route.</p>				

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>c) The Project area is in a valley surrounded by abrupt, hilly and mountainous topography. Vegetation in the Project area includes open grassland, coniferous forest, and shrubland. Annual grassland dominates most of the Project area. Mixed, open, juniper dominated forests with sagebrush understory are often limited to the steeper hillside slopes at the southern end of the Project. In open pasture and grassland areas, views to Mt. Shasta and surrounding mountains often provide a backdrop of adjacent scenery. Uncultivated hillsides are typically covered with various sized volcanic rocks and small boulders. The area is typically rural in character, with open pastures and scattered ranches and residences. However, there are two concentrated developed areas: The Village of Greda and a subdivision development on the north side of the City of Weed. In the existing utility corridor, the project will replace existing structures with 9 feet taller structures, on average, of a similar design. This change will have low visual impact because the structural contrast between the old and new poles is low. Similarly, upgrades to Lucerne Substation will have low visual impact and is unlikely to degrade the existing visual character or quality of the area. Only a small portion of the new 1.6 mile 115 kV line is visible in the foreground view from Hwy 97. Overall visual contrast of the new structures will be moderate to low in a moderate quality landscape. Therefore the Project will not constitute a significant visual change and thus will not substantially degrade the existing visual character and quality of the project area.</p>				
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>d) There will be no additional light sources as a result of the Project, and therefore no impacts related to light and glare in the area.</p>				

4.2.2 Agricultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
a) Only about 0.22 acres of “farmland of statewide importance” will be converted for the Project as a result of footprints of poles (wood poles directly embedded in soil) and short segments of permanent access roads leading up to the poles. As there are large amounts of farmland in the Project area and larger region that are protected by strong local government land use policies, the small amount of farmland that will be used for the Project will be negligible by comparison and thus less than significant. Farm operators/land owners will be compensated for the value of agricultural crops / land used for the Project.				
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) A number of parcels within the Project area are currently under Williamson Act contract. The placement of transmission poles on land currently under Williamson Act contract will not remove the land from Williamson Act contract status. Pursuant to Government Code Section 51238, placement of electric facilities on Williamson Act land is a compatible use. The Project will not conflict with existing zoning for agricultural use or with any Williamson Act contract, and thus, impacts will be less than significant.				
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Construction and pole locations have been designed to avoid farmland to the extent possible, and the majority of such areas will be restored following Project construction. A minimal amount, 4.49 acres, of additional “other” farmland (i.e., local farmland not designated as prime, unique or of statewide importance) will be converted for the Project as a result of footprints of poles (wood poles directly embedded in soil) and short segments of permanent access roads leading up to the poles. Property owners or farm owners will be provided with monetary compensation. Thus, impacts will be less than significant.]				

4.2.3 Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
a) Construction and operation of the Project will not conflict with or obstruct implementation of any applicable air quality plan. Thus, there would be no impact				
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) The SCAPCD is either in attainment or unclassified for all state and national air quality standards. Areas that cannot be classified or are better than the national standards are given an unclassified status. Thus, the Project will not contribute to an existing air quality violation. Project operation will cause negligible emissions of either state or national air pollutants associated with less than 100 vehicle-miles per month due to annual inspections and quarterly maintenance. Project construction will include temporary use of heavy equipment and motor vehicles, resulting in an increase in reactive organic gases (ROG), carbon monoxide (CO), nitrogen oxides (NO _x), sulfur oxides (SO _x), and particulate matter (PM ₁₀). However, emissions of such pollutants from vehicles will be temporary and are not projected to violate any air quality standards. Dust from construction activities can also cause PM10 emissions, though such emissions are not expected to violate any air quality standards. Nevertheless, PacifiCorp will follow dust control measures recommended by the SCAPCD, as outlined in Chapter 5.				
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) The SCAPCD is in attainment of all applicable federal and state ambient air quality standards, and Project impacts will not cause violations of any air quality standards. Thus,				

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<p>d) The Project will not expose sensitive receptors (e.g., children, the elderly, and the infirm) to substantial pollution concentrations. The only source of sensitive receptors is a school in Grenada, approximately 1/4 mile away. Construction activities will generate insignificant emissions of criteria pollutants and will not produce dust emissions that could reach these receptors with dust control measures recommended by the SCAPCD. Thus, the Project will result in less than significant impacts with mitigation.</p>			
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<p>There will be no odors from operation of the transmission line and substation. Temporary construction may cause minor objectionable odors from diesel construction equipment. These odors will be dispersed within a short distance of construction sites, and all impacts would be less than significant.</p>			

4.2.4 Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<p>a) Project construction of Lucerne substation will take place within the fence line of the existing substation and so will not impact any biological resources.</p> <p>Rebuilding Line 1 and construction of the new line has the potential to impact several rare, threatened or endangered species of plants and animals, as described in detail in Chapter 6. Avoidance measures as described in Chapter 6, and additional measures developed as appropriate in coordination with resource agencies will reduce these</p>			

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
	potential impacts to less than significance levels.			
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Project related construction activities on Line 1 and the new line could result in impacts to riparian habitat along the Shasta River and a small side channel of the Shasta River. At the point of crossing, the Shasta River riparian zone is approximately 30 feet wide, and contains small willow and alder trees. The side channel riparian zone is approximately 20 feet wide, and supports blackberry, nettles, and wild grape. The new transmission line will span both of these riparian areas, and impacts will be limited only to placement of several transmission poles and overhead conductors that span the zones. No access roads will be constructed within the riparian zones. Mitigation measures will reduce these impacts to a less than significant level.			
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Project construction could result in temporary impacts to potential wetlands along the Project. Prior to any wetland disturbance, all appropriate permits will be obtained in accordance with Section 404 of the Clean Water Act. Mitigation measures would reduce these impacts to less than significant levels.			
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	d) Project construction should not obstruct stream flows and therefore will not impede the movement of migratory fish. The project will not interfere with any native resident or migratory wildlife nursery sites or established corridors.			
e) Conflict with any local policies or ordinances protecting biological	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
resources, such as a tree preservation policy or ordinance?				
e) The Conservation Element of the Siskiyou County General Plan includes general objectives relating to biological resources. These objectives include 1) "to preserve, protect and manage the Forest Lands as both wild habitat and a productive economic resource" and 2) "to preserve and maintain streams, lakes and forest open space as a means of providing natural habitat for species of wildlife". Construction of the new line will involve limited tree clearance in the vicinity of the Weed Junction substation, but will not significantly impact forest land either as wild habitat or as an economic resource. Similarly, construction of the new line will do little to impact preservation and maintenance of the Shasta River and its side channels. Thus, the Project will comply with the County General Plan.				
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) There are no Habitat Conservation Plans or other approved governmental habitat plans that involve lands within the project area. No conflict with habitat conservation plans will result from the proposed Project.				

4.2.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a) A site-specific archival and literature review, as well as a field survey has been completed for this Project. The surveys found no records or observations of historical resource as defined in § 15064.5. The Project could pass through areas of unknown historical resources. Because impacts will be mitigated if unknown historical resources are discovered during construction, impacts will be less than significant with mitigation.				

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>b) A site-specific archival and literature review has been completed for this Project. Two previously recorded archaeological sites are known to be within the Project boundaries; however, they are not located in the immediate line of construction. In addition, a field survey was completed and an unknown resource was located, documented and will be submitted to the Northeast California Historical Resources Information System at the California State University, Chico. Since the resources are well defined, environmental commitments (mitigation measures) to ensure their protection will be implemented to avoid impacts (as described in Chapter 7). Because impacts to the resources will be mitigated the Project will have less than significant impacts with mitigation incorporated.</p>				
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>c) There are no previously recorded or known paleontological resources, sites or unique geologic features in the Project area. However, if areas of paleontological resources, sites or unique geologic features are discovered during Project construction, mitigation measures to avoid and preserve these resources will be implemented to mitigated potential impacts to a less than significant level.</p>				
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>d) The Project will not pass through any formal cemeteries or other places of human burial, including remains of Native Americans.</p> <p>If human remains are exposed, as an unanticipated discovery, during construction, the Siskiyou County Coroner will be notified and treatment procedures will conform to the appropriate state and federal statutes, regulations, and guidance. As possible and relevant, the procedures followed will also include the California Health and Safety Code (Chapter 1492, Section 7050.5), California Public Resources Code sections 5097.94, 5097.98 and 5097.99, Native American Heritage Commission (1994), and CEQA under Public Resources Code 5097.98.</p> <p>Because no known sites are located within the Project area, there are no impacts expected. However, if unknown human remains are discovered during construction, impacts will be</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
<hr/> less than significant with mitigation. <hr/>				

4.2.6 Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	i) There are no Alquist-Priolo special study zones within the Project area. The closest special study zones are located in the eastern part of Siskiyou County and to the southeast in Shasta County (Hart and Bryant, 1997). No known active faults are mapped nearby (Jennings, 1994).			
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	ii) Because the project is located in Seismic Zone 3 (UBC, 1997), it is anticipated that the Project could be affected by strong seismic ground shaking. A peak ground acceleration of 0.1 to 0.2g has a 10 percent chance of being exceeded in a 50-year period (Tianqing, 2003). The primary impact from ground-shaking will be to components at installed at the substations. Impacts to the transmission line are anticipated to be less than significant. Design-level investigations and appropriate engineering and construction measures will avoid or reduce potential impacts of seismic ground shaking to a less than significant level.			
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	iii) As discussed above, local liquefaction could occur, though the risk is low. However, with careful design-level geotechnical investigations and appropriate engineering and construction measures, PacifiCorp will avoid or reduce potential impacts of seismic-related ground failure to a less than significant level.			
iv) Landslides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	iv) While most of the transmission line is only gently inclined ground, there are sloped areas underlain by expansive soils and clays that may be susceptible to landsliding and would become even more susceptible			

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:	during strong seismic ground shaking. Design-level geotechnical investigations and appropriate engineering and construction measures will avoid or reduce potential impacts of landsliding to a less than significant level.			
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Soils disturbed during the construction process are subject to loss of vegetative cover, resulting in erosion on-site and sedimentation that affects the Project or adjacent areas. The primary disturbance will occur in areas where new roads are constructed, where existing access roads will need clearing, where grading occurs for pulling and tensioning sites, and where grading occurs within the substation. The proposed construction will occur during the dry season, reducing the potential for soil loss during construction. Development of a temporary site-specific erosion and sedimentation control plan and implementation of BMPs will reduce the potential impacts to less than significant. Plans will also include revegetation of disturbed areas. Design-level geotechnical investigations and appropriate engineering and construction measures will avoid or reduce potential impacts of landsliding to a less than significant level.			
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Most to the project area is located on relatively level ground and is not susceptible to landsliding or collapse. Short segments of sloped areas are present in proximity to the Project where landslides could occur. However, the potential for landsliding increases where new roads are constructed on slopes steeper than about 30 percent, where slopes steeper than 15 percent are underlain by expansive soils or where regrading is required along the existing access roads that cross sloped areas. Design-level geotechnical investigations, avoidance of potentially sensitive slopes and/or appropriate engineering and construction measures will avoid or reduce potential impacts of geologic hazards to a less than significant level. An eruption from Mount Shasta could impact the Project area. The potential for an event with unavoidable adverse impacts is considered low and is no different than for existing conditions.			

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) A few of the soils mapped along the existing transmission corridor are considered to have moderate to high shrink-swell potential. Design-level geotechnical investigations and appropriate engineering and construction measures will avoid or reduce potential impacts of geologic hazards to a less than significant level.				
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) No septic tanks or alternative waste water disposal systems are planned as part of the proposed Project.				

4.2.7 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
a) Project operation will not involve the routine transport, use or disposal of significant amounts of hazardous materials. Maintenance of the substation and transmission line will require the periodic transport of hazardous materials such as petroleum products. The materials will be shipped and disposed in accordance with Department of Transportation and state and federal EPA regulations. Thus, impacts will be less than significant.				
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Project construction will involve the use of motor-driven vehicles and equipment, and possible use of herbicides,				

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<p>presenting a minor potential for spills of gasoline, oil, antifreeze, and other associated chemicals. Since the risk of a spill and the potential pill size are minor, and impacts will be less than significant.</p> <p>c) Two existing schools (Grenada Elementary and Grenada Community Day) lie within 0.25 mile of the Project right-of-way. However, construction is not expected to result in releases of hazardous emissions, substances or waste that might impact either site because PacifiCorp will adhere to all federal, state, and local laws in regards to hazardous materials containment, control, and transport. The Project will thus result in a less than significant level to schools.</p>			
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<p>d) The Project will not pass through any known listed hazardous materials sites. Although unlikely, it is possible that contamination could be encountered in the new transmission line area, and to a lesser extent, in the transmission line upgrade area during Project construction. Prior to initiating project construction in both areas, appropriate safety measures will be implemented to ensure the safety of construction workers. All crews would be instructed on appropriate health, safety, and environmental measures to be taken should they encounter contamination. These measures would ensure that construction activities associated with the Project will not impact human health or the environment, resulting in a less than significant impact.</p>			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<p>e) One airport (Weed) is located within 2 miles of the Project. The Project will involve construction of poles that will average 9 feet higher than the existing condition. As part of transmission line design, the Project will comply</p>			

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
	with Federal Aviation Administration (FAA) procedures. Final locations, structures, and structure heights would be submitted to the FAA for the Project. Prior to construction, a Notice of Proposed Construction or Alteration form with the FAA (FAA Form 7460-1) would be filed if needed. The form would be sent to the manager of the FAA Regional Air Traffic Division Office having jurisdiction over the area where the planned construction would be located. High-visibility devices would be installed if required by the FAA as a result of their review of that notice. Nevertheless, prior to construction, the Project will be brought to the attention of the Federal Aviation Administration for a hazard determination, rendering the potential impact to a less than significant level.			
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) The Project will not pass within two miles of a known private airstrip; therefore there will be no impact.				
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) The Project will not result in inadequate emergency access in the project area. Lane closures will be coordinated with local jurisdictions and emergency service providers.				
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) The Project could expose structures, including transmission poles and substation facilities, to a risk of loss or damage involving wildland fires. Transmission lines could pose a fire hazard when a conducting object, such as a tree limb, comes into close proximity with a line, or when a live-phase conductor falls to the ground. PacifiCorp performs vegetation clearance and tree trimming to reduce fuel materials under and around transmission lines, which helps reduce fire risks. Impacts associated with fire hazards will be mitigated to a less than significant level.				

4.2.8 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>a) The Project crosses the Shasta River and several small ephemeral and perennial waterways (i.e., Garrick Creek). There are also several potential wetland areas in the southern portion of the Project corridor, including the margins of the Shasta River and the pastures adjacent to Hoy Road.</p> <p>Project operation would not result in any pollutant discharge. However, there is a potential for temporary and minor increases in sedimentation due to stormwater runoff from pole sites, staging areas, access roads and other disturbed sites as a result of construction. Poles will be located to span sensitive water features. In addition, implementation of measures outlined in a Storm Water Pollution Prevention Plan (SWPPP) will reduce impacts to less-than-significant levels.</p>				
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>b) Groundwater supplies and recharge will not be impacted because no removal or addition of groundwater is involved with the Project.</p>				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>c) The alignment of streams and rivers will not be altered as a result of the Project. No substantial alteration to existing drainage patterns on and in the vicinity of the Project area is expected. Therefore, no substantial erosion or siltation is expected on- or off-site as a result of drainage alteration.</p>				
d) Substantially alter the existing drainage pattern of the site or area,	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				
		d) Alteration of streams, rivers or a substantial effect on drainage patterns will not occur during construction. Some vegetation removal and soil disturbance will occur during clearing of pole areas, staging areas, and access roads, resulting in the potential for increased stormwater runoff. However, implementation of the best management practices (BMPs) associated with a SWPPP will minimize the potential for surface runoff and reduce the potential for on- or off-site flooding to a less than significant level.		
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		e) There is the potential for additional stormwater runoff as a result of construction. However, based upon the limited amount of disturbance and the implementation of a SWPPP the potential to exceed the capacity of existing or planned stormwater drainage systems or to provide substantial additional sources of polluted runoff will be reduced to a less than significant level.		
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		f) The project will not include any components that will otherwise substantially degrade water quality.		
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		g) No housing will be constructed as a result of this Project. Therefore the Project will not increase exposure of people or structures to flooding.		
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		h) Several sections of the existing transmission line are currently located within the 100-year floodplain. However, the new poles will not impede or redirect flood flows.		

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Construction of the Project will not involve the construction or modification of a dam or levee, or expose people or structures to a significant risk of loss, injury or death involving flooding. Therefore, there would be no impact.				
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) The Project site is not located near a body of water that will cause a seiche or tsunami. Although there are hills near the site, mudflows will not occur at a level to cause destruction or inundation of the facility due to the distance of the hills from the Project site.				

4.2.9 Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
a) The Project will, for the most part, replace an existing transmission line along an existing right-of-way and will not displace any existing facilities. Construction of the new line will traverse open space and not impede movement under it. Construction of Lucerne Substation will be within the fence line. Thus, there will be no impact dividing an existing community.				
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) In Siskiyou County, there is no general plan land use map that shows the boundaries of specific planned land use categories. Instead, physical constraints based on natural resources are mapped and general development policies based on these constraints have been adopted. According to the mapped resource overlays for the Siskiyou County				

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
	<p>General Plan, the proposed new line will be located within a Prime Agricultural Resource Area, Erosion Hazard Area, Wildlife Hazard Area, and Woodland Productivity Area. According to the Siskiyou County Planning Department, the Project will be consistent with the policies affecting these areas.</p> <p>The Siskiyou County General Plan (Energy Element 1993) also contains a policy (policy 33) which states "Existing transmission corridors should be fully utilized before new corridors are created; and if new corridors are necessary, their planning should be thoroughly coordinated with affected landowners and responsible agencies." The Project, for the most part, will replace an existing transmission line in an already established utility corridor, thus avoiding the need to create an entire new utility corridor. Coordination with affected landowners and responsible agencies is being conducted for the entire Project. According to the Siskiyou County Planning Department, the Project is consistent with the Siskiyou County General Plan.</p>			
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<p>c) The Project will not conflict with any habitat conservation plan or natural community conservation plan, and will therefore have no impact associated with such plans.</p>			

4.2.10 Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<p>a) The Project will not result in the loss of availability of any known mineral resource, and will have no impact associated with the availability of mineral resources.</p>			
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

b) The Project will not result in the loss of any locally important mineral resource recovery site. There are no designated mineral resource recovery sites delineated in the Siskiyou General Plan or known recovery sites within the Project area, and therefore will have no impact associated with mineral resource recovery and recovery sites.

4.2.11 Noise

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
a) The Project operation will not expose persons to noise levels in excess of standards established in plans or noise ordinances. Temporary construction-related noise will occur primarily within rural areas, but will be within acceptable levels of plans and ordinances.				
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) The Project operation will not produce excessive groundborne vibration or groundbourne noise. However, temporary and minor construction-related ground vibrations and noise may occur, but will be less than significant, due to the duration and intensity of the construction activities for replacing existing poles, and the proximity of sensitive receptors, such as residences, in relation to the right of way.				
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Project operation will not generate a substantial permanent increase in ambient noise levels above existing conditions.				
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) The noise from the transmission line will not be higher than existing airport and highway noise. Construction of the Project will produce a temporary increase in noise levels during construction due to operation of heavy machinery. However, these noise levels are not substantial, when				

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
	compared to other typical activities within the Project area (see Chapter 12 for further description of construction related noise levels).			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	e) The long term operational noise from the transmission line will not be higher than existing ambient noise sources surrounding the airport and may be higher due to short-term construction work activities.			
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	f) The Project is not located within the vicinity of a private airstrip.			

4.2.12 Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	a) The Project will not induce substantial population growth. The Project is designed to increase the reliability of the electric system for the existing population by addressing an existing voltage problem and to meet near future demands to the electric system in the Siskiyou County region, thus accommodating planned population growth and development by local land use entities (e.g., Siskiyou County and City of Weed). The project will be growth accommodating not growth inducing, and thus will be a less than significant impact.			
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
elsewhere?				
	b) The Project will not displace any existing housing or necessitate the construction of replacement housing, therefore having no impact.			
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	c) The Project will not displace any persons nor require the construction of replacement housing elsewhere, therefore having no impact.			

4.2.13 Public Services

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	a) The Project will not impact any public services, including fire protection, police protection, schools, parks, or other public facilities. Thus, there will be no impact on public services.			
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.2.14 Recreation

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
a) The Project will not result in the increased use of existing or regional parks or other recreation facilities, and will have no such impact on parks and facilities.				
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) The Project will not include any recreational facilities or require the construction or expansion of recreational facilities, and will have no impact on the environment associated with any such expansion or construction.				

4.2.15 Transportation / Traffic

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
a) Project construction will result in a minor increase in traffic associated with construction equipment and workers and during construction of transmission lines that cross or parallel roadways. Though construction will not require blocking entire roadways, construction activity and associated vehicles are anticipated to temporarily increase traffic along some roadways in the Project area but will be a less than significant impact.				
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b) The Project will not lead to an exceedence of a level of service standard for any designated road or highway. Increased traffic during construction will result in less than significant impacts to level of service standards throughout the Project area. A Traffic Control Plan will be filed with the California Department of Transportation and the Siskiyou County Public Works Department.				
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) The Project will not result in a change in air traffic patterns. The Project does not involve the use of helicopters.				
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) The Project will not increase hazards due to any transportation features. The Project will cross railroad tracks but these crossings will be scheduled so that train schedules are not impacted. Incompatible uses associated with the project, such as use by construction equipment and transport of transmission poles and substation equipment will be minor and impacts associated with incompatible uses will be less than significant.				
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) The Project will not result in inadequate emergency access in the Project area. Lane closures will be coordinated with local jurisdictions and emergency service providers.				
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) The Project will not impact parking capacity in the Project area.				
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) The Project will not conflict with any adopted policies, plans, or programs supporting alternative transportation in the Project area or vicinity, and will therefore have no impact on alternative transportation.				

4.2.16 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	a) The Project will not substantially increase wastewater generation and will have no impact associated with exceedence of wastewater treatment requirements.			
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	b) The Project will not include construction of new water or wastewater treatment facilities or expansion of existing facilities, and will therefore have no impact associated with environmental effects of expanding such facilities.			
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	c) The Project will not require or result in the construction of additional storm water drainage facilities or expansion of existing facilities, and will have no impact associated with environmental effects of expanding such facilities.			
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	d) The Project will require minimal water supplies but will not impact existing supplies and entitlements. Construction crews will bring in potable water for drinking purposes and non-potable water for dust control.			
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	e) The Project will require no increase in wastewater treatment and will have no impact associated with wastewater treatment capacity.			
f) Be served by a landfill with sufficient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
permitted capacity to accommodate the projects solid waste disposal needs?				
f) Project construction will generate minor amounts of waste, and project operation will generate only negligible amounts of waste. Waste will be disposed of in a facility with sufficient permitted capacity to accommodate the projects disposal needs, and will therefore have no impact associated with solid waste disposal.				
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Project construction and operation will comply with all statutes and regulations related to solid waste and will have no impact associated with solid waste generation or disposal.				

4.2.17 Mandatory Findings of Significance

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
a) The Project will not degrade the quality of the environment or substantially reduce habitat such that a fish or wildlife population will drop below self-sustaining levels. Neither will it eliminate a plant or animal community, nor significantly impact a rare or endangered plant or animal, nor eliminate important historic resources. Biological or cultural impacts can be mitigated to a less than significant level, as explained in Chapter 6 Biological Resources and Chapter 7 Cultural Resources of this PEA.				
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	b) The Project will not result in considerable cumulative impacts, as explained in Chapter 17 of this PEA.			
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) The Project will not result in substantial adverse effects on human beings.				

CHAPTER 5 AIR QUALITY

5.1 Introduction

This chapter describes existing air quality within the Project area, discusses the regulatory framework governing air quality in the region, and evaluates the potential incremental air quality impacts associated with Project construction and operation. Although Project construction will result in minor temporary impacts to air quality in the immediate vicinity of the Project, the Project will comply with all federal, state, and local air quality regulations. All potential air quality impacts associated with Project construction and operation will be less than significant.

5.1.1 Methods

Analysis of Project-related air quality impacts was conducted by contacting the regional air quality board and assessing the potential for air quality impacts associated with the proposed Project construction and operation. Regional air quality data is supplied by the California Air Resources Board and national data is supplied by the U.S. Environmental Protection Agency.

Emissions estimates used for both the construction and operation phases are conservative and provide an estimate of air quality impacts under the worst-case scenario. The following “worst case” assumptions were used during analysis:

- Fleet vehicle age is 10 years.
- All vehicles and equipment will be operated daily and simultaneously.

In addition, sulfur dioxide (SO₂) emissions estimates are especially conservative, as emissions factors used from EPA reference documents do not reflect the use of reformulated-diesel fuel. Furthermore, fugitive dust resulting from the operation of construction equipment, is highly variable and depends on the type of surface at the staging area (tarmac or dirt), the type of roads traveled, the amount of moisture in soils in and around travel and work areas. Estimated PM-10 emissions associated with Project construction and operation are therefore broad and conservative to account for the uncertainty in fugitive dust emissions.

5.1.2 Applicable Laws and Regulations

Federal, state, and local jurisdictions, including the U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB), the Northeast Plateau Air Basin and Siskiyou County Air Pollution Control District regulate air quality throughout the project region. Each of these jurisdictions develops rules, regulations, policies, and/or goals to maintain air quality and to attain the goals and directives imposed upon them through legislation. Although EPA regulations may not be superseded, state and local regulations may be more stringent. Federal, state, and local air quality regulations are detailed below.

Pollutants subject to federal ambient standards are referred to as “criteria” pollutants. The EPA publishes criteria documents to justify the choice of standards. Both federal and state jurisdictions impose criteria pollutant standards as the primary means of controlling ambient air quality. Federal and state standards for criteria pollutants and other state-regulated pollutants are shown in Table 5-1. In addition to ambient air quality standards, additional consideration is taken to protect those members of the population who are most sensitive to the adverse health effects of air pollution. These “sensitive receptors,” or specific population groups, as well as land uses where they would reside for long periods, include children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and clinics. Two schools, in

the same location, are in the proximity of the transmission line in Grenada along with a residential neighborhood. A few rural homes are scattered along the project corridor.

Federal Air Quality Regulations

The Federal Clean Air Act of 1970 (CAA) authorized the establishment of national health-based air quality standards for six criteria pollutants known to adversely affect human health—carbon monoxide (CO), ozone (O₃), particulate matter (PM₁₀), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead (Pb)—and set deadlines for their attainment throughout the country. The act required states exceeding the federal standards to prepare and implement air quality plans in order to achieve attainment for all six criteria pollutants by 1987.

The CAA was amended in 1977 and 1990 to include standards for toxic air contaminants, to require facilities emitting pollutants to sharply reduce their emissions, and amended the actions required of areas exceeding air quality standards and the deadlines set for attaining federal standards. The Clean Air Act Amendments of 1977 and 1990 require that states prepare and adopt a State Implementation Plan for each criteria pollutant that violates national standards and that designated agencies in any area that does not meet national standards prepare and adopt an air quality management plan demonstrating the steps to be implemented to bring the area into compliance. In addition, the amendments of 1990 provide a new timeframe and a new set of guidelines for implementing the air quality regulations.

Table 5-1 Federal and State Air Quality Standards

Pollutant	Averaging Time	California Standards ¹	Method ⁴	Federal Standards ²		Method ⁷	
		Concentration ³		Primary ^{3,5}	Secondary ^{3,6}		
Ozone (O3)	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	0.12 ppm (235 µg/m ³) ⁸	Same as Primary Standard	Ultraviolet Photometry	
	8 Hour	0.070 ppm (137 µg/m ³)*		0.08 ppm (157 µg/m ³) ⁸			
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	20 µg/m ³		50 µg/m ³			
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State	Standard	65 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	15 µg/m ³			
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m ³)	None	Non-Dispersive Infrared Photometry (NDIR)	
	1 Hour	20 ppm (23 mg/m ³)		35 ppm (40 mg/m ³)			
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		—			
Nitrogen Dioxide (NO2)	Annual Arithmetic Mean	—	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m ³)	Same as Primary Standard	Gas Phase Chemiluminescence	
	1 Hour	0.25 ppm (470 µg/m ³)		—			
Sulfur Dioxide (SO2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m ³)	—	Spectrophotometry (Pararosaniline Method)	
	24 Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (365 µg/m ³)			
	3 Hour	—		—			0.5 ppm (1300 µg/m ³)
	1 Hour	0.25 ppm (655 µg/m ³)		—			—
Lead ⁹	30 Day Average	1.5 µg/m ³	Atomic Absorption	—	—	—	
	Calendar Quarter	—		1.5 µg/m ³			Same as Primary Standard

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Pollutant	Averaging Time	California Standards ¹	Method ⁴	Federal Standards ²		Method ⁷
		Concentration ³		Primary ^{3,5}	Secondary ^{3,6}	
Visibility Reducing Particles	8 Hour	Extinction coefficient of visibility of ten miles or more miles or more for Lake Tahoe) particles when relative humidity 70 percent. Method: Beta Transmittance through Filter	0.23 per kilometer — (0.07 — 30 due to is less than Attenuation and Tape.	No Federal Standards		
Sulfates	24 Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ⁹	24 Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

*This concentration was approved by the Air Resources Board on April 28, 2005 and is expected to become effective in early 2006.

See footnotes on next page ...

Source: CARB May 2005 (<http://www.arb.ca.gov/aqs/aaqs2.pdf>)

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equalled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.
8. New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18, 1997. Contact U.S. EPA for further clarification and current federal policies.
9. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

To protect human health and the environment, the EPA has set “primary” and “secondary” maximum ambient thresholds for all six criteria pollutants. Primary thresholds were set to protect human health, particularly sensitive receptors such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings.

The combined primary and secondary standards are termed the National Ambient Air Quality Standards (NAAQS) and are shown in Table 5-1, along with state ambient air quality standards

and project area attainment status. Note that standards for lead are no longer included in NAAQS, as lead concentrations have been adequately decreased nationwide with the removal of lead from fuels, and that particulate matter is divided into particles less than 10 microns in diameter (PM10) and particles less than 2.5 microns in diameter (PM2.5). The project area is currently unclassified or in attainment of all federal and state ambient air quality standards (SCAPCD 2005).

State Air Quality Regulations

The California Air Resources Board (CARB) has set ambient air quality standards to protect public health and welfare that are stricter than the NAAQS set by the EPA under the federal CAA. Under the California Clean Air Act of 1988 (CCAA), the CARB designated all air basins within the state as attainment, nonattainment, or unclassified for all criteria pollutants, and required regional air quality management and control districts to develop and implement strategies to attain state ambient air quality standards. California's standards and the project area's attainment status also are shown in Table 5-1. The project area is currently unclassified or in attainment of all state ambient air quality standards.

Regional and Local Air Quality Regulations

The project area lies within the Siskiyou County Air Pollution Control District (SCAPCD), and air quality emissions within the project area fall under its jurisdiction. The SCAPCD regulates air pollutant emissions throughout their region, including carbon monoxide, hydrogen sulfide, nitrogen oxides (including nitrogen dioxide), organic compounds, ozone, particulate matter, and sulfur oxides (including sulfur dioxide). The SCAPCD enforces regulations and permits governing these pollutants, and develops and implements air quality plans to reach attainment of all standards.

The SCAPCD is a regional air district that conforms to state CEQA guidelines, as part of the Northeast Plateau Air Basin which contains the project area. The district states that major sources of emissions should install emission-control devices and new sources must apply for air quality permits. The Ozone Attainment Plan identifies control measures the region should implement in order to improve air quality in the Air Basin. Finally, as discussed below in Section 5.3, the SCAPCD has not set forth significance criteria of air quality impacts associated with transmission line construction projects required to be assessed. Project construction and operation will be consistent with the existing SCAPCD regulations and guidelines. The Siskiyou County General Plan does not address any requirements regarding the protection and enhancement of air quality in the Project region. The County does not have any air quality protection policies that are applicable to the Project. County air quality goals and policies do not limit the construction or operation of the project. The Project will comply with all local policies and regulations.

5.2 Environmental Setting

Though impacts are discussed under the worst-case scenario, it is unlikely that this scenario will occur; actual impacts on air quality associated with Project construction and operation will therefore be less than those determined for a similar analysis.

Air quality in a given region is determined by its topography, meteorology, climate, and air pollutant sources. This section discusses the factors contributing to air quality in the Project region.

5.2.1 Regional Topography, Meteorology, and Climate

The Project is located in the northern portion of California, entirely in Siskiyou County. Over the northern three-fourths of the State there are two primary mountain chains paralleling the coast, while in the southern one-fourth there is only one. Isotherms run mostly north-south, parallel to the contours of the mountains, instead of east-west as is common in most parts of the temperate

zone. Along the western side of the Coast Range the climate is dominated by the Pacific Ocean. Warm winters, cool summers, small daily and seasonal temperature ranges, and high relative humidity are characteristic of this area. With increasing distance from the ocean, the maritime influence decreases. Areas that are well protected from the ocean experience a more continental type of climate with warmer summers, colder winters, greater daily and seasonal temperature ranges, and generally lower relative humidity. The Yreka chamber of commerce reports Siskiyou County mean temperatures for January fluctuate between 28 to 34 degrees Fahrenheit. The July mean temperatures fluctuate between 63 to 73 degrees Fahrenheit (yrekachamber.com).

In the northern part of the State the Coast Range merges with the Cascade Range, farther inland, to create an extensive area of rugged terrain more than 200 miles in width. The Cascades then extend southeastward until they merge into the Sierra Nevada. In the north the Cascades range generally from 5,000 to 10,000 feet in height, with spectacular Mt. Shasta rising to 14,161 feet (Western Regional Climate Center, 2005). This unique variation of elevation and rugged terrain contributes to the fluctuating climate in the project area.

Precipitation

Annual precipitation totals in excess of 50 inches per year are characteristic of the west slope of the Sierra Nevada north of Stockton, the west slope of the Coast Range from Monterey County northward, and parts of the Cascades. Exception to this are totals that decrease to about 20 inches in the Monterey Bay area and parts of the San Francisco Bay area. In the lee of the Coast Range, annual precipitation drops off to 15 inches in parts of the Sacramento Valley, and to less than eight inches over most of the San Joaquin Valley. The northeast interior portion of the State receives from 15 to 18 inches of moisture in a year. Siskiyou county annual precipitation was reported as ranging between 10 and 21 inches per year. Snowfall could range between 9 and 28 inches in the county area (yrekachamber.com).

Yearly averages of daily temperatures near Weed from 1971 through 2000 ranged from 87°F as a daily average high to 49°F as a daily average low. The highest daily average rain amounts in the project area during the wet season from November through May were approximately 0.15 inches, with snowfall averaging around 1 inch. The average monthly precipitation recorded at the Weed Fire Department has the highest amount of rain expected in January with 3.94 inches occurring during this month. It is expected that rain and snow will occur mostly between November and May of each year throughout the project area and fluctuate throughout the wet season based upon altitude (Station data from Weed FD 049499).

5.2.2 Regional Air Quality

The Project area lies within the Northeast Plateau Air Basin (Basin), which includes Siskiyou, Modoc, and Klassen Counties. Three air-quality designations can be given to an area for a particular pollutant:

- Nonattainment: Air quality standards have not consistently been achieved.
- Attainment: Air quality standards have consistently been achieved.
- Unclassified: There is not enough monitoring data to determine the area's attainment status.

The Project area is in attainment or unclassified for all federal and state ambient air quality standards.

Ozone

Ozone is a photochemical oxidant and the primary component of smog. Though not emitted directly into the atmosphere, ozone is a secondary air pollutant formed through complex chemical reactions involving the precursor emissions of volatile organic compounds (VOC) and nitrogen

oxides (NOX), both of which are emitted by stationary and mobile sources such as motor vehicles and industrial sources. Ozone is a regional air pollutant that is formed downwind of VOC and NOX sources. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours.

The adverse health effects associated with ozone exposure primarily pertain to the respiratory system. Scientific evidence indicates that ambient levels of ozone not only affect sensitive receptors but affect healthy adults as well. Short-term exposure to ozone can cause constriction of the airways, increased respiratory rates, and pulmonary resistance, and may also irritate the eyes. In addition to causing shortness of breath, ozone can aggravate respiratory diseases such as asthma, bronchitis, and emphysema. High ozone concentrations are also a potential problem to sensitive crops, such as wine grapes.

Ozone levels within the Basin have remained relatively stable over the last decade. ARB monitoring data over the past 10 years shows ozone monitoring data measured in the closest air monitoring station (Yreka Foothill Drive Station) in the vicinity of the Project since 1993. The state 1-hour ozone concentration standard has never been exceeded within the past 10 years. PacifiCorp has concluded from conversations with the air monitoring contact at the Yreka Foothills Drive station that the Ozone levels have remained relatively stable (Siskiyou County APCD, personal communication). What has recently changed is the retroactive lowering of the 8 hour State Ozone standard by ARB. This retroactive lowering to 70 ppb (from 70 ppm) for the State standard has resulted in 5 Ozone exceedances in the 2001 through 2004 time frame. In addition to state standards, both the 1-hour and 8-hour federal ozone standards were not exceeded in the Project vicinity. The revised 8-hour State standard for ozone was exceeded 5 times from 2001 through 2004 due primarily to weather and fires. The largest exceedance was 75 ppb during the 2002 Biscuit Complex fires and the other exceedances were 71 ppb during 2003 (ARB air quality trends summary at <http://www.arb.ca.gov/adam/cgi-bin/db2www/polltrends.d2w/start>).

Particulate Matter (PM10)

PM10 consists of particulate matter that is 10 microns or less in diameter, and PM2.5 consists of particulate matter 2.5 microns or less in diameter. Both PM10 and PM2.5 can cause a variety of adverse health effects when inhaled into the air passages and the lungs. Particulate matter in the atmosphere results from a variety of dust- and fume-producing industrial and agricultural operations, combustion, and atmospheric photochemical reactions. Some of these operations, such as demolition and construction activities, contribute to increases in local PM10 and PM2.5 concentrations, while others, such as vehicular traffic, affect regional concentrations.

Major sources of primary PM10 emissions in Siskiyou County include industrial mineral processes, construction and demolition activities, residential fuel combustion, and the Biscuit wild fires in 2002. Particulate concentrations near residential sources generally are higher during the winter, when more fireplaces are in use and meteorological conditions prevent the dispersion of directly emitted contaminants.

The maximum PM10 concentration observed in the Project vicinity in the past decade was 69 $\mu\text{g}/\text{m}^3$, observed in 2002. As shown in Table 5-2, PM10 has exceeded state 24 hour average standards up to 6 times during 2002. There are no other exceedances observed in the past ten years. Concentrations have not exceeded national standards except during wildfires for the monitoring period from 2002 (telecon with air monitoring department in Siskiyou County). Although the Biscuit Complex wildfires caused six estimated exceedances of the State 24-hour PM10 standard of 50 $\mu\text{g}/\text{m}^3$ in 2002, particulate levels did not exceed the State annual PM10 standard of 20 $\mu\text{g}/\text{m}^3$.

Currently, the only sites monitored in Siskiyou County are for PM10 and ozone and according to the ARB almanac 2005, are in attainment for these pollutants per the Air Monitoring department of SCAPCD (<http://www.arb.ca.gov/aqd/almanac/almanac05/pdf/chap105.pdf>).

Table 5-2 provides information on yearly variations for the highest PM10 and PM2.5 concentrations recorded across the Siskiyou County APCD in 2001 through 2003. Air Quality monitoring shows that ambient concentrations of PM10 are well below federal and state standards. There was no PM2.5 monitor in the air district during this period. The PM 2.5 is listed as unclassified due to a lack of data as monitoring for this pollutant was just implemented.

Table 5-2 PM10 and PM2.5 Air Quality in the Siskiyou County APCD.

Year	PM10 (ug/m3)			PM2.5 (ug/m3)	
	Calculated	Max	Max Annual	Max	Max Annual
	Days over State Std.	24-hour (Std.=50)	Average(Std.=20)	24-hour	Average(Std.=12)
2001	0	33	17		
2002	6	77*	18	No Monitor	
2003	0	31	13		

* This value was excluded for determining attainment status. See text.

5.3 Environmental Impacts

This section presents an analysis of the potential air quality impacts associated with Project construction and operation. Emissions from construction equipment exhaust and generation of particulate matter are the primary concerns in evaluating short-term air quality impacts. Long-term impacts, however, will be negligible since emission-related activities associated with Project operation and maintenance will be limited to periodic maintenance trips. In addition:

- Construction activities associated with the transmission line upgrade will require less ground disturbance than a typical transmission line Project because the majority of the Project is within an existing right-of-way and will utilize existing access roads as much as possible, resulting in an insignificant impact.
- Construction of the new 115 kV transmission line portion will be of short term duration and short distance and require few vehicles. As such, impacts will be less than significant.
- The substation upgrades will not require expansion outside of the existing fenceline. As such, no significant impacts to air quality are expected.

5.3.1 Significance Criteria

Standards of significance were derived from Appendix G of the CEQA Guidelines and in accordance with federal Clean Air Act General Conformity Requirements. Impacts to air quality were considered to be significant if they will:

Conflict with or obstruct implementation of any applicable air quality plan;

No conflict, as there are no significance criteria for the SCAPCD.

Violate any federal or state air quality standard or contribute substantially to an existing or projected air quality violation;

No conflict, as the state and national pollutants for the SCAPCD are all either attainment or unclassified. Areas that cannot be classified or are better than the national standards are given an unclassified status.

Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under applicable federal or state ambient air quality standards (including releasing emissions which exceed quantitative thresholds for ozone precursors);

No conflict, as there are only monitors for PM2.5 and ozone in Siskiyou County by the SCAPCD.

Expose sensitive receptors, including schools, hospitals, and residential areas to substantial pollutant concentrations;

No conflict, as the one sensitive receptor in the pathway, a Grenada school, will see limited construction in the form of stringing a transmission line within the SCAPCD.

Create objectionable odors affecting a substantial number of people;

No conflict, as there are no odors associated with transmission line construction in the SCAPCD.

The Project is a minimal source of priority pollutants and generates far less than the thresholds of 100 tons per year of NO₂, VOC, CO, or PM₁₀ that characterize minor sources. In assessing construction-related impacts, SCAPCD recommends a qualitative approach that focuses on the dust control measures that will be implemented; if appropriate mitigation measures, such as sufficient water trucks, are implemented to control PM-10 emissions, impacts associated with Project construction will be less than significant (SCAPCD telecon 2005).

In assessing operation-related impacts, SCAPCD does not think that a quarterly maintenance inspection vehicle will cause an exceedance of any pollutant criteria (state or national), or that air emissions from the Project will cause a significant impact. Lastly, SCAPCD recommends that ample watering take place to prevent any local nuisance ordinances from coming in to play with cumulative air quality effects of the Project.

5.3.2 Potential Impacts

Construction Impacts

Construction-related emissions are generally short-term in duration, but may still cause adverse air quality impacts. Project construction will employ a variety of construction and grading equipment. PM-10 is the primary air pollutant emitted during construction activities, but additional pollutants are emitted from motor-driven construction equipment, construction vehicles, and workers' vehicles. The "worst-case" scenario for total emissions during the Project construction, which will involve conducting all construction activities and excavations and operating all Project-related equipment simultaneously, will generate minimal emissions.

Projected construction emissions estimates have been presented in Table 5-3 based on estimates from a similar transmission line project. Since estimates in the table were derived from a longer transmission line and more work in the substations, the Proponent believes that the emissions from the Project would be less. These numbers generated for line and substation totals utilized generalizations at this juncture of all diesel equipment, assumed 10 year old vehicles, minimal amounts of equipment, and no helicopters. The project work is expected to be in a phased approach and not all vehicles utilized would be operating on a 24 hour per day basis. A basic assumption used is when equipment is not needed, it would not be running and these service times are subject to a construction contractor's future schedule, which normally assumes an 8 hour work day. Idling is assumed to be minimized for all vehicles. Finally the need for a lot of heavy grading and construction equipment will be minimized as the project is a reconductoring and small line addition.

Table 5-3 Construction Emissions Estimates

Activity and Equipment	Emissions (Pounds/Day)				
	VOC	CO	NO2	SO2	PM10
Transmission Line Activity					
Construction Dust*	0.00	0.00	0.00	0.00	0.1 tpd
Line Activity Totals (pounds/day)	21.4	93.5	157.1	14.6	12.6
Line Activity Totals (tons/day)	0.01	0.047	0.07	0.007	0.11
Substation Activities					
Substation Construction Total (pounds/day)	9.7	43	81	8.1	6.7
Substation Construction Total (tons/day)	0.005	0.022	0.41	0.004	0.003
Project Construction Total (Tons/day)	0.02	0.07	0.48	0.01	0.11

Source: EMFAC data

*Based on an assumed maximum of 2.5 acres of soil disturbed and applied at the AP-42 suggested rate of 1.2 tons/acre/month

Table 5-4 presents an estimated emissions inventory by source activity, including the net projected contribution of the Project to each source category. Even when assuming “worst-case” conditions, the project would contribute on a temporary basis less than 1.0 percent for all source categories, except NO2 which is 3.0 percent as compared to the 2005 estimated Annual Average Emissions reported to ARB by the Siskiyou County APCD. (http://www.arb.ca.gov/app/emsmv/emseic1_query.php)

Table 5-4 2001 Siskiyou Annual Average Emissions by Source Category

Source Category	Daily Emissions (Tons/Day)				
	ROG	CO	NO2	SO2	PM10
Total Stationary Sources	1.1	0.4	0.1	0	0.6
Total Area Wide Sources	12.7	219.0	0.4	0.2	31.8
Total Mobile Sources	8.6	50.6	11.7	0.5	0.4
Total (non-anthropogenic) Sources	166.4	113.0	4.1	1.2	11.8
Grand Total Siskiyou County (tpd)	188.9	383.0	16.3	2.0	44.6
Project Construction Total (tpd)	0.02	0.07	0.48	0.01	0.11

Source: CARB annual emissions by County

Furthermore there are no SCAPCD CEQA guidelines to determine significance with respect to construction-related emissions based on a consideration of the emissions control measures to be implemented (SCAPCD telecon 2005). Though construction-related emissions will be less than significant without implementation of emissions control measures, Project construction will include control measures listed in Section 5.3.3 to further reduce any potential air quality impacts:

Project construction control measures include all basic and enhanced control measures as listed in the CEQA Guidelines. The guidelines state that, “If all of the control measures indicated (as appropriate, depending on the size of the project area) will be implemented, then air pollutant emissions from construction activities will be considered a less than significant impact” (CEQA Guidelines Appendix G, section III). Accordingly, all air quality impacts associated with Project construction will be less than significant.

Operational Impacts

Gaseous effluents can be produced by corona activity on high voltage transmission line electrical conductors during rain or fog conditions, and can occur for any configuration or location.

Typically, concentrations of ozone at ground level for 230 kV and lower voltage transmission lines during heavy rain are significantly less than the most sensitive instruments can measure, and thousands of times less than ambient levels (nitrogen oxides are even smaller). As a result, impacts will not be significant.

The only other air emissions created by the Project, once operational, are those associated with maintenance and repair of Project components. Project maintenance and repair will not involve grading, excavation, or the use of any motor-driven equipment, but will require the use of vehicles to transport maintenance workers to and from the site. As shown in Table 5-5, using an estimated 100 vehicle miles per month (80 miles light-duty trucks and 20 miles heavy-duty trucks) for maintenance and repairs, total operations-related emissions during will be considerably less than the 0.1 percent for ROG, CO, NOX, SOx, and PM-10. Potential operational impacts to air quality are less than significant, and no mitigation measures are required.

Table 5-5 Operational Emissions Estimates

Activity and Equipment	Emissions (Pounds/Day)				
	ROG	CO	NO2	SO2	PM10
Substation and Power Line Operations Total (tons/day)	0.00006	0.00114	0.00026	0.00014	0.00008

Source: 2003 EMFAC data

5.3.3 Mitigation Measures

As all potential air quality impacts associated with Project construction and operation will be less than significant, no mitigation measures are required. However, PacifiCorp will include the following control measures during construction of the Project to further reduce any potential impacts to air quality.

The dust control measures shall include, but may not be limited to:

- Water all active construction areas and staging areas at least twice daily in dry season;
- Cover all trucks hauling soil, sand, or other loose material, or require all trucks to maintain at least 2 feet of freeboard;
- Install rock, apply water at least twice daily in dry season, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites;
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets;
- Apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more), as needed;
- Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles of soil and other excavated materials;
- Replant vegetation in disturbed areas following the completion of construction.
- Vehicle speeds will be limited to 15 mph on unpaved roads;
- Vehicle idling time will be minimized;
- Construction vehicles will use paved roads to access the construction site when possible; and

- Construction workers will carpool when possible.

5.4 References

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CHAPTER 6 BIOLOGICAL RESOURCES

6.1 Introduction and Methods

This chapter provides an overview of methods used to evaluate biological resources in the Project area, summarizes applicable laws and regulations, describes the biological resources, and identifies impacts to plant and animal species and habitats that could result from construction and operation of the proposed Project. An assessment of biological resources within the Project area, including the likelihood of occurrence of special status plant or wildlife species, was completed. This section presents the results of field surveys and literature/database review and evaluates the potential effects upon biological resources and special status species within the Project area as required pursuant to CEQA. For the purpose of collecting and compiling existing data, the "Project area" for the proposed project consisted of a 0.5 mile corridor along the proposed centerline (0.25 mile either side). Within this area, biologists determined general habitat types, known or potential occurrence of special status species, sensitive habitats, wetlands, migratory corridors, and nursery sites. Special status species include plants and animals that are 1) listed as endangered or threatened under either the federal Endangered Species Act or the California Endangered Species Act, 2) listed as rare under the California Native Plant Protection Act, and 3) listed as rare by the California Native Plant Society. Impacts to biological resources were assessed based on the "Project corridor" width of 50 feet and identified access road locations.

The study approach involved two phases. The first phase was the collection and compilation of existing information and data. General ecological information of the Project area was obtained from a number of sources, including the California Gap Analysis Program (GAP) (Davis et al. 1998), Ecological Subregions of California (U.S. Forest Service. 2005), and the California Wildlife Habitat Relationship System (California Department of Fish and Game 2005). A list of federally listed species that occur in Siskiyou County was obtained from the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service 2005). Specific information on special status species and sensitive habitats was obtained from the California Natural Diversity Database (California Department of Fish and Game 2003) and the California Native Plant Society—Inventory of Rare and Endangered Plants (California Native Plant Society 2005). Searches of the California Natural Diversity Database were based upon the five the USGS 7.5 minute topographic quads in which the Project area is located: Gazelle, Hotlum, Lake Shastina, Montague, and Weed. Based upon the information obtained from these sources, the biologists and botanists compiled a list of special status plant and animal species and sensitive communities that are known or likely to occur in the Project area.

The second phase involved having qualified biologist conduct a limited field reconnaissance along the entire Project corridor in August 2005. General habitat types were mapped along the corridor, as were potential sensitive communities (i.e., wetlands); however, no formal plant or animal surveys, or wetland delineations were undertaken. The information compiled formed the basis for a Project-specific database and resource mapping effort for the Project area. This information was used to assess potential effects associated with the proposed Project, and to identify the need for pre-construction plant, wildlife and wetland surveys. Pre-construction surveys will be conducted by qualified personnel in spring/summer 2006.

6.1.1 Regulatory Framework

Federal Regulations

Federal Regulation of Waters of the United States, Including Wetlands (Clean Water Act Sections 404 and 401) - The U.S. Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into Waters of the United States,

including wetlands, under Section 404 of the Clean Water Act (CWA). Projects that will result in the placement of dredged or fill material into Waters of the U.S. require a Section 404 permit from the Corps. Some classes of fill activities may be authorized under general permits if specific conditions are met.

The federal government also supports a policy of minimizing "the destruction, loss, or degradation of wetlands." Executive Order 11990 (May 24, 1977) requires that each federal agency take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

Utility line construction activities that result in the placement of fill into Waters of the U.S. may be authorized under Section 404 Nationwide Permit 12 (at the discretion of the Corps). Nationwide Permits do not authorize activities that are likely to jeopardize the existence of a threatened or endangered species (listed or proposed for listing under the federal Endangered Species Act) or that may affect properties listed or eligible for listing in the National Register of Historic Places (56 FR 59134, November 22, 1991). In addition to conditions outlined under each nationwide permit, project-specific conditions may be required by the Corps as part of the Section 404 permitting process.

Federal Policies on Riparian Communities in California - Riparian communities have a variety of functions, including providing high-quality habitat for resident and migrant wildlife, streambank stabilization, and runoff water filtration. Throughout the United States, riparian habitats have declined substantially in extent and quality compared with their historical distribution and condition. These declines have increased concerns about dependent plant and wildlife species, leading federal agencies to adopt policies to arrest further loss. USFWS mitigation policy identifies California's riparian habitats as belonging to resource Category 2, for which no net loss of existing habitat value is recommended (46 FR 7644, January 23, 1981).

Federal Endangered Species Act - The Endangered Species Act (ESA) provides for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The Act is implemented by 2 federal agencies, the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries), which have the ability to officially list plant and animal species as "endangered" or "threatened." An endangered species is one that is "in danger of extinction" throughout all or a significant portion of its range, while a threatened species is one that is "likely to become endangered" within the foreseeable future (16 U.S.C. § 1532). Section 7 of the ESA imposes an affirmative duty on federal agencies to ensure that their actions (including permitting) are not likely to jeopardize the continued existence of a listed species or result in the destruction or modification of their habitat. Section 7 requires an analysis of the potential effects of a project on threatened or endangered species. When a project may affect a threatened or endangered species or their habitat(s), the sponsoring agency must consult with either USFWS or NOAA Fisheries.

Federal Migratory Bird Treaty Act - The Migratory Bird Treaty Act (MBTA), originally passed in 1918, implements the United States' commitment to four bilateral international conventions (Great Britain, Mexico, Japan, and Russia) for the protection of migratory birds. The MBTA makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird, except under the terms of a valid permit issued by the USFWS. Permits may be issued to qualified applicants for falconry, raptor propagation, scientific collecting, education, rehabilitation, and taxidermy. The MBTA currently protects more than 800 migratory bird species.

Federal Bald and Golden Eagle Protection Act - The Bald and Golden Eagle Protection Act (BGEPA) prohibits any form of possession or taking of both bald and golden eagles. The statute imposes criminal and civil sanctions as well as an enhanced penalty provision for subsequent

offenses. Further, the BGEPA provides for the forfeiture of anything used to acquire eagles in violation of the statute. The use of eagles or eagle parts for exhibition, scientific, and Indian religious purposes are exempt from BGEPA prohibitions.

State and Local Regulations

State Regulation of Waters - The California Department of Fish and Game (CDFG) regulates activities that will interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. Section 1602 of the California Fish and Game Code (CFGC) requires notification of the CDFG for lake or stream alteration activities. If, after notification is complete, the CDFG determines that the activity may substantially adversely affect an existing fish and wildlife resource, the CDFG has authority to issue a streambed alteration agreement under Section 1603 of the CFGC. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. These may include avoidance or minimization of heavy equipment use within stream zones, limitations on work periods to avoid impacts to wildlife and fisheries resources, and measures to restore degraded sites or compensate for permanent habitat losses.

Storm Water Pollution Prevention Plan - The Regional Water Quality Control Board (RWQCB) implements water quality regulations under the federal CWA and the State Porter-Cologne Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activity. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

California Endangered Species Act - California implemented its own Endangered Species Act (CESA) in 1984. The state act prohibits the take of state-listed endangered and threatened species; however, habitat destruction is not included in the state's definition of take. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. The CDFG administers the act and authorizes take through Section 2081 agreements (except for designated "fully protected species").

Regarding listed rare and endangered plant species, CESA defers to the California Native Plant Protection Act (NPPA) of 1977, which prohibits importing of rare and endangered plants into California, and the taking and selling of rare and endangered plants. The CESA includes an additional listing category for threatened plants which are not regulated under the NPPA. In this case, plants listed as rare or endangered under the NPPA are not protected under CESA but can be protected under CEQA. In addition, plants that are not state-listed but meet the state standards for listing, are also protected under CEQA (Guidelines, Section 15380). In practice, this is generally interpreted to mean that all species on lists 1B and 2 of the CNPS Inventory (Tibor 2001) potentially qualify for protection under CEQA, and some species on lists 3 and 4 of the CNPS Inventory may qualify for protection under CEQA. List 3 includes plants for which more information is needed on taxonomy or distribution. Some of these are rare and endangered enough to qualify for protection under CEQA. List 4 includes plants of limited distribution that may qualify for protection if their abundance and distribution characteristics are found to meet the state standards for listing.

California Fish and Game Code Bird Protections - Section 3503 of the CFGC prohibits destruction of the nests or eggs of most native resident and migratory bird species. Section 3503.5 of the CFGC specifically prohibits the taking of raptors or destruction of their nests or eggs.

6.2 Environmental Setting

The proposed Project is located within the Upper Shasta Valley subsection of the Cascade Ranges ecological region (U.S. Forest Service 2005). Elevations within the Project area generally range between 2,500 msl at the northern end of the Project area to 3,500 msl at the southern end of the Project area. Several dominant vegetative communities typify the environmental setting for the Project area (Davis et al. 1998). The northern three-quarters of the route traverses annual grassland habitats. Specific plant species that occur in this community largely depend upon local soils, topographic conditions, weather patterns, livestock grazing, and other historic disturbances (California Department of Fish and Game 2005). The habitat quality of native vegetation communities along much of the Project corridor is limited by rocky volcanic soils that support limited grassland species or has been degraded by heavy grazing. As a result, introduced annual grasses are the dominant plant species in this habitat. These include slender wild oats (*Avena bargata*), red brome (*Bromus madritensis* ssp. *rubens*), wild barley (*Horeduem* spp.), and foxtail fescue (*Vulpia myuros*). Common forbs include broadleaf filaree (*Erodium botrys*), turkey mullein (*Eremocarpus setigerus*), bur clover (*Medicago polymorpha*), and popcorn flower (*Plagiobothrys nothofulvus*). Perennial grasses, including purple needlegrass (*Nassella pulchra*) and Idaho fescue (*Festuca idahoensis*), occur in moist and lightly grazed areas. Several areas support nearly monoculture fields of star-thistle (*Centaurea melitensis*), Russian thistle (*Salsola* spp.), and other non-native grassland species.

The predominant community along the southern one-quarter of the Project corridor is eastside pine (Davis et al. 1998). Ponderosa pine (*Pinus ponderosa*) is the dominant tree species in this habitat type, which also includes Jeffrey pine (*Pinus jeffreyi*), incense cedar (*Calocedrus decurrens*), and western juniper (*Juniperus occidentalis*). Tree densities within this community vary depending upon local soil and topographic conditions. Undergrowth includes big sagebrush (*Artemisia tridentata*), antelope bitterbrush (*Purshia tridentata*), ceanothus (*Ceanothus* spp.), and rubber rabbitbrush (*Chrysothamnus nauseosus*). Primary herbaceous plants include mule ears (*Wyethia* spp.), arrowleaf balsamroot (*Balsamorhiza sagittata*), Idaho fescue, and bottlebrush squirreltail (*Elymus elymoides*). The southern portion of the Project corridor also contains small areas of pasture land and juniper habitat, which is characterized by juniper, antelope bitterbrush and big sagebrush.

There are no sensitive communities within the Project corridor (California Department of Fish and Game 2003). The proposed transmission line does cross the Shasta River upstream of Lake Shastina, as well as a few other small ephemeral and perennial waterways (i.e., Garrick Creek). At the point where the transmission line crosses it, the Shasta River is approximately 15 feet wide and supports a relatively narrow riparian zone. Riparian vegetation in this area includes a variety of shrubs (i.e., willow and blackberry) interspersed with a few small trees (i.e., boxelder). There are also several wetland areas in the southern portion of the Project corridor, including the margins of the Shasta River and the wet meadows adjacent to Hoy Road.

6.2.1 Special Status Species

For this PEA, special-status species are defined as species that meet one or more of the following criteria:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (50 CFR 17.11 for wildlife, 50 CFR 17.12 for plants, 67 FR 40658 for candidates, and various notices in the Federal Register for proposed species);

- Listed, or proposed for listing by the State of California as rare, threatened or endangered under the California Endangered Species Act (California Administrative Code, Title 14, Section 670.5);
- Included on List 1B, 2, 3, or 4 of the CNPS Inventory of Rare and Endangered Plants of California (Tibor 2001);
- Included on the CDFG Special Vascular Plants, Bryophytes, and Lichens List (CDFG 2003a);
- Designated as Species of Special Concern by the CDFG; Identified as “species of concern” or “species of local concern” by the U.S. Fish and Wildlife Service;
- Protected by the Migratory Bird Treaty Act (MBTA) (U.S.C. 703-712; CH. 128; July 13, 1918; 40 Stat. 755, as amended); and Species that otherwise meet the definition of rare, threatened or endangered, as described in the CEQA Guidelines, Section 15380.

Special-status plant and wildlife species with potential to occur in the Project area are discussed in the following sections. Survey requirement determinations were based on previous surveys, USFWS Recovery Plans, habitat assessments, and discussions with USFWS and CDFG biologists. Required surveys will be conducted in the spring/summer 2006, prior to proposed construction in late 2006.

Plants

Based upon the database searches and literature review, a total of 14 special status plant species (Table 6-1) were identified as potentially occurring in the Project area. These species are described below.

Alkali Hymenoxys (*Hymenoxys lemmonii*) - Alkali hymenoxys occurs in Oregon, Utah, Nevada, Arizona, and in Siskiyou County California. Plants grow in moist or wet alkaline meadows in sagebrush scrub and yellow pine forest communities and at elevations of 787 to 3,280 feet. Flowering occurs from June to August (CNPS, 2005). Five populations of alkali hymenoxys occur near the Project area; but outside of the Project corridor. However, these populations are historical collections from 1897 to 1934 and have not been relocated. One population occurs north of the Project corridor near the town of Montague. A second population occurs approximately one mile west of the Project corridor between structures 17/32 and 2/34. Another population is located approximately one mile west of the Project corridor between structures 4/41 and 10/44. A fourth population of alkali hymenoxys occurs adjacent to the Project corridor near structures 17/42 to 18/45. The fifth population is located less than ½ mile east of the Project corridor, between structures 14/40 and 2/42.

Applegate's Milk-Vetch (*Astragalus applegatei*) - Applegate's milk-vetch is endemic to the Lower Klamath Basin, in Klamath County, Oregon, about fifteen miles north of the Oregon-California border. Prominent plants associated with Applegate's milk-vetch include big sagebrush, brome grass (*Bromus spp.*), Indian paintbrush (*Castilleja pilosa*), rabbitbrush, tansy mustard (*Descurainia californica*), saltgrass (*Distichlis stricta*), Great Basin wildrye (*Leymus cinereus*), quackgrass (*Elytrigia repens*), foxtail barley (*Hordeum jubatum*), peppergrass (*Lepidium perfoliatum*), sweetclover (*Melilotus spp.*), bluegrasses (*Poa juncifolia*, *P. nevadensis*), Lemmon's alkali grass (*Puccinellia lemmonii*), greasewood (*Sarcobatus vermiculatus*), squirreltail, salsify, and alfalfa (*Medicago sativa*). Plants occur at an elevation of approximately 4,100 feet and flower in early June to August (USFWS, 1998a). No known populations occur near or within the Project corridor and this species is not expected to occur in the Project corridor (Laye, USFWS, personal communication, September 19, 2005).

Coast Fawn Lily (*Erythronium revolutum*) - Coast fawn lily is found in Oregon, Washington, and California. Plants occur in redwood forests, mixed evergreen forests, broadleaf upland forests, North coast coniferous forest / mesic streambanks. Coast fawn lily can occur in bogs and fens; however it is equally likely to occur in wetlands or non wetlands (CNPS, 2005). It is found at elevations ranging from 0 to 4346 feet. Plants flower from March to June. One population occurs west of the southern portion of the Project corridor (between structures 17/42 to 18/45); however, this population is a historical collection from 1910 and has not been relocated.

Pallid Bird's-beak (*Cordylanthus tenuis* ssp. *pallescens*) - Pallid bird's-beak is endemic to California and is found only in Siskiyou County. Plants occur on lightly disturbed openings in yellow pine, Jeffrey pine, and mixed conifer forests. Plants typically occur on gravelly volcanic or ultramafic soils at elevations from 2280 to 5396 feet (CNPS, 2005). Records from the California Natural Diversity Database (CNDDDB) indicate that pallid bird's-beak occurs in association with antelope bitterbrush, greenleaf manzanita (*Arctostaphylos patula*), yarrow (*Achillea millefolium*), threetooth horkelia (*Horkelia tridentata*), wavyleaf Indian paintbrush (*Castilleja applegatei*), California rayless fleabane (*Erigeron inornatus*), yellow pine, sugar pine (*Pinus lambertiana*), white fir (*Abies concolor*), incense cedar, spear saltbush (*Atriplex patula*), Idaho fescue, pubescent western wheatgrass (*Stipa elmeri*), California black oak (*Quercus kelloggii*), Douglas fir (*Pseudotsuga menziesii*), prostrate ceanothus (*Ceanothus prostrates*), squirreltail, and needlegrass (*Stipa* spp.). Plants flower from July to September. Four populations are known to occur just south of the southern end of the Project area, but outside of the Project corridor.

Peck's Lomatium (*Lomatium peckianum*) - Peck's lomatium occurs in Oregon and Siskiyou County Oregon. Plants occur on rocky clay or clay-loam flats and slopes in the sagebrush-juniper, foothill woodland, and yellow pine forest communities. Plants are found at elevations ranging from 2296 to 5904 feet. CNDDDB data has recorded Peck's lomatium occurring in association with rough eyelashweed (*Blepharipappus scaber*), bulbous bluegrass (*Poa bulbosa*), miniature lupine (*Lupinus bicolor*), yellow star-thistle (*Centaurea solstitialis*), salsify (*Tragopogon* spp.), and stork's bill (*Erodium* spp.). Flowering occurs from April to June (CNPS, 2005). One population is known to occur within ½ mile of the Project corridor, near structures 10/42 to 14/42.

Pendulous Bulrush (*Scirpus pendulus*) - Pendulous bulrush occurs throughout the United States, but is found only in Siskiyou County in California. Plants occur at 2624 to 3280 feet in marshes, swamps, moist meadows, ditches and are often associated with calcareous substrates. Under natural conditions, pendulous bulrush occurs almost always in wetlands. Plants flower from June to August (CNPS, 2005). No known populations occur near the Project area and the potential for this species to occur in the Project area is low.

Pickering's Ivesia (*Ivesia pickeringii*) - Pickering's ivesia occurs only in two counties in California, Siskiyou and Trinity. Plants occur in ephemeral drainages and seasonally wet grassy slopes in mixed conifer and yellow pine forests on ultramafic soils. Under natural conditions, Pickering's ivesia occurs almost always in wetlands at elevations of 2624 to 4593 feet. Flowering occurs from June to August (CNPS, 2005). One population occurs near the southern portion of the Project corridor (structures 17/42 to 18/45); however, this population is a historical collection from 1880's and has not been relocated.

Shasta Chaenactis (*Chaenactis suffrutescens*) - Shasta chaenactis is present only within two counties in California, Siskiyou and Trinity. Plants occur on rocky open slopes, cobbled river terraces and on ultramafic soil or glacial till with ultramafics included. Plants also occur on upper montane coniferous forest habitat. Elevations range from 2492 to 9184 feet. Flowering occurs from May to September (CNPS, 2005). Two known populations occur near the southern portion of the Project area. However, these populations are historical collections from 1889 and 1955 and have not been relocated. One population is located approximately one mile west of the Project

corridor between structures 4/41 and 10/44. A second population of *Shasta chaenactis* occurs adjacent to the Project corridor near structures 17/42 to 18/45.

Shasta Orthocarpus (*Orthocarpus pachystachyus*) - Shasta orthocarpus is endemic to California and is found only in Siskiyou County. Plants occur on ultramafic alluvium with sagebrush and native bunchgrasses, and may be found in meadows and seeps. Elevations range from 2755 to 2788 feet and plants bloom in May (CNPS, 2005). Two known populations occur west of the southern portion of the Project corridor (near structures 6/38 and 19/38) and additional populations may be found in the Project corridor. However, these populations are historical collections from the 1890s and 1913 and have not been relocated.

Single-flowered Mariposa Lily (*Calochortus monanthus*) - Single-flowered mariposa lily is endemic to California and is known only from a single collection (in 1876) from a meadow along the Shasta River, near Yreka, Siskiyou County, which is now mostly converted to agriculture. Elevation ranges from 2443 to 2624 feet. Single-flowered mariposa lily blooms in June (CNPS, 2005). No known populations occur near the Project corridor and this species is not expected to occur in the Project area.

Siskiyou Mariposa Lily (*Calochortus persistens*) - Siskiyou mariposa lily occurs in open areas with rocky soils. Plants occur in yellow pine forest and north coastal coniferous forest habitat. The Siskiyou mariposa lily is a narrow endemic that is restricted to two disjunct ridge tops in the Klamath-Siskiyou Range, on the California-Oregon border. Two historical populations are known: Gunsight-Humbug Ridge, west of Yreka, Siskiyou County, California and the Bald Mountain site, west of Ashland, Jackson County, Oregon. Elevation ranges from 3280 to 4920 feet. Plants flower from June to July (Calflora, 2005). This species does not occur in the Project area and is not expected to occur within the Project corridor (Kanim, USFWS, personal communication, September 19, 2005).

Slender Orcutt Grass (*Orcuttia tenuis*) - Slender Orcutt grass is endemic to Northern California and is found primarily on substrates of volcanic origin. Slender Orcutt grass typically occurs in natural pools classified as Northern Volcanic Ashflow and Northern Volcanic Mudflow vernal pools; however this species has also been reported from other natural and artificially-created seasonal wetlands such as creek floodplains, stock ponds, and borrow pits. Vegetation types vary, but can include grassland and oak woodland to mixed conifer forest, silver sagebrush (*Artemisia cana*) flats, and sedge meadows. Elevations range from 115 to 5773 feet. Plants flower from May to October (Calflora, 2005; CNPS, 2005). No vernal pools are located in the Project area and this species does not occur in the Project area (USFWS, 2004a; Kanim, USFWS, personal communication, September 19, 2005).

Woolly Balsamroot (*Balsamorhiza lanata*) - Woolly balsamroot is endemic to California and is found in four counties: Siskiyou, Sierra, Nevada, and Alpine. Plants occur in cismontane woodlands and has been recorded with rubber rabbitbrush, bluebunch wheatgrass (*Pseudoroegneria spicata*), redstem stork's bill (*Erodium cicutarium*), bulbous bluegrass (*Poa bulbosa*), hawksbeard (*Crepis spp.*), trefoil (*Lotus spp.*), brome (*Bromus spp.*), western juniper (*Juniperus occidentalis*), pussytoes (*Antennaria spp.*), largehead clover (*Trifolium macrocephalum*), silver lupine (*Lupinus albifrons*), California poppy (*Eschscholzia californica*), common woolly sunflower (*Eriophyllum lanatum*), carrotleaf horkelia (*Horkelia daucifolia*), cheatgrass (*Bromus tectorum*), yellow star-thistle (*Centaurea solstitialis*), and yellow salsify (*Tragopogon dubius*). Elevations range from 2624 to 6216 feet. Plants flower from April to June (CNPS, 2005). Known populations of woolly balsamroot occur within the central and southern portion of the Project corridor (structures 6/36 to 13/36; 15/37 to 7/38; 18/38 to 3/39; and 13/40 to 5/41) and additional habitat is present.

Yreka Phlox (*Phlox hirsuta*) - Yreka phlox is a serpentine endemic and is found at elevations ranging from 2690 to 4920 feet. Plants occur in upper montane coniferous forest / serpentinite,

talus communities. Associated vegetation includes Jeffrey pine, incense cedar, Douglas-fir, western juniper, buckbrush (*Ceanothus cuneatus*), birch-leaf mountain mahogany (*Cercocarpus betuloides*), Fremont's silk tassel (*Garrya fremontii*), rubber rabbitbrush, several species of wild buckwheat (*Eriogonum* spp.), and several perennial grasses, including Idaho fescue and big squirreltail (*Elymus multisetus*). Flowering occurs from April to June. Yreka phlox is known to occur on five soil types (USFWS, 2004b). None of these soil types are present within or near the Project corridor and, as such, Yreka phlox is unlikely to occur in the project corridor (Kanim, USFWS, personal communication, September 19, 2005).

Table 6-1 Special Status Plant Species with the Potential to Occur in the Project Corridor

Common Name	Federal Status	CA Status	CNPS Status	Probability of Occurrence	Pre-construction survey required*
alkali hymenoxys (<i>Hymenoxys lemmonii</i>)	None	None	2	Moderate	Yes
Applegate's milk-vetch (<i>Astragalus applegatei</i>)	Endangered	None		Does not occur	No
coast fawn lily (<i>Erythronium revolutum</i>)	None	None	2	Moderate	Yes
pallid bird's-beak (<i>Cordylanthus tenuis</i> ssp. <i>Pallescens</i>)	None	None	1B	Moderate	Yes
Peck's lomatium (<i>Lomatium peckianum</i>)	None	None	2	Moderate	Yes
pendulous bulrush (<i>Scirpus pendulus</i>)	None	None	2	Low	Yes
Pickering's ivesia (<i>Ivesia pickeringii</i>)	None	None	1B	Moderate	Yes
Shasta chaenactis (<i>Chaenactis suffrutescens</i>)	None	None	1B	Moderate	Yes
Shasta orthocarpus (<i>Orthocarpus pachystachyus</i>)	None	None	1B	Moderate	Yes
single-flowered mariposa lily (<i>Calochortus monanthus</i>)	None	None	1A	Very low	No
Siskiyou mariposa lily (<i>Calochortus persistens</i>)	Candidate	Rare	1B	Does not occur	No
Slender Orcutt grass (<i>Orcuttia tenuis</i>)	Threatened	Endangered	1B	Does not occur	No
woolly balsamroot (<i>Balsamorhiza lanata</i>)	None	None	1B	High	Yes
Yreka phlox (<i>Phlox hirsute</i>)	Endangered	Endangered	1B	Very low	No

*Pre-construction survey requirements were determined through a review of available literature, Recovery Plans, habitat assessments, and discussions with USFWS biologists.

Wildlife

Based upon the database searches and literature review, a total of 25 special status animal species were identified as potentially occurring in the Project area (Table 6-2). The following describes the distribution, habitat use, and potential for occurrence for each of the species identified in Table 6.2.

California Red-legged Frog (*Rana aurora draytonii*) - The California red-legged frog historically occupied portions of the western slope of the Sierra Nevada from Shasta County south to Tulare County, but these populations have been fragmented and nearly eliminated (U.S. Fish and Wildlife Service 2002). Breeding habitats include streams, deep pools, backwaters within streams and creeks, ponds, marshes, sag ponds, dune ponds, and lagoons.

The Project area is located outside of the known historical range of the California red-legged frog. There are no records of this species in Siskiyou County in the CNDDDB database. The Project area is located outside the known range of the California red-legged frog, and the species does not occur in the Project corridor.

Central Valley Steelhead (*Oncorhynchus mykiss*) - The California Central Valley Steelhead ESU includes all naturally spawned populations in the Sacramento and San Joaquin Rivers and their tributaries. The ESU also includes artificially propagated steelhead stocks from Coleman National Fish Hatchery and Feather River Hatchery programs. The Project area is located outside of range of this Central Valley steelhead, and the species does not occur in the Project corridor.

Central Valley fall/late-fall chinook salmon, Central Valley spring-run chinook salmon, and winter-run chinook salmon (*Oncorhynchus tshawytscha*) - Chinook salmon inhabit the Sacramento River upstream to the Shasta Dam. The Project area is located outside the range of the chinook salmon, and the species does not occur in the Project corridor.

Delta Smelt (*Hypomesus transpacificus*) - The delta smelt is found only from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties. Their historic range is thought to have extended from Suisun Bay upstream to at least the city of Sacramento on the Sacramento River and Mossdale on the San Joaquin River (U.S. Fish and Wildlife Service 1995). The Project area is located outside the known range of the delta smelt, and the species does not occur in the Project corridor.

Lost River Sucker (*Deltistes luxatus*) - The Lost River sucker is endemic to the Upper Klamath Basin of California and Oregon. Substantial populations of Lost River suckers are only found in Tule Lake, part of the Lost River, and Lower Klamath Lake in Siskiyou County, and in Clear Lake Reservoir in Modoc County (U.S. Fish and Wildlife Service 1993). The Project area is located outside the known range of the Lost River sucker, and the species does not occur in the construction corridor.

Marbled Murrelet (*Brachyramphus marmoratus*) - The marbled murrelet is a small diving seabird that ranges along the Pacific coastline from the Aleutian Archipelago to central California. During the breeding season, the murrelet ranges up to 50 km (31 mi) inland and occupy old-growth coastal coniferous forests. In California, they nest on large, moss-covered limbs of old Douglas-fir situated within coastal conifer forest (U.S. Fish and Wildlife Service 1997). The Project area is located outside the known range of the marbled murrelet, and the species does not occur in the Project corridor.

Mardon Skipper (*Polites mardon*) - The Mardon skipper is currently known to occur in 37 sites located in four geographic areas: southern Puget Sound and the Mt. Adams area in Washington; the Siskiyou Mountains in southern Oregon; and Del Norte, California. All these sites are small and most support fewer than 50 individuals (Mattoon et al. 1998). The Project area is located outside the known range of the Mardon skipper, and the species does not occur in the Project corridor.

Northern Spotted Owl (*Strix occidentalis caurina*) - In northern California, the northern spotted owl inhabits dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats, from sea level up to approximately 7,600 feet in elevation. The species breeding range extends west of the Cascade Range through the North Coast Ranges, the Sierra Nevada, and in more localized areas of the Transverse and Peninsular Ranges. The Project area does not contain any

suitable habitat for the northern spotted owl, and the species does not occur in the Project corridor.

Oregon Spotted Frog (*Rana pretiosa*) - The Oregon spotted frog occurs in the extreme northeastern portion of California (Modoc County) up to 10,000 feet in elevation. This species inhabits swampy areas in mountainous woodlands and wet meadows, and is never found far from various aquatic habitats, springs, small cold streams and lakes (Simon 2005). The Project area is located outside the known range of the Oregon spotted frog, and the species does not occur in the Project corridor.

Shasta Crayfish (*Pacifastacus fortis*) - The Shasta crayfish is limited to the mid sections of the Pit River drainage, primarily the Fall River and Hat Creek drainages in Shasta County (USFWS, 1998b). Its geographic distribution is associated with the presence of volcanic-origin cobbles and boulders of the Modoc Plateau. The Project area is located outside the known range of the Shasta crayfish, and the species does not occur in the Project corridor.

Shortnose Sucker (*Chasmistes brevirostris*) - The shortnose sucker is endemic to the Upper Klamath Basin of California and Oregon. Substantial populations of Lost River suckers are only found in Tule Lake, part of the Lost River, and Lower Klamath Lake in Siskiyou County, and in Clear Lake Reservoir in Modoc County (U.S. Fish and Wildlife Service 1993). The Project area is located outside the known range of the shortnose sucker, and the species does not occur in the Project corridor.

Southern Oregon/Northern California Coho Salmon (*Oncorhynchus kisutch*) - Designated critical habitat Southern Oregon/Northern California Coasts coho salmon ESU includes all accessible reaches of major rivers (including estuarine areas and tributaries) between the Mattole River in California and the Elk River in Oregon. Excluded are portions of rivers above specified dams or above longstanding, natural barriers (i.e., waterfalls). This ESU includes that portion of the Shasta River below Dwinnell dam (Lake Shastina). The proposed Project crosses the Shasta River upstream of Lake Shastina and the Dwinnell dam. Coho salmon are also known to spawn in Parks Creek when adequate flows exist. The Project area is located outside designated critical habitat for the Southern Oregon/Northern California Coasts coho salmon, and the species does not occur in the Project corridor.

American Badger (*Taxidea taxus*) - The American badger is widely distributed in California. The species occupies a variety of open habitats, including grasslands, savannas, and montane meadows (California Department of Fish and Game 2003). The principal habitat requirement is friable soils, which facilitate den construction and pursuit of burrowing rodents upon which the species preys.

Badgers are relatively common in the Shasta Valley, and are known to occur in the Project area. There are both historic reports and recent observations of badgers in the vicinity of the proposed Project (California Department of Fish and Game 2003; Brian Woodbridge, U.S. Fish and Wildlife Service-Yreka Field Office, personal communication). The badger is known to occur in the Project area.

Bald Eagle (*Haliaeetus leucocephalus*) - The bald eagle is resident throughout much of California, with breeding limited to Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity Counties. The species is a relatively common local winter migrant at several inland waters in southern California, and approximately half of the wintering population is in the Klamath Basin. Habitat generally consists of large trees and snags, especially ponderosa pine, within one mile of large water bodies where they can forage.

Bald eagles are recent occupants in the Shasta Valley. A nest was discovered at the southeast end of Lake Shastina by California Department of Fish and Game in 1996 (California Department of Fish and Game 2003). This nest has been occupied in subsequent years, and represents the only

known nest in the vicinity of the proposed Project. The Project area does not contain any potential nesting, roosting, or foraging habitat for the bald eagle. Given the proximity of the proposed Project to Lake Shastina and the existing nest, transient individual bald eagles may occasionally fly through the proposed Project corridor.

Bank Swallow (*Riparia riparia*) - The bank swallow historically occurred throughout the lowlands of California with major populations on the broad river valleys of central California. The current population is restricted to portions of the upper Sacramento River and scattered colonies along the coast and northern California (Schlorff 2000). The species is a colonial nester that digs nesting hole in vertical banks and cliffs with fine-textured/sandy soils and that are near streams, rivers, or lakes.

In 1993, a colony of bank swallows was discovered along an 8-12 foot vertical bank in a quarry located west of Dwinnell Dam (California Department of Fish and Game 2003). Nesting burrows at this site were located in a vertical bank of volcanic silty soils backed by quarry faces. This represents the lone recorded observation of bank swallows in the vicinity of the Project area. There are no vertical banks or cliffs along the transmission line. The Project area does not include any potential habitat for the bank swallow, and the species does not occur within or in the vicinity of the proposed Project.

Cascades Frog (*Rana cascadae*) - In California, the Cascade frog is distributed from the Shasta-Trinity region eastward toward the Modoc Plateau and southward to the Lassen region and the upper Feather River system (Stebbins 1985). Recent surveys from Butte County northward through the Lassen National Park region to the Modoc Plateau area of eastern Siskiyou County failed to reveal any Cascades frogs at localities where they were historically known to occur. Only two adults of this taxon were recently found in each of two different years at the same location in Lassen Volcanic National Park. Surveys also in the upper McCloud River system found moderate to abundant populations in lakes and slow stream channels which contained few or no fishes were present. Preferred habitats include montane aquatic habitats such as mountain lakes, small streams, and ponds.

The lone CNDDDB record of Cascade frog in the vicinity of the Project area is a single specimen that was captured by David Johnson on May 30, 1934. The location of this capture was 5 miles southwest of Weed, California on the Shasta National Forest (California Department of Fish and Game 2003). The Project area does not include any potential habitat for the Cascade frog, and the species does not occur within or in the vicinity of the proposed Project.

Greater Sandhill Crane (*Grus canadensis tabida*) - Historically, the greater sandhill crane was known to nest in eastern Siskiyou County, northeastern Shasta County, and Lassen County. Recent surveys found the greatest numbers of breeding cranes in Modoc, Lassen, Siskiyou, and Plumas Counties (Littlefield 1989). In California, sandhill cranes establish territories in wet meadows that interspersed with emergent marsh, and typically establish nests in open wetland habitats. They roost communally in shallow water bodies and forage in grain fields and pastures within 4 miles of the roost site. There have been several recorded observations of greater sandhill cranes within the Shasta Valley and in the vicinity of the Project corridor (California Department of Fish and Game 2003), and the species has a high potential to forage and nest in the Project area (Bob Williams, California Fish and Game-Redding Office, personal communication).

Northwestern Pond Turtle (*Emys (Clemmys) marmorata*) - The northwestern pond turtle was historically present in most Pacific slope drainages between the Oregon and Mexican borders. Northwestern pond turtles inhabit a variety of aquatic habitats, including rivers, streams, lakes, ponds, wetlands, reservoirs, and brackish estuarine waters. The species is uncommon in high gradient streams (Holland 1991). Northwestern pond turtles require emergent basking sites, including rocks, logs, or emergent vegetation, and have been observed to avoid areas of open

water lacking them (Holland 1991). They also require an upland nest sites in the vicinity of the aquatic habitat that have the proper thermal environment for incubation.

There is one historic observation of the northwestern pond turtle in the vicinity of the proposed Project. This sighting occurred at a small pond located approximately 1½ miles east of Gazelle, California. There are no ponds within the Project corridor. The only potential habitat for the northwestern pond turtle will be the slow side channel of the Shasta River. The northwestern pond turtle is not likely to occur in the Project area.

Pacific Fisher (*Martes pennanti pacifica*) - In California, the Pacific fisher occurs from the Oregon Border in the northwestern part of the state south to the Coastal Mountains (Schempf and White 1977). The species uses large areas of mature, dense forest, and prefers coniferous forests and deciduous riparian habitats with high canopy closure (California Department of Fish and Game 2003). The fisher uses cavities, snags, logs, and rocky areas for cover and dens. In California, Pacific fisher primarily inhabits mixed conifer forests composed of Douglas fir and associated conifers, although they also are encountered in higher elevation red fir and lodgepole pine forests.

The most recent record of Pacific fisher in the vicinity of the Project area is a single animal that was observed by employees of California Department of Fish and Game in 1986. The location of this observation was east of Mount Shasta approximately 4 miles south of Weed, California (California Department of Fish and Game 2003). The Project area does not include any potential habitat for the Pacific fisher, and the species does not occur within or in the vicinity of the proposed Project.

Prairie Falcon (*Falco mexicanus*) - The prairie falcon is an uncommon resident and migrant that ranges from southeastern deserts northwest along the inner Coast Ranges and Sierra Nevada. The species occurs in a variety of annual grasslands to alpine meadows, but is primarily associated with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas (Polite and Pratt 1983). The species forages in open terrain and nests in on canyons, cliffs, escarpments, and rock outcrops. Nests are usually constructed in a scrape on a sheltered ledge of a cliff overlooking a large, open area.

The prairie falcon is known to occur in the vicinity of the Project area. There is one historic record of a nest in the vicinity of the Project area, although the specific location of this nest is confidential (California Department of Fish and Game 2003). No potential nesting habitat was identified within the Project area during field surveys. However, the Project area does contain grassland and cropland habitats and the prairie falcon is likely forage in this area.

Sierra Nevada Red Fox (*Vulpes vulpes necator*) - The Sierra Nevada red fox is distributed from the Cascade Mountains south into the Sierra Nevada Range. Relatively little is known of the life history of the Sierra Nevada red fox, but it is assumed that its habits are similar to those of other red foxes. Sightings of the subspecies have been reported from between 5,000 to 7,000 feet elevation. The Sierra Nevada red fox utilizes a variety of habitats from wet meadows to forested areas. Preferred habitat types include red fir, lodgepole pine, subalpine fir, and mixed conifer types (Schempf and White 1977).

The lone record of Sierra Nevada red fox in the vicinity of the Project area is a single juvenile male that was captured by A.S. Bunnell in July 1904. The location of this capture was given only as "Mt. Shasta" at an elevation of 7,000 feet (California Department of Fish and Game 2003). The Project area does not include any potential habitat for the Sierra Nevada red fox, and the species does not occur within or in the vicinity of the proposed Project.

Swainson's Hawk (*Buteo swainsoni*) - Historical records indicate the existence of breeding populations of Swainson's hawk in open habitats throughout California, including a small population in the Shasta Valley (Woodbridge 1998). The Swainson's hawk is currently locally

common to rare breeders in California, with the largest populations in the Central and northern San Joaquin Valleys. The Swainson's hawk inhabits a variety of open habitats, ranging from prairie and shrub-steppe to desert and intensive agricultural systems that support abundant small rodent populations. The hawks construct open platform nests in a variety of deciduous tree species, and nests can be located in riparian forest, planted windbreaks, shade trees at residences and along roadsides, and solitary upland oaks (Woodbridge 1998). They will also occasionally nest in large shrubs in sage-steppe habitats.

There are numerous records of Swainson's hawk within the Shasta Valley (California Department of Fish and Game 2003). The area contains extensive foraging habitat and a nest site was documented in a black walnut tree surrounded by alfalfa and grain fields (California Department of Fish and Game 2003). The Swainson's hawk is known to occur and breed in the vicinity of the Project area. No nests or potential nest sites were identified within the project area during the field reconnaissance. However, the Project area does contain grassland and cropland habitats and the Swainson's hawk is likely forage in this area.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) - Historically, the yellow-billed cuckoo was a common breeding species in riparian habitat throughout much of California, including small populations along the Shasta River in Siskiyou County (Grinnell 1915). By 1944, the yellow-billed cuckoo had been eliminated from extensive areas "because of removal widely of essential habitat conditions" (Grinnell and Miller 1944). Breeding populations of greater than five pairs are currently limited to the Sacramento River and the South Fork Kern River. There are several other sites in southern California where small populations of cuckoos (<5 pairs) breed or possibly breed (Laymon 1988b). The yellow-billed cuckoo nests in riparian forest habitats along the floodplains of large river systems. Nests are typically built in willow, cottonwood, box elder, and alder trees, but have also been found in riparian willow-cottonwood habitats with blackberry, nettle, and wild grape understory.

There is one historic record of yellow-billed cuckoo along Shasta River in the vicinity of the proposed transmission line (California Department of Fish and Game 2003). One individual was collected and several others were observed along the Shasta River approximately 4 miles northwest of Weed, California in 1899. Subsequent observations of the yellow-billed were also made in this area in 1920, and it is thought that the species birds may have nested in the willows, alders, and birch along the river at that time (California Department of Fish and Game 2003). No observations have documented recent cuckoo presence along the Shasta River (California Department of Fish and Game 2003).

The location at which the transmission line crosses the Shasta River represents marginal potential habitat for the yellow-billed cuckoo. While the riparian community does contain some relatively sparse trees (willow and box elder) and blackberry-wild grape jungle, it is a fairly narrow and discontinuous habitat that has been affected by cattle grazing. The yellow-billed cuckoo is not likely to occur in the Project area.

Table 6-2 Special Status Wildlife Species that may Occur in the Project Corridor

Scientific Name	Federal Status	CA Status	CDFG Status	Probability of Occurrence	Pre-construction survey required*
bald eagle (<i>Haliaeetus leucocephalus</i>)	Threatened	Endangered	None	Transient individuals	No
California red-legged frog (<i>Rana aurora draytonii</i>)	Threatened	None	SC	Does not occur	No
Central Valley steelhead (<i>Oncorhynchus mykiss</i>)	Threatened	Threatened	None	Does not occur	No
Central Valley fall/late-fall chinook salmon (<i>Oncorhynchus tshawytscha</i>)	Candidate	None	None	Does not occur	No
Central Valley spring-run chinook salmon (<i>Oncorhynchus tshawytscha</i>)	Threatened	Threatened	None	Does not occur	No
winter-run chinook salmon (<i>Oncorhynchus tshawytscha</i>)	Endangered	Endangered	None	Does not occur	No
delta smelt (<i>Hypomesus transpacificus</i>)	Threatened	Threatened	None	Does not occur	No
Lost River sucker (<i>Deltistes luxatus</i>)	Endangered	Endangered	None	Does not occur	No
marbled murrelet (<i>Brachyramphus marmoratus</i>)	Threatened	Endangered	None	Does not occur	No
mardon skipper (<i>Polites mardon</i>)	Candidate	None	None	Does not occur	No
northern spotted owl (<i>Strix occidentalis caurina</i>)	Threatened	None	None	Does not occur	No
Oregon spotted frog (<i>Rana pretiosa</i>)	Candidate	None	SC	Does not occur	No
Pacific fisher (<i>Martes pennanti pacifica</i>)	Candidate	None	SC	Does not occur	No
Shasta crayfish (<i>Pacifastacus fortis</i>)	Endangered	Endangered	None	Does not occur	No
shortnose sucker (<i>Chasmistes brevirostris</i>)	Endangered	Endangered	None	Does not occur	No
S. Oregon/N. California coho salmon (<i>Oncorhynchus kisutch</i>)	Threatened	Threatened	None	Does not occur	No
western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	Candidate	Endangered	None	May occur	Yes
American badger (<i>Taxidea taxus</i>)	None	None	SC	Known to occur	Yes
bank swallow (<i>Riparia riparia</i>)	None	Threatened	None	Does not occur	No
Cascades frog (<i>Rana cascadae</i>)	None	None	SC	Does not occur	No
greater sandhill crane (<i>Grus canadensis tabida</i>)	None	Threatened	None	Known to occur	Yes
northwestern pond turtle <i>Emys</i> (= <i>Clemmys marmorata</i>)	None	None	SC	Not likely to occur	No
prairie falcon (<i>Falco mexicanus</i>)	None	None	SC	May occur	No
Sierra Nevada red fox (<i>Vulpes vulpes necator</i>)	None	Threatened	None	Does not occur	No
Swainson's hawk (<i>Buteo swainsoni</i>)	None	Threatened	None	Known to occur	Yes

*Pre-construction survey requirements were determined through a review of available literature, Status Reviews, Recovery Plans, habitat assessments, and discussions with CDFG biologists.

6.2.2 Important Wildlife Habitats

The Project corridor does not cross any wildlife migration corridors (Bob Shafer, California Fish and Game, personal communication) and will not interfere with any wildlife movements. Based upon the nature of the Project and the absence of any migratory corridors in the Project area, the proposed Project will not interfere substantially with either the movement of any native resident or migratory fish or wildlife species or established native resident or migratory wildlife corridors.

The southern portion of the Project (south of structure 4/44) is located within mule deer winter range (Bob Shafer, California Fish and Game, personal communication). During severe winter conditions, mule deer from the Mount Shasta area utilize the lower elevation habitats within the Project area.

6.2.3 Local Policies or Ordinances

The Conservation Element of the Siskiyou County General Plan includes general objectives relating to biological resources. These objectives include 1) “to preserve, protect and manage the Forest Lands as both wild habitat and a productive economic resource” and 2) “to preserve and maintain streams, lakes and forest open space as a means of providing natural habitat for species of wildlife”. The proposed Project will comply with these general objectives by: 1) utilizing the existing right-of-way for the majority of the Project, 2) completely avoiding construction on forest lands and near lakes, and 3) spanning sensitive areas such as wetlands, riparian zones, and streams. Therefore, no conflict with local policies or ordinances will result from the proposed Project.

6.2.4 Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional, or State Habitat Conservation Plans

There are no Habitat Conservation Plans or other approved governmental habitat plans that involve lands within the Project area (Brian Woodbridge, U.S. Fish and Wildlife Service-Yreka Field Office, personal communication). No conflict with habitat conservation plans will result from the proposed Project.

6.2.5 Wetlands and Water Resources

The riparian areas along the Shasta River and a small side channel of the Shasta River represent the only sensitive natural communities that will be crossed by the proposed transmission. At the point of crossing, the Shasta River riparian zone is approximately 30 feet wide, and contains small willow and alder trees. The side channel crossing is located approximately 200 feet north of the Shasta River. The side channel riparian zone is approximately 20 feet wide, and supports blackberry, nettles, and wild grape. The new transmission line will span both of these riparian areas, and no access roads will be constructed within the riparian zones. The proposed Project will not result in any adverse effects to the riparian communities.

It appears that there are potential wetlands located within the Project corridor based upon the results of initial field investigations and hydric soil data. These areas include wet meadows, possibly from springs and seeps, located east of Hoy Road near the southern end of the Project corridor. Additional areas are located in the vicinity of the proposed new 115 kV transmission line and from approximately structure 21/44 and 10/45. Potential wetlands also occur in the vicinity of Garrick Creek (structures 1/43 to 16/43) and Parks Creek (18/39 to 6/40). Within the Project corridor, a potential wetland also occurs the vicinity of the Shasta River crossing, between structures 2/41 and 2/42. Another possible wetland occurs near an unnamed creek from structure 5/39 to 8/39. Finally, potential wetlands are interspersed throughout the vicinity of McCloud Slough, from approximately structure 16/32 to 13/35 (refer to Figure 2-4 for the location of specific structures).

6.3 Environmental Impacts

This section analyzes the potential for biological impacts to result from:

- construction of substation improvements;
- construction of new access roads and improvement of existing roads;
- installation of stream crossing structures on access roads;
- vegetation clearing and grading of pulling sites;
- operation of Project vehicles and heavy equipment;
- installation of new transmission poles and removal of existing poles;
- installation of new conductors; and
- long-term operation and maintenance of the new transmission line.

The potential for biological impacts depends primarily on the proximity and quality of natural vegetation and wildlife habitats, the presence of special-status plant or animal species, and the effectiveness of measures instituted to protect these habitats and species from Project effects. Potential impacts to biological resources are separated into direct and indirect impacts (both short- and long-term) that could result from construction activities and those that could occur as a result of substation and transmission line operation and maintenance. Recommended measures to avoid and mitigate construction impacts are described in section 6.3.2.

6.3.1 Significance Criteria

Significance criteria for impacts to biological resources are based on Section 15382 and Appendix G of the State CEQA Guidelines (CCR Title 14, Sections 15000 et seq.). A project is considered to have a potentially significant impact to biological resources if it will:

- have a substantial adverse effect, either directly or through habitat modification, on any species identified as endangered, threatened, proposed, candidate, sensitive, or special-status by the USFWS, CDFG, or in local or regional plans, policies, or regulations;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified by the USFWS, CDFG, or in local or regional plans, policies, or regulations;
- have a substantial adverse effect on federally protected wetlands or Waters of the U.S. as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species, with established native resident or migratory wildlife corridors, or with the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other governmental habitat conservation plan.

In addition, activities that result in the introduction or spread of a noxious weed or substantially increase the dispersal and spread of existing populations of noxious weeds such that an existing plant community or wildlife habitat is substantially degraded could result in a potentially significant impact to biological resources.

6.3.2 Potential Impacts and Mitigation Measures

This section describes potential construction impacts to biological resources and mitigation measures that will reduce all impacts to a less than significant level.

As part of PacifiCorp's standard construction practice, the following measures will be incorporated into the Project and will be implemented to avoid or minimize impacts to biological resources:

- Prior to construction, all supervisory construction personnel will be instructed on the protection of ecological resources. To assist in this effort, the construction contract will address: (a) federal and state laws regarding plants and wildlife; (b) the importance of these resources and the purpose and necessity of protecting them; and (c) methods for protecting sensitive resources.
- The boundaries of sensitive plant populations will be delineated with clearly visible flagging or fencing based on surveys completed prior to construction. If avoidance or relocation were not practical, the topsoil surrounding the plants will be salvaged, stored separately from subsoil and spread during the restoration process.
- Prior to construction, PacifiCorp will develop a Noxious Weed and Invasive Plant Control Plan in consultation with Siskiyou County to minimize the effects of noxious weeds due to Proposed Project activities. The plan will address any required cleaning of construction vehicles to minimize spread of noxious weeds and invasive plants.
- Ground disturbance will be limited to that necessary to safely and efficiently install the proposed facilities.
- With the exception of emergency repair situations, construction, restoration, maintenance, and termination activities in designated areas will be modified or curtailed during sensitive periods (e.g., nesting and breeding periods) for candidate, proposed, threatened, and endangered, or other sensitive animal species.
- All waste products and food garbage from construction sites will be deposited in covered waste receptacle, or removed daily. Garbage will be hauled to a suitable disposal facility.
- Inspections for trapped or injured wildlife on all work areas will be conducted daily.
- Construction personnel will be instructed to avoid harming any special status species.
- In order to minimize the potential effects to Coho salmon, soil disturbance will be minimized and erosion control measures will be implemented to prevent sediment from entering waterways including Parks Creek and the Shasta River.
- In order to minimize the potential disturbance of badger dens and associated badger mortality, pre-construction den surveys will be conducted by a qualified biologist throughout the Project corridor. All badger dens identified by these surveys will be marked in the field to minimize the potential for disturbance by construction equipment. Where necessary, structures and access roads will be redesigned and/or relocated to avoid badger dens.
- In order to minimize the potential for raptor electrocution, the transmission line will utilize a raptor-safe design in accordance with APLIC standards.
- In order to minimize the potential for disturbance of sandhill cranes, pre-construction sandhill crane nest surveys will be conducted by a qualified biologist throughout the Project corridor between March and June. All nests identified during these surveys will be located by GPS, and no construction activities will occur within ½ mile of active nests between March 15 and July 15.

- In order to minimize the potential for disturbance of bald eagles in the Project area, construction crews will be instructed to halt activities whenever an eagle is observed within 800 yards of the construction area. Construction activities will not be permitted to resume until the eagle leaves the area.
- Pre-construction yellow-billed cuckoo surveys will be conducted by a qualified biologist in accordance with standardized survey protocol (Laymon 1998a) to determine the species presence and nesting status in the Project area. These surveys will concentrate on the Shasta River riparian crossing. If surveys reveal that the yellow-billed cuckoo are present and nesting in the vicinity of the proposed Project, no construction will be permitted within 800 yards of the active nest site(s) between May 1 and August 1.
- Construction of the transmission line and access roads within mule deer winter range (south of structure 4/44) will not be permitted between November 15 and March 15 to minimize the potential for mule deer disturbance and/or displacement.
- Sensitive plant surveys will be conducted by a qualified botanist at the appropriate time of the year when target species are present and identifiable. Surveys will be conducted within the proposed Project corridor and any appurtenant impact zones beyond the corridor, such as access roads and pull sites. Specific mitigation measures will be developed and implemented to mitigate any adverse impacts to sensitive plants. These may include Project modifications to avoid adverse impacts, monitoring of construction activities, or data recovery studies.
- Roads will be built at right angles to the streams and washes to the extent practicable. Culverts will be installed where needed. All construction and maintenance activities will be conducted in a manner that will minimize disturbance to drainage channels, and stream banks.
- Wetland surveys will be conducted during the appropriate season to identify and inventory wetland resources potentially affected by the proposed Project. In consultation with appropriate agencies, site specific avoidance and mitigation strategies will be developed and implemented to minimize potential wetland impacts.

Substation Impacts

Upgrades to the Lucerne substation would occur within the graveled area inside the existing fence. No habitat for special-status wildlife species exists at this site. No significant impacts to vegetation, special-status plants, or wildlife will occur from expansion of the substation.

Transmission Line Impacts

The proposed Project will not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species. With the exception of a small section at the extreme southern end of the Project area, the entire Project will involve replacement of an existing transmission line. The new structures will be slightly taller than the current structures, but the new line will be located along the same centerline as the existing line. While construction may result in the temporary disturbance of individual animals in the vicinity of the Project area, this will be a short-term affect.

The Project will result in the permanent disturbance of 11.73 acres. Permanent disturbance is primarily associated with access road construction; however a small amount of permanent disturbance (> 0.001 acres) will occur through new pole excavation in the extreme southern end of the Project area. Table 6-3 presents permanent and temporary disturbance by habitat type. The proposed Project will not result in the loss of any sensitive habitats (i.e., riparian areas). The communities that will be disturbed are fairly common in the region, and vegetative disturbance associated with this Project will not represent a significant loss of habitat. The proposed Project

has been designed to minimize disturbance. For the majority of the Project, new transmission line poles will be located in the same hole as the existing poles. Wherever possible, access for construction will utilize existing roads or trails. Where new access roads are required, they will be located so as to minimize clearing and avoid forested or riparian communities.

Table 6-3 Disturbance by Vegetative Community Type (acres)

Community Type	Permanent Disturbance	Temporary Disturbance
Annual Grassland	6.55	6.56
Pasture	4.61	0.46
Eastside Pine	0.57	0.27
Total	11.73	7.29

Wetlands and Aquatic Resources

Potential impacts to wetlands and other aquatic resources will be less than significant with implementation of mitigation measures. Several poles of the existing transmission line appear to be located within potential wetland areas. However, in order to avoid impacts to wetland areas, all jurisdictional wetlands within the Project corridor will be delineated by a certified wetland delineator prior to the initiation of construction. Final design of the transmission line and access roads will incorporate the results of the wetland delineation, and the Project will be designed to avoid disturbance of any wetland. Where complete avoidance is not feasible due to engineering constraints, the area of wetland disturbance will be minimized by altering specific locations of transmission poles and access roads. Prior to any wetland disturbance, all appropriate permits will be obtained in accordance with Section 404 of the Clean Water Act. With the mitigation described above, the proposed Project would not have a significant impact on federally protected wetlands.

Appropriate site-specific erosion control measures will be used. Erosion control measures could include tacked straw, erosion control fabrics, silt fencing, and graded bedding on roads. After construction is complete, follow-up monitoring will be conducted to ensure that installations made during construction to control erosion and sedimentation, and to achieve any other protection measures, remain in place. Any direct or indirect impacts (e.g., fuel spills, sedimentation and erosion impacts) will be mitigated through appropriate spill cleanup, sediment, and erosion control measures.

Special-status Plants

In order to minimize potential adverse effects to special status plant species, pre-construction surveys will be conducted by a qualified botanist for those species likely to occur in the Project area (Table 6-1). It is anticipated that areas with sensitive plants could be avoided. Locations of sensitive plants will be marked in the field and transmission poles and access roads will be located to avoid marked areas, and construction workers will be instructed to avoid disturbance of marked areas. The proposed Project will not have a significant impact, either directly or through habitat modifications, on any special status plant or wildlife species.

Introduction or Spread of Invasive Plants

Construction activities that cause ground disturbance have the potential to spread weeds that are already locally established into areas that do not presently contain them. New weed species could also be transported into the Project area (at all locations where on-the-ground Project activities take place) in the form of weed seed or other propagules carried on vehicles and construction equipment. New weed populations could become established in sites disturbed during

construction, especially along roads, in staging areas and other temporary use areas, and in locations where poles will be removed and replaced.

Specific weed control measures will be implemented to reduce potential impacts to a less than significant level. During construction, management practices will be implemented that reduce the likelihood of spreading already established weeds into new areas or increasing their abundance, and of introducing new weed species to the Project area. These management practices will include using construction equipment that has been cleaned of soil and plant parts, including seeds, before entering the Project area, using weed-free straw for erosion control and doing a post-construction survey for new weeds in areas that were disturbed during construction. If weed populations not previously found adjacent to Project-disturbed areas are found following construction, these will be controlled using the most effective and least environmentally harmful methods. Implementing management practices described above will reduce potential adverse impacts from non-native invasive plants to a less than significant level.

Special-status Wildlife Species

Southern Oregon/Northern California Coho Salmon (*Oncorhynchus kisutch*) – The proposed Project could potentially effect Coho salmon through sedimentation of spawning habitat in Parks Creek and the Shasta River. In order to minimize the potential effects to Coho salmon, soil disturbance will be minimized and erosion control measures will be implemented at stream crossings to prevent sediment from entering waterways. The Project has been designed to avoid disturbance of streambeds, stream banks, and riparian vegetation. These mitigation measures would eliminate the potential for impacts to Coho salmon.

American Badger (*Taxidea taxus*) - The proposed Project could potentially affect badgers through disturbance during construction and the loss of grassland foraging and den habitat. Construction activities will likely result in the temporary displacement of individual badgers that occur in the vicinity of the proposed Project. These displacement effects will be temporary, and will only last for a few days until construction is completed and construction crews move on to others areas. Construction of the transmission line and associated access roads will result in the loss of approximately 11.16 acres of potential badger foraging habitat, and could potentially disturb active badger dens. In order to minimize the potential disturbance of badger dens and associated badger mortality, pre-construction den surveys will be conducted by a qualified biologist throughout the Project corridor. All badger dens identified by these surveys will be marked in the field to minimize the potential for disturbance by construction equipment. Where necessary, structures and access roads will be redesigned and/or relocated to avoid badger dens. This mitigation will eliminate the potential for significant impacts to badger populations.

Bald Eagle (*Haliaeetus leucocephalus*) - Potential effects to the bald eagle include construction-related disturbance and mortality due to collisions with conductors and electrocution. The Project area does not contain any potential nesting, roosting, or foraging habitat for the bald eagle, and no eagle nests or roosts will be affected by the proposed Project. Given the proximity of the proposed Project to Lake Shastina and the existing nest, bald eagles may occasionally fly through the proposed Project corridor. Activities related to construction of the transmission line, including pole setting and conductor stringing, could disturb eagles in the vicinity of the proposed transmission line due to increased vehicular traffic, human activity, and noise. Given the fact that eagles may occur, there is potential for disturbance and temporary displacement of bald eagles associated with the proposed Project. In order to minimize the potential for disturbance of bald eagles in the Project area, construction crews will be instructed to halt activities whenever an eagle is observed within 800 yards of the construction area. Construction activities will not be permitted to resume until the eagle leaves the area. The proposed Project will not significantly affect the habitat or prey base of the bald eagle.

Transmission line strikes are generally not considered to be an important cause of bald eagle mortality (Faanes 1987, APLIC 1994). Raptors are highly maneuverable, soar relatively slowly, and generally do not fly together in large flocks. Because of these flight characteristics, raptors are seldom involved in collisions with transmission lines or structures (APLIC 1994). The greatest potential for transmission line strikes by bald eagles occurs when a line crosses a major water body (Faanes 1987). The proposed transmission line does not cross any major waterways, nor does it cross through any habitats that support concentrations of prey that will attract bald eagles. There have been no documented cases of bald eagle collisions with the existing transmission line. The potential for bald eagle mortality through collisions with lines or structures is negligible given the species flight characteristics and ability to avoid lines and structures, the limited use of the Project area by bald eagles, and the presence of an existing transmission line in this area.

Research has found that raptor electrocutions on high voltage lines (greater than 69kV) are extremely rare and generally do not cause mortality (APLIC 1996). A study of more than 500 avian electrocutions found that only one occurred on a transmission line larger than 69kV (APLIC 1996). This is due to the conductor spacing on higher voltage lines, which exceeds the wingspan of raptors and precludes birds from making contact with two conductors simultaneously. Nevertheless, the proposed transmission line design will incorporate a raptor-safe configuration in accordance with APLIC standards (APLIC 1996). PacifiCorp's Bird Management Program Policy requires that all new or rebuilt lines located in rural areas (areas outside city limits or beyond residential/commercial developments) are built to raptor-safe standards. The proposed configuration will eliminate the potential for adverse impacts to bald eagles as well as other raptor species.

Greater Sandhill Crane (*Grus canadensis tabida*) - Potential effects to the sandhill crane include loss of foraging habitat, construction-related disturbance, and mortality due to collisions with conductors. The proposed Project will result in the loss of a small amount of potential foraging habitat (11.16 acres) for the sandhill crane. Although the Project will not physically disturb sandhill crane nesting or roosting habitat, the California Department of Fish and Game recommends no noise or human activity within ½ mile of an active sandhill crane nest (Bob Williams, California Department of Fish and Game-Redding Office, personal communication). In order to minimize the potential for disturbance of sandhill cranes, pre-construction sandhill crane nest surveys will be conducted by a qualified biologist throughout the Project corridor between March and June. All nests identified during these surveys will be located by GPS, and no construction activities will occur within ½ mile of active nests from March 15 through July 15. This mitigation measure will minimize the potential to disturb nesting sandhill cranes.

Power line collisions are presently believed to be the primary mortality factor for all age classes of post-fledged cranes. The majority of mortalities occur on wintering areas; however, five adult cranes died from power line collisions in Modoc County in 1988 (California Department of Fish and Game 1994). There have been no documented cases of sandhill crane collisions with the existing transmission line. The majority of the proposed Project involves the replacement of the existing line with a similar one and, as such, would not increase the potential for collisions. Should collisions be documented following completion of the new line, markers could be placed on conductors at specified locations to increase conductor visibility. Power line markers (orange plastic globes) placed at key locations were successful in eliminating collisions and mortality at Modoc National Wildlife Refuge (California Department of Fish and Game 1994).

Northwestern Pond Turtle (*Emys (=Clemmys) marmorata*) - The only potential habitat for the northwestern pond turtle in the vicinity of the proposed Project is the side channel of the Shasta River. The proposed Project will not affect the side channel or associated riparian habitat. Therefore, there will be no potential for any adverse effects to the northwestern pond turtle.

Prairie Falcon (*Falco mexicanus*) - The proposed Project will result in the loss of a small amount of potential prairie falcon foraging habitat (11.16 acres), but will not affect any prairie falcon nests or potential nesting habitat. The proposed Project will not adversely affect the prairie falcon.

Swainson's Hawk (*Buteo swainsoni*) - Potential effects to the Swainson's hawk include loss of foraging habitat and mortality due to collisions with conductors and electrocution. The proposed Project will result in the loss of a small amount of potential Swainson's hawk foraging habitat (11.16 acres), but will not affect any Swainson's hawk nests or potential nesting habitat. This loss of habitat will not result in a significant adverse effect upon the Swainson's hawk.

Transmission line strikes are generally not considered to be an important cause of raptor mortality (Faanes 1987, APLIC 1994). Raptors are highly maneuverable, soar relatively slowly, and generally do not fly together in large flocks. Because of these flight characteristics, raptors are seldom involved in collisions with transmission lines or structures (APLIC 1994). The proposed transmission line does not cross through any habitats that support concentrations of prey that will attract the Swainson's hawk. Additionally, the proposed Project represents the replacement of an existing transmission line, and there have been no documented case of collisions with the existing line. The potential for Swainson's hawk mortality through collisions with lines or structures is negligible given the species flight characteristics and ability to avoid lines and structures and the presence of an existing transmission line in this area.

Research has found that raptor electrocutions on high voltage lines (greater than 69kV) are extremely rare and generally do not cause mortality (APLIC 1996). A study of more than 500 avian electrocutions found that only one occurred on a transmission line larger than 69kV (APLIC 1996). This is due to the conductor spacing on higher voltage lines, which exceeds the wingspan of raptors and precludes birds from making contact with two conductors simultaneously. Nevertheless, the proposed transmission line design will incorporate a raptor-safe configuration in accordance with APLIC standards (APLIC 1996). PacifiCorp's Bird Management Program Policy requires that all new or rebuilt lines located in rural areas (areas outside city limits or beyond residential/commercial developments) are built to raptor-safe standards. The proposed configuration will eliminate the potential for adverse impact for the Swainson's hawk as well as any other raptor species.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) - The Shasta River crossing represents marginal potential habitat for the yellow-billed cuckoo. While the proposed Project has been designed to avoid disturbance of the Shasta River riparian habitat, construction activities in the vicinity of this riparian area could potentially disturb individual yellow-billed cuckoos that inhabit the area. Pre-construction yellow-billed cuckoo surveys will be conducted by a qualified biologist in accordance with standardized survey protocol (Laymon 1998a) to determine the species presence and nesting status in the Project area. These surveys will concentrate on the Shasta River riparian crossing. If surveys reveal that the yellow-billed cuckoo are present and/or nesting in the vicinity of the proposed Project, no construction will be permitted within 800 yards of the active nest site(s) between May 1 and August 1. In addition to mitigation described above, additional measures developed during the consultation period under Section 7 of the ESA (1973) as amended will be adhered to. The proposed Project will not result in any adverse effects to the yellow-billed cuckoo with the implementation of the identified mitigation measures.

Important Wildlife Habitats

The southern portion of the Project (south of structure # 4/44) is located within mule deer winter range (Bob Shafer, California Fish and Game, personal communication). Mule deer from the Mount Shasta area utilize this portion of the Project area during severe winter conditions. The proposed Project will result in a small amount of habitat loss within the deer winter range (2.9

acres) as a result of access road construction. However, this disturbance will not adversely affect the quality or availability of winter range forage. Construction of the transmission line and access roads within mule deer winter range (south of structure 4/44) will not be permitted between November 15 and March 15 to minimize the potential for mule deer disturbance and/or displacement. The proposed Project will not result in any significant adverse effects to mule deer or winter range with the implementation of the identified mitigation measures.

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CHAPTER 7 CULTURAL RESOURCES

7.1 Introduction and Methodology

The methods used to evaluate impacts to cultural resources included a literature review, and reviews of cultural resource site records and historic maps located at the Northeast California Information Center (NEIC), Department of Anthropology, California State University, Chico. The literature search included a review of the National Register of Historic Places and the California Register of Historic Sites and Landmarks.

Cultural resources include prehistoric and historic archaeological sites, districts, and objects; standing historic structures, buildings, districts, and objects; and locations of important historic events, or sites of traditional cultural properties. Prehistoric resources include sites, features, and artifacts associated with indigenous Californians, prior to contact with people of European descent. Historic resources include structures, features, artifacts, and sites that date from Euro American settlement of the region. The NEIC was utilized for a literature and archival records search pertaining to previously recorded cultural sites and surveys in the Project area. In addition, letters requesting information regarding the Project area were sent to the Native American Heritage Commission and 16 Native American individuals or organizations which might have knowledge of the area (see Appendix G).

The NEIC search included examination of background historic resources such as:

- Office of Historic Preservation Historic Property Directory,
- California Historic Landmarks (1996),
- National Register of Historic Places (NRHP) (1996 and 2000),
- California Points of Historical Interest (1992 and updates),
- California Register of Historical Resources (CRHR), and
- GLO Plat maps.

Sixteen surveys have been conducted in the general region of the Project area, but none have included more than minor coverage of any Project segment. Therefore, an archaeologist that meets the Secretary of the Interior Standards examined the entire Project route. This pedestrian survey was conducted on September 9 and 10 of 2005.

7.1.1 Prehistoric Background

This section describes human occupation in a chronological or taxonomic order in the Project area. The Project area is situated within a portion of the Shasta Valley that was occupied by different cultures from the "Early Horizon" to the proto-historic period, and is within the ethnohistoric territory of the Hokan-speaking Achumawi and Shastan peoples, and the Penutain-speaking Wintu peoples.

Early Horizon (9000 B.C. to 2000 B.C.)

Evidence of early Post-Pleistocene occupation of this region, including what has been called the Early Horizon, is generally lacking in the area bordering Shasta Valley. Wallace (1978) breaks this part of the cultural sequence into three periods based on evidence of the shift in the general subsistence pattern of each area of California between 9000 and 2000 B.C.

Period I - The first period (Period I), beginning in 9000 B.C., is dominated by a hunting strategy, with groups moving frequently to follow the seasonal migrations of large game. Evidence of this

subsistence strategy is manifest in sites containing large atlatl or spear points, generally having light refuse deposits, and lacking evidence of dwellings and ground stone tool technology. This period persists in most parts of California until around 6000 B.C.

Period II - Period II begins around 6000 B.C. with a shift in the general subsistence strategy to include wild plant food collection as a significant part of the diet. The importance of wild plant foods during this period is evident in the increasing numbers of grinding implements, especially mealing slabs and mullers, found at sites dating between 6000 and 3000 B.C. (Wallace 1978).

Sites dating to this period are not well represented in the northern portion of the state. In fact, only one site exhibiting evidence of this shift has been documented in the Sacramento Valley (Wallace 1978). Aside from flaked stone debitage and an array of large, stemmed dart points that are the hallmark of this period, this site contained a large quantity of hand stones, comprising approximately 35 percent of the overall assemblage.

Documented evidence of a diversification of food resources in the northern part of the state does not appear dominant until the appearance of Mesilla Complex sites in the Sierra Nevada Mountains sometime around 3000 B.C. Mesilla Complex sites, like contemporary sites elsewhere in the state, are characterized by heavy stemmed or side-notched dart points, bone artifacts, flexed burials, and pestle and mortar grinding implements (Wallace 1978).

Period III - According to Wallace (1978), broad changes became evident in the prehistoric subsistence pattern again after 3000 B.C., with adaptation to the region's natural environment leading to wider exploitation of available food resources and greater subsistence efficiency. In the Sacramento Valley area and at the foothills of the Sierra Nevadas, this shift is characterized by the "Windmill" people, who inhabited these areas between 3000 and 2000 B.C. The Windmill tradition is characterized in the archeological record by a continuation of atlatl dart technology, use of mortar and pestle implements and the addition of small numbers of milling stones and mullers into the toolkit, a reduction of bone tools, an increased appearance of marine shell beads and pendants, the appearance of baked clay objects possibly used as baking stones, and a shift from flexed burial positions to an extended face-down position. This period continued until approximately 2000 B.C.

Middle Horizon (2000 B.C. to 800 A.D.)

The Middle Horizon, or the Transitional Horizon as discussed by Heizer (1941), is characterized by the development of regional prehistoric cultural traditions sometime around 2000 B.C. (Elsasser 1978). Although the tradition appears slightly later, Middle Horizon sites in the southern Cascades follow a similar pattern to those in the Redding area, following the shift to increased diversification in the subsistence pattern of the time. In the Upper Pit River area, sites characteristically have a large amount of marine shell jewelry, exhibit a shift to smaller stemmed and serrated point styles and sometimes contain Desert Side Notched varieties, and appear to revert back to the practice of flexed position inhumations (Elsasser 1978).

The Kingsley Cave Site (CA-TEH-1) is characteristic of an early Middle Horizon occupation, with possible later Martis Complex and Late Horizon components. Early cultural levels of the site contained manos and metates; flat-ended pestles and hopper mortars; basalt Martis Complex-style, large-stemmed, and corner-notched points; some marine shell jewelry, and burials interred in the flexed position (Baumhoff 1955; Elsasser 1978; Johnson 1973).

The Martis Complex has been described as a high-elevation seasonal hunting and seed gathering culture that occupied the area east of the main crest of the Sierra Nevada Range. Martis Complex sites are largely defined based on radiocarbon evidence and the appearance of Elko Eared and Elko Corner Notched points. Elston (1971) suggests that the Martis Complex had its beginning sometime around 1000 B.C. Based on the lack of stratification of deposits at some sites

containing both Martis Complex and Maidu components, a transition from the prehistoric group to the ethnographic Maidu has been suggested (Elsasser 1978).

Succeeding cultures after the Martis Complex retain some traits of their predecessors, including manos and metates as grinding implements, large basalt drills, and large projectile points primarily of basalt. By A.D. 800, Martis traits had disappeared completely from sites in some parts of northern California (Elsasser 1978).

Late Horizon (1000 B.C. to A.D. 1000)

This cultural horizon includes the period of time just before and continuing after contact with European settlers. Based on current evidence of proto historic patterns, it is suggested that cultures were entrenched in local traditions by at least A.D. 1000 and possibly as early as A.D. 500 (Elsasser 1978; King 1978). The Late Horizon represents a continuation of the previous traditions occurring prior to European contact and continuing as late as the mid-nineteenth century. This cultural horizon is split into three phases: pre-contact, proto historic, and historic (post-contact) (Heizer 1941).

Phase 1 - Phase 1 represents a continuation of the cultural tradition at the end of the Middle Horizon following the disappearance of Martis Complex traits in the Sierra Nevada region. This phase is characterized primarily by a shift in burial practices, a continuation of similar projectile point types, manufacture of tubular stone pipes, continued use of *Haliotis* for shell ornament production, and the presence of *Olivella* beads (Elsasser 1978).

Phase 2 - Phase 2, the proto historic period, is roughly equivalent to the period of the same name that is used to describe most of central California (King 1978). The association of archeological sites with the proto historic period is primarily made based on the occurrence of prehistoric tool types with objects associated with European trade, as well as historic records and dates from coastal village sites. Radiocarbon dates from Phase 2 sites indicate a transition beginning around A.D. 1500. Projectile point types associated with the proto historic period in northern California include the Gunther Barbed variety, Desert Side Notched, Cottonwood Triangular, Stockton Serrated, and various other corner-notched varieties. Based on the later deposits found in rock shelter sites in the ethnographic Yana territory, a variety of shell ornaments, pine nut beads, and bedrock mortars are also common Phase 2 components in addition to the characteristics of the projectile point styles (Elsasser 1978).

Phase 3 - Phase 3 is followed by the historic period and Spanish missionization in many parts of California beginning around A.D. 1770 and ending around 1834 (King 1978). In the Project area, this phase has no clear breaks with the historic movement of Europeans into the area. Ethnographic and historic accounts describe a continued use of the area around the Project area by native groups into the twentieth century, with increasing contact between tribes and Europeans occurring later in the chronological sequence.

7.1.2 Ethnographic Background

The Project straddles the boundary of three ethnographic groups: the Achumawi, Shastan, and Patwin. The following briefly discusses these ethnographic groups.

Achumawi

The Achumawi, who are also known as the Pit River Indians, occupied the southeastern portion of the Project area. Their language is in the Palaihnihan branch of the Hokan linguistic family (Olmstead 1966). Researchers have allied Hokan with other languages, thus composing the Hokan-Coahuiltecan stock, and investigators have suggested that there are connections with Siouan and other widely distributed languages in North and Middle America.

The Achumawi occupied the Pit River watershed, bordered by the Warner Mountains to the east and to the northwest and southwest by Mount Shasta and Lassen Peak, respectively (Heizer 1978; Kroeber 1925). This group lived in a land of great relief with elevations ranging from 14,162 feet above sea level (Mount Shasta) to under 2,000 feet above sea level in parts of the Pit River Canyon. Despite a variety of habitats in their territory, the villages were situated along the Pit River in its lower tributaries (Kroeber 1925).

The Achumawi's subsistence relied on forest and grassland management; fishing for anadromous and resident fishes; catching mussels and crawfish; taking birds and eggs; and hunting deer, badgers, coyotes, antelope, and many other mammals. The wetland and aquatic environments were vital because they contributed a great percentage of food and shelter materials (Heizer 1978). They also dug for roots, tubers, bulbs, and invertebrates. Trees and sagebrush areas provided a wealth of berries, sap, and fuel for winter.

The Achumawi were organized into independently acting tribes that were otherwise connected by intermarriage and common language. These included Madesiwi, Itsatawi, Ilmawi, Ajumawi, Atwamsini, Astariwawi, Hammawi, Qosalektawi, and Hewisedawi (Heizer 1978). The neighbors of the Achumawi territory included the Modoc to the north, Northern Paiute to the east, Yana and Atsugewi to the south, and Shasta to the west.

Craft and technological pursuits included the manufacture of a variety of nets for catching birds, fishes, and mammals. Tules were used as shelter, groundcover, and for balsa rafts. Dugout canoes were also employed (Kroeber 1925). Since the Achumawi lacked stone adzes and axes, naturally felled trees were used to construct semi-subterranean winter houses (Heizer 1978). Twined fish traps and carrying baskets were made. The bow and arrow were used, and most of these were sinew-backed with obsidian arrow points.

Shastan

The northern portion of the Project area was occupied by the Shastan people. This was composed of four groups: Shasta, Konomihu, Okwanuchu, and New River Shasta (Heizer 1978). These groups spoke languages in a family of the Hokan phylum (Heizer 1978). Not much is known about the Konomihu, Okwanuchu, and New River Shasta.

The Shasta occupied land from around Jacksonville, Oregon, in a swath of land that roughly followed the southern upper Rogue River watershed southeast towards Beswick, California, encompassing parts of the upper Klamath River watershed, including Jenny Creek. This territory then widened westward toward Seiad Valley along the Klamath River watershed, then the limit headed south to the Salmon Mountains and to Callahan, California. The territorial limit then progressed eastward to Mt. Shasta and back north to Beswick. The Okwanuchu occupied portions of the upper Sacramento and McCloud watersheds south of Mt. Shasta and including the southeastern corner of the Shasta territory described above. The New River Shasta and Konomihu lived in an area surrounding Cecilville, to the southwest of the Shasta area described above, and surrounding the north, east, and south forks of the Salmon River as well as the upper New River watershed (Heizer 1978).

Food was plentiful in Shasta homeland. The prominent sources of animal foods included deer, bear, small mammals, birds, anadromous fishes, resident fishes, turtles, and invertebrates such as mussels, grasshoppers and crickets (Heizer, 1978). Men would hunt by tracking, driving, and smoking out game and would fish with hook and line, spear, and harpoon. Women would gather seeds, bulbs, roots, insects, and grubs and would also trap fish in baskets. Both men and women would collect acorns and pine nuts (Heizer 1978). They managed the land by burning to stimulate plant growth and by sowing seeds.

The fundamental social unit was a bilateral family with a patrilineal tendency (Heizer 1978). There were many villages that were composed of one family, and the larger villages had a

headman. Some ownership of land and resource exploitation areas was evident and applied to village territories, hunting and fishing areas, tobacco plots, and oak trees (Heizer 1978). Some variations of such ownership existed from place to place.

Structures of the Shasta included the rectangular dwelling house, the multi-family conical dwelling house, and the single-family bark house (Heizer 1978). They made baskets using both closed and open-work twining methods. Dugout canoes and tule rafts were sometimes used. The sinew-backed bow supplemented with composite arrows with obsidian tips or headless single-shaft arrows were used (Heizer 1978). They also employed hide stretching, cordage manufacture, bone working, and ground stone technology.

Wintu

The Wintu territory has been defined as occupying portions of modern Trinity, Shasta, Siskiyou, and Tehama Counties. The northern boundaries penetrate into the upper watersheds of the Trinity, McCloud, and Sacramento Rivers. The eastern limit is Cow Creek and continues northward from its headwaters. The southern edge follows Cottonwood Creek west towards the South Fork Trinity River northwest to near Hayfork Creek. The edge turns and heads northeast to intersect with the upper Trinity Watershed (Heizer 1978).

Wintu village life was based around a monogamous family unit. Village chiefs organized and made the final decisions concerning political and social events. The villages consisted of between four and several dozen conical bark houses, making up villages of 20 to 150 people. Villages were commonly centered around a semi-subterranean earthen lodge that could be occupied by up to 70 people (Heizer 1978).

The Wintu relied on hunting, fishing, and foraging for food. Women mainly gathered vegetation and carried water, and men procured meat. Acorns were the most important vegetable staple. Manzanita berries were commonly pounded into flour for soup or cider (Kroeber 1925). Each of these was processed by either mortar and pestle, or mano and metate (in the north). Other utilized vegetation included Indian potatoes, calochortus, snake's head, clover, miner's lettuce, skunk bush berries, hazelnuts, wild grapes, and sunflower and cotton flower seeds (Heizer 1978). Hunts were both communal and individual. The Wintu men pursued, drove, or snared deer. Black bears were usually hunted in the fall, when fat and sluggish. During the spring, salmon and steelhead were driven by torchlight and speared or caught in dip-nets. Other important protein sources included squirrels, rabbits, gophers, mice, quail, and grasshoppers (Heizer 1978).

Craft and technological pursuits included the manufacture of many specialized tools. These included rope, hide, arrowhead (usually obsidian), mortar and pestle, mano and metate, flint knapping, dip nets and harpoons for fishing, horn and bone awls used for sewing, and overlaid twine-type basketry (Heizer 1978).

7.1.3 Historic Background

Southern Shasta Valley History

Spanish and Mexican expeditions and early fur trapping ventures had brief stays in this general Project vicinity. The first major incursion by non-native peoples was during the Gold Rush period. There are many regional streams around Yreka and within Scott, Jones, and Quartz Valleys that were mined during the mid-to-late nineteenth century. In 1851, "Thompson's Dry Diggings" arrived in Shasta Valley and Yreka, then later to Shasta Butte City, where they developed a mining camp.

In March of 1852, the name was changed to Wyreka; and eventually changed to Yreka when the United States Post Office was established on August of 1853. The town was located in the middle of a large mining district with extensive hydraulic and dredging operations. Weed is located in the southern end of the Project area where Abner Weed first settled in the 1860s. He started the first

major commercial sawmill operation in the county. There were a number of roadways constructed between Yreka and other areas in northern California and southern Oregon. One roadway was called the North Old Stage Road, which connected Yreka and Mt. Shasta, along with areas located along the Pit River.

Soon after the North Old Stage Road was completed, railroads were extended into the area to service the lumber mills that had developed around the region, including the City of Mt. Shasta. The Southern Pacific Railroad was developed and preceded adjacent to the present Project area along with the McCloud River Railroad. Along with gold mining and lumber businesses, many residents invested in farms to pursue other economic goals such as ranching, homesteading, and recreational activities.

Activities such as these have had an adverse effect on some archeological resources around the City of Weed and southern Shasta Valley. Impacts within these areas from the activities described above are less severe than areas with more intensive gold mining operations such as around Yreka and within Scotts Valley to the northwest.

7.2 Regulatory Framework

7.2.1 CEQA Guidelines and Significance Criteria

CEQA review requires a determination of whether or not a Project will have a significant effect on archaeological sites or a property of historic or cultural significance to a community or ethnic group. A "historical resource," for the purposes of CEQA compliance, is defined as a resource listed in, or determined eligible for listing in, the CRHR. The CRHR lists properties that are to be protected from substantial adverse change and includes properties that are listed, or formally have been determined to be eligible for listing in the NRHP, State Historic Landmarks, and eligible Points of Historical Interest. The CRHR follows the lead of the NRHP in utilizing the 50-year threshold. A resource is usually considered for its historical significance after it reaches the age of 50 years. This threshold is not absolute, but it was selected as a reasonable span of time after which a professional evaluation of historical value/importance could be made. However, the CRHR goes a step further and includes resources over 45 years old, recognizing that there is commonly a five-year lag between resource identification and planning decisions. It explicitly encourages the collection of data about resources that may become eligible for the NRHP or CRHR within that planning period.

CEQA applies to discretionary projects and equates a substantial adverse change in the significance of a historical resource with a significant effect on the environment (Section 21084.1). CEQA Guidelines Section 15064.5 (revised 10/26/98) indicates a project may have a significant environmental effect if it causes substantial adverse change in the significance of a historical resource or a unique archaeological resource, as defined or referenced in CEQA Guidelines Section 15064.5(b, c) (1998). Such changes include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired (CEQA Guidelines Section 15064.5 [b]). Public Resources Code (PRC) Section 21084.1 stipulates that any resource listed in, or eligible for listing in, the CRHR is presumed to be historically or culturally significant.

CEQA Guidelines Sec. 15064.5 provides the following definitions that are applicable to this cultural resources analysis:

- Historical resource – Including but not limited to any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

- Local register of historic resources – A list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution.
- Substantial adverse change – Demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired.

When an archaeological resource is listed in or eligible to be listed in, the CRHR, PRC Section 21084.1 requires that any substantial adverse effect to that resource be considered a significant environmental effect. PRC Sections 21083.2 and 21084.1 operate independently to ensure that potential effects on archaeological resources are considered as part of the environmental analysis for a project. Either of these benchmarks may indicate that a proposal may have a potential adverse effect on archaeological resources.

CEQA Guidelines Sections 15064.5 and 15126.4 guide the evaluation of impacts to prehistoric and historic archaeological resources. Section 15064.5(c) provides that, to the extent an archaeological resource is also a historical resource, the provisions regarding historical resources apply. These provisions endorse the first set of standardized mitigation measures for historic resources by providing that projects following the Secretary of the Interior's Standards for Treatment of Historic Properties be considered as mitigated to a less-than-significant level.

Other state-level requirements for cultural resources management are written into PRC Chapter 1.7, Section 5097.5 (Archaeological, Paleontological, and Historical Sites), and Chapter 1.75, beginning at Section 5097.9 (Native American Historical, Cultural, and Sacred Sites) for lands owned by the state or a state agency.

The disposition of Native American burials is governed by Section 7050.5 of the California Health and Safety Code, and Sections 5097.94 and 5097.98 of the PRC, and falls within the jurisdiction of the NAHC. Section 7052 of the Health and Safety Code establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

Penal Code Section 622.5 provides misdemeanor penalties for injuring or destroying objects of historical or archaeological interest located on public or private lands, but specifically excludes the landowner. PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands.

7.3 Environmental Setting

This section identifies known cultural resources in the vicinity of the Project area.

Two previously recorded cultural resources have been identified near the proposed Project route or within the 1/4-mile radius of the Project area.

The first is located on the outer most southern boundary of the 1/4-mile search radius. The site is defined as both prehistoric a small basalt and obsidian lithic scatter and historic possible structural collapse with associated trash scatter (CA-SIS-345/H). The second resource consists of a small prehistoric seasonal campsite situated just west of the Project area.

In addition to the two previously recorded sites, an unrecorded historic trash scatter was located by the pedestrian survey. The site, given the temporary designation of PEW-1, is situated in the southern portion of the Project area. The site consists of tin cans, glass bottles, metal debris, and ceramics from the early 1900s. Also located within the site is a large quantity of modern refuse: bicycle tires, water heater, etc. The site is presently being documented and will be sent to the NEIC for official entry into the California Historical Resources Information System (CHRIS).

7.4 Environmental Impacts

7.4.1 Potential Impacts and Mitigation Measures to Known Cultural Resources

No cultural resources that could preclude or substantially limit development of the Project area were found during the cultural resource investigations of written records or field surveys, and there is no surface evidence of human remains on the site.

Lithic Scatter

Site CA-SIS-345/H sits over 60 meters west of Highway 97 and 20 meters south of the southern most edge of the 1/4-mile radius that surrounds the Project area. The site is outside the perimeters for any proposed construction activities. Therefore, construction activities, including road access and staging areas, will not impact the resource. No mitigation is required.

Prehistoric Seasonal Campsite

Cattle grazing and erosion have impacted site CA-SIS-152 heavily. The site was recorded in 1952 and at that time noted as “not worth excavating” due to low potential significant data recovery. The only artifacts observed during the original recordation were “some obsidian chips scattered about.” During the September 9 and 10, 2005, field survey, SWCA’s archaeologist was unable to relocate the site. In addition, the recorded site boundaries fall outside the perimeters for any proposed construction activities. Therefore, construction activities, including road access and staging areas, will not impact the resource. No mitigation is required.

Historic Trash Scatter PEW-1

PEW-1 is located immediately under the existing 69 kV transmission line and 16 meters due north of pole 17/45. Although PEW-1 is disturbed by bioturbation, the site may retain subsurface integrity and have features that could yield significant archaeological data. Therefore, a qualified archaeologist shall monitor all construction activity within 50 meters of site PEW-1. The impact will be less than significant with implementation of the following mitigation measure.

- Applicant shall retain a qualified archaeologist to relocate PEW-1, stake and flag the boundaries of the site, and be present when any construction activity occurs within a 50-meter radius. The preferred mitigation of impacts to archaeological sites is preservation in place.

7.4.2 Potential Impacts and Mitigation Measures to Unknown Cultural Resources

Project construction will create subsurface disturbances that could impact as-yet undiscovered cultural resources. The locations of access roads, staging areas, pull sites, and the transmission line route itself have been thoroughly researched both from an archival and physical inspection. If previously unidentified cultural resources or human remains, which shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code, are encountered during construction, the following mitigation measures shall be implemented.

- Should previously unknown cultural resources be encountered during Project-related subsurface disturbances, work shall be stopped in the area of the find pending consultation with a qualified archaeologist. The archaeologist will determine the potential significance of the findings, and in consultation with the CPUC, will develop measures designed to eliminate or at least minimize adverse impacts. Such measures can include, but not necessarily be limited to, no action, photo and documentary recording, subsurface testing, and excavation. The duration of work stoppages will vary depending on the extent, integrity, and potential significance of the encountered resource.

CEQA provides a measure of protection for human remains (Guidelines section 15064.5[d]) and for the accidental discovery of cultural resources (Guidelines section 15064.5[e]). These are particularly important provisions in that they take into account the possibility that significant resources not noted as a result of previous research efforts may be present within a Project area and need to be treated in a way to commensurate with CEQA standards. If human remains are discovered within the Project area during any phase of the construction, the following mitigation measure shall be implemented.

- Work within 100 feet of the discovered human remains shall be suspended immediately and CPUC and/or their representative shall immediately notify the respective county coroner. If the remains are determined by the coroner to be Native American, the NAHC shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains.

7.4.3 Paleontology Resources

Based on literature surveys and site reconnaissance, no paleontological resources as defined in CEQA Guidelines Section 15064.5 have been identified on the Project site. As a result, no impacts are anticipated from the Project.

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CHAPTER 8 ENERGY AND UTILITIES

8.1 Introduction

This section describes existing conditions and potential Project-related impacts to energy and utilities. Energy and utilities service systems include power, natural gas, communications, water treatment and distribution, sewer and septic facilities, solid waste disposal and local and regional water supplies.

8.1.1 Methods

Information on public service utilities and service systems were obtained from searches of local government websites and other local services information resources.

8.2 Environmental Setting

Electrical service in the Project area is provided by PacifiCorp. Siskiyou County does not have access to natural gas; however, several local gas company providers recommend an alternative solution which has proven successful. The City of Weed has a public works department that provides water and sewer services to its citizens. Siskiyou County oversees waste water treatment and water throughout the county. Most of Siskiyou County's land telephone lines are provided by Pacific Bell with Cal-Ore Telephone Company serving Butte Valley and Tulelake areas, and Siskiyou Telephone Company serving Scott Valley and Klamath River communities. There are numerous long distance carrier providers with the most common being AT&T, Sprint, and MCI. Most local telephone companies offer telecommunication service. The Siskiyou County Economic Development Council's Time-Share office includes access to DSL.

8.3 Environmental Impacts

8.3.1 Significance Criteria

The significance criteria are derived from Appendix G of the revised CEQA guidelines. Impacts to utilities and service systems in the Project area will be considered significant if the Project resulted in any of the following:

- A breach of published national, state, or local standards relating to solid waste or litter control.
- Contamination of a public water supply.
- Extension of sewer trunk line with capacity to serve new development.
- Exceed wastewater treatment requirements of the Regional Water Quality Control Board.
- The need for new or substantially altered water or wastewater treatment facilities or storm drainage facilities.
- The need for a new or expanded water supply.
- Inadequate access to landfill with sufficient permitted capacity to accommodate the
- Projects solid waste disposal needs.

8.3.2 Potential Impacts and Mitigation Measures

Construction Impacts

Project construction will require the use of small amounts of water for dust control and drinking water. The short-term period of use will have an insignificant impact on local water supplies and create no need for water treatment facilities. Project construction will have an insubstantial impact on wastewater. Construction crews will use portable toilets. No other sources of wastewater are anticipated for construction. No changes to wastewater treatment facilities will be required because of the small amount of waste generated by crews. The Project does not require construction of new water or wastewater facilities or pipelines and will not require moving of any such lines. The placement of footings for the poles is not expected to significantly alter septic field drainage should they be present. The Project is not expected to displace any known existing permitted water wells nor create any substantial alteration of a well field during construction activities.

Replacement of existing wood poles will result in their being disposed of at a landfill authorized to receive them or they will be reused or recycled. If the existing wood poles are wrapped with CuNap wrap, it will need to be removed, placed in a Department of Transportation (DOT)-approved container, labeled as hazardous waste and including Project information and transported back to a consolidation area on a remote waste shipping paper. The old conductor will be sold to an aluminum salvage company. Other miscellaneous non-hazardous construction materials that cannot be reused or recycled will likely be acceptable for disposal at municipal county landfills. Any hazardous materials will be recycled, treated and/or disposed of in accordance with federal, state and local laws.

Construction activities could inadvertently contact underground facilities during pole excavations that could lead to short-term service interruptions. The likelihood of such an occurrence is remote, and implementation of standard practices such as contacting Underground Service Alert before excavation, will reduce the impact to a less than significant level. Waste that is generated by the construction will be disposed of at a county dump or similar facility with adequate capacity to accept the material.

Operation Impacts

Operation of the proposed Project will not require additional workers other than those currently employed for operation and maintenance. The Project will not require additional infrastructure from other utilities to operate in the Project area. The Project is located primarily within an existing right-of-way. The Project will not extend electrical service and utilities to new areas, or require the extension of other public services to previously unserved areas. The Project will not generate a significant demand for water or generate waste water. A minor amount of solid waste will be generated over the years, such as replacement of worn or damage equipment. As a result, there will be no direct impacts to energy and utilities as a result of the proposed Project.

Indirect Impacts from Growth Accommodation - As explained in Chapter 16 - Growth Inducing Impacts, the Project will accommodate planned growth, but will not induce population growth in the area. Growth in the area is carefully planned and regulated by city and county general plans, which contain land use policies to protect the region's open spaces and agricultural traditions and to control urban development. Like other utilities, PacifiCorp plans and upgrades electrical facilities incrementally based on growth projections provided by local government agencies. These growth projections reflect economic and urban developments that are planned and approved by city and county governments.

Local planning policies and zoning regulations have the biggest influence in controlling the pace and ultimate amount of growth in this area. The availability of electrical capacity by itself does not normally ensure or encourage growth within a particular area. Other factors such as economic conditions, land availability, population trends, and local planning policies have more of an effect on growth than the availability of services. Construction of the Project will not have significant adverse impacts on energy or other utility services.

8.4 References

Siskiyou County Economic Development Council, Inc. website accessed September 23, 2005.
<http://www.siskiyoucounty.org/utilities-taxes.htm>

CHAPTER 9 GEOLOGY AND GEOHAZARDS

9.1 Introduction

This chapter describes existing geological and soil conditions, potential geologic and geotechnical hazards, and potential impacts for the Project. The Project is located in the Cascade Range geomorphic province of California, a region potentially affected by seismicity and underlain by unconsolidated deposits and consolidated bedrock. Geologic hazards with the potential to impact the Project include landslides, volcanic hazards, strong seismic ground shaking, localized liquefaction and lateral spreading, and soil erosion. Potential geotechnical hazards include the presence of expansive soils, and soft, wet and loose soil. Design-level geotechnical investigations and appropriate engineering and construction measures will avoid or reduce potential impacts of geologic hazards to a less than significant level.

9.1.1 Methods

Existing conditions, potential geologic hazards, groundwater levels and potential mineral resources were evaluated from review of available published literature such as geologic reports and geologic maps, soil survey data and maps, review of large-scale topographic maps and review of orthophoto quadrangles that include the Project area. No surface reconnaissance or subsurface explorations were completed. Descriptions of geologic units in the Project area were derived from published mapping by Wagner and Saucedo (1987) and Crandell (1989). Soil descriptions were obtained from mapping by the United States Department of Agriculture, Soil Conservation Service, Soil Survey of Siskiyou County – Central Part (Newlun, 1983).

Site-specific, design-level geotechnical investigations may be performed, as necessary, to evaluate subsurface conditions that may affect construction, operation, and maintenance of Project facilities.

The only pertinent regulation for geology is related to earthquake fault zones. California enacted the Alquist-Priolo Special Studies Zones Act in 1972, which requires the establishment of “earthquake fault zones” (formerly known as “special studies zones”) along known active faults in California (Hart and Bryant 1997). Development in these special studies zones is through enforcement of the regulations to reduce the potential for damage from fault displacement.

9.2 Environmental Setting

9.2.1 General

The Project is located along the western boundary of the Cascade Range geomorphic province of California. The Cascade Range extends from south of Mount Lassen in Shasta County, northward through the Project area, continuing north into Oregon, Washington state and southern British Columbia. The Cascade Range consists of a north to west-northwest-trending mountain chain dominated by regularly spaced, large volcanic eruptive centers. In northern California and in the vicinity of the Project area, the Cascade Range is bounded on the west by the Klamath Mountains geomorphic province and on the east by the Modoc Plateau geomorphic province. The division between the Cascade Ranges and the Modoc Plateau is indistinct, since the characteristic volcanism associated with each province occurs locally in the other. On the west side of the Cascade province, it is likely that rocks of the Cascade Ranges lap onto or overlie Klamath Mountain province rocks (Wagner and Saucedo, 1987).

9.2.2 Geology

Bedrock geology of the area was completed by Wagner and Saucedo (1987) at a large scale. A summary discussion of the geology of the Cascade Range province is provided by Macdonald (1966) and Harden (1998). Only one geologic unit, "Volcanic rocks of Shasta Valley" is shown in the Project vicinity. The Volcanic rocks of Shasta Valley are subdivided into andesite and pyroclastic deposits. The pyroclastic deposits include tuffs, tuff breccias, lahars and pyroclastic flow deposits. The andesite is typically found on low hills and knobs in Shasta Valley. Wagner and Saucedo (1987) identify the rocks as Quaternary in age.

The deposits in Shasta Valley were mapped and analyzed in detail by Crandell (1989). He concluded that the material was the result of an extremely large debris avalanche that occurred following the failure of a volcanic eruptive center that existed prior to Mount Shasta. The material that filled the western part of Shasta Valley includes blocks of intact andesite rock, other types of poorly consolidated volcanic rock and sedimentary rock. Unconsolidated pyroclastic deposits filled the lower lying areas around the intact and more resistant material. The age of the debris avalanche is dated to be between 300,000 and 380,000 years old.

Volcanic eruptions from Mount Shasta have the potential to affect the Project area. Hazard zones have been described by Crandell (1989) and Hoblitt et al. (1987). The last eruption of Mount Shasta resulted in a blanket of ash being deposited in an area within about 15 miles of the volcano. The project is located from 10 to 30 miles of Mount Shasta. However, larger eruptions are possible and could deposit ash, generate lava flows, lahars, debris avalanches or debris flows.

Drainages have subsequently become re-established and reworked deposits in the lower-lying portions of the debris avalanche deposit.

9.2.3 Soils

There are twenty-one different soil series located along the existing and proposed new transmission line alignments and in the vicinity of the substation. The soil series were grouped into seven associations based on general soil characteristics and landform as shown in Table 9-1. Because of the igneous rock origin (i.e. volcanic rock), the fine-grained soils are typically high in clay content. Three of the soil units are described as having montmorillonite clays, which are susceptible to shrink and swell. Near-surface groundwater is reported in some of the soils in Soil Group 6.

9.2.4 Seismicity

There are no Alquist-Priolo special study zones within the Project area. The closest special study zones are located in the eastern part of Siskiyou County and to the southeast in Shasta County (Hart and Bryant, 1997), more than 50 miles away. No known active faults are mapped closer than the Alquist-Priolo Special Study Zones (Jennings, 1994).

The Project area is in Seismic Zone 3 relative to seismic design (Uniform Building Code [UBC], 1997). For the Project area, a peak ground acceleration (PGA) of 0.1 to 0.2g has a 10 percent probability of being exceeded in a 50-year period (Tianqing, 2003). Topozada et al. (2000) do not show any Magnitude 5 earthquakes in the vicinity of the Project area for the period 1800 to 1999. A review of earthquake records in the Northern California Earthquake Data Center (2005) indicates similar results for the period 1900 to present. Strong ground shaking affecting the region is attributable to distant, rather than nearby, sources (e.g. active faults in eastern Siskiyou County, active faults in the Coastal California region, and the Cascadia Subduction Zone).

Table 9-1 Summary of Soil Groupings

Soil Grouping	Landform(s)	Slope Gradient	Parent Material	Expansion Index	Erosion Hazard	Suitability for Roads	Drainage Class	Hydrologic Group
1. Lassen-Kuck Complex, Lithic Haploxerolls-Rock Outcrop, Mary Stony Loam, Mary-Rock Outcrop Complex	Hill , except Haploxerolls-Rock Outcrop: Mountains	2-50% except Haploxerolls-Rock Outcrop 0-65%	Residuum from igneous bedrock; Haploxerolls from igneous and metamorphic bedrock	Lassen, Lithic Haploxerolls: Mod.-High ; Kuck, Mary Stony Loam:: Mod. ; Rock Outcrop: None	Lassen, Kuck, Mary, Lithic Haploxerolls – Moderate ; Bedrock outcrop: Not Rated .	Lassen, Kuck, Mary, Lithic Haploxerolls – Poorly suited ; Bedrock outcrop: Well-suited to Not Rated .	Well-Drained	D
2. Asta Cobbly Sandy Loam, Neer-Ponto Stony Sandy Loams, Ponto Sandy Loam, Ponto-Neer Complex	Asta: Terrace ; others: Hill	Typically 2-15% ; Asta & Neer-Ponto Stony Sandy Loams: 15-50%;	Asta: Volcanic Ash from volcanic rock deposited over glacial outwash; others Volcanic ash derived from volcanic rock	Very Low to low	Moderate	Poorly suited to Moderately suited depending on slope	Well-Drained	B
3. Louie Loam, Salisbury Clay Loam, Salisbury Gravelly Loam, Salisbury Cobbly Loam	Terrace	Range 0 to 9%	Alluvium predominantly derived from igneous, metamorphic and sedimentary rocks	Louie: Low ; Salisbury: Low-High	Slight	Moderately suited	Well-Drained	C
4. Dotta Loam, Dotta Gravelly Loam, Redola Loam	Dotta: Alluvial Fan ; Xerofluvents: Flood Plain		Asta: Volcanic Ash from volcanic rock deposited over glacial outwash; Dotta and Xerofluventss: Alluvium derived from igneous, metamorphic and sedimentary rocks	Dotta: Low to Moderate ; Redola: Low	Moderate	Moderately suited	Well-Drained	B
5. Deetz Gravelly Loamy Sand, Deetz Stone Loamy Sand, Delaney Sand, Delaney Sandy Loam	Outwash Fan	Ranges 0-30%	Glaciofluvial deposits derived from igneous rock	None to Low	Slight to Moderate depending on slope	Poorly suited to Moderately suited depending on slope	Somewhat excessively drained	A
6. Copsey Gravelly Clay; Gazelle Silt Loam; Odas Sandy Loam; Pit Clay; Settlemeier Loam	Flood Plain ; Copsey: Alluvial Fan ; Gazelle: Basin floor .	0-2% for most ; 0-9% overall.	Alluvium predominantly derived from igneous, metamorphic and/or sedimentary rock	Copsey: High ; Pit Clay: Mod-High ; Gazelle, Odas: Low ;	Slight	Gazelle, Settlemeier: Poorly suited ; Copsey, Pit: Moderately suited ; Odas: Well suited	Poorly-Drained – saturated at shallow depth	D
7. Riverwash	Drainageway, Flood Plain ;	0-5%	Alluvium derived from igneous, metamorphic and/or sedimentary rock	Not Tested	Not Rated	Not Rated	--	A

9.2.6 Mineral Resources

Mineral resources present in the Cascade Province of northern California and Siskiyou County are described by Gay (1966) and Harden (1998). Mineral resources include metallic minerals such as gold, mercury, and uranium. Non-metallic minerals consist of sand and gravel, volcanic cinders, optical grade calcite, clay, coal, stone, diatomite, limestone, obsidian, perlite, and pumice. Mining of volcanic cinders is reported east of Weed and outside the Project area by Gay (1966).

The CGS (2005) has not prepared any reports that designate Mineral Resource Zones to be protected in Siskiyou County. There were no documents prepared by the U.S. Geological Survey that describe or map mineral resources in Siskiyou County.

The Siskiyou County General Plan does not have a Mineral Resource Element. The only indication of surface mining within a mile of the Project area occurs southeast of U.S. Highway 97, south of the Project area, as observed on topographic maps.

9.3 Environmental Impacts

9.3.1 Significance Criteria

Significance criteria were developed from the CEQA Guidelines. Impacts from the proposed Project will be considered significant if they resulted in increased exposure of people or structures to major geologic hazards that results in substantial adverse effects. However, geologic impacts are typically considered less than significant if, through engineering, geotechnical investigation, and construction techniques, the risk of damage to structures can be greatly reduced, although not eliminated completely. Project impacts will be significant if the Project were to cause the following:

- The project would expose people or structures to geological hazards or related geotechnical hazards, such as surface rupture of a known earthquake fault, strong seismic shaking, seismic related ground failure (e.g., liquefaction or lateral spreading), landslides, earth flows, debris flows and unstable geologic units, substantial soil erosion or loss of topsoil, or soft or loose or expansive soils.
- The project would substantially affect significant mineral resources identified by the California Department of Conservation or the Siskiyou County General Plan by precluding them from extraction.

9.3.2 Construction and Operation Impacts

The proposed project may be impacted by geologic hazards and geotechnical conditions that exist in the project area. These hazards may impact the project during the life of the project or may have impacts during a specific phase or phases (e.g. during construction, during operation, or during maintenance). However, where potentially significant impacts are a possibility, specific mitigation measures will be applied to reduce those potential impacts to less than significant. The impacts and mitigation measures are in the following sections.

Potential geologic hazards and geotechnical conditions primarily related to excavation and grading activities during construction and maintenance include:

- Soft or loose soils
- Slope instability including landslides
- Soil erosion
- Expansive soils

- Loss of mineral resources

Potential geologic hazards and geotechnical conditions related to operation and maintenance of the proposed project include the following:

- Ground shaking
- Surface rupture from faulting
- Liquefaction
- Lateral spreading
- Volcanic eruption

Soft, Wet or Loose Soils

Transmission Line Upgrade - Saturated, loose sand, soft silt and soft clay soils may pose difficulties along access routes for construction and in excavating for pole foundations.

Construction activities will be scheduled for the dry season to facilitate safe and reliable truck and equipment access. It may also be necessary to utilize driving mats for equipment to cross wet and soft or loose soils during construction. Design-level geotechnical studies will be performed to evaluate the potential for, and effects of, soft or loose soils where necessary, and will bring pole installations up to current code. As a result, potential impacts from soft or loose soils will be less than significant; therefore, further mitigation is not required.

New 115 kV Transmission Line – It is not anticipated that saturated, loose sands, soft silt or soft clay soils will be encountered along the proposed new transmission line. Construction is planned for the dry months and near-surface soils appear to be predominantly granular and well-drained. Therefore, it is not anticipated that pole installation and access road construction will be affected by soft or wet soils.

Substation Upgrade - Wet, loose or soft soils may be present in the vicinity of the Lucerne substation. Construction is planned for the dry months and near-surface soils appear to be predominantly granular and well-drained. Design-level geotechnical studies will be performed to evaluate the potential for, and effects of, soft or loose soils where necessary, and will bring substation installations up to current building code. Mitigation may include excavation of soft or loose, wet soils and replacement with properly compacted structural fill. As a result, potential impacts from soft or loose soils will be less than significant; therefore, further mitigation is not required.

Expansive Soils

Shrink-swell soil behavior is a condition in which soil reacts to changes in moisture content by expanding or contracting. Several of the natural soil types identified within the Project area have moderate to high clay contents. Only a few of the soils are considered to have moderate to high shrink-swell potential. In the Lassen-Kuck association, both soils are underlain at relatively shallow depth by bedrock. The Pit Clay is relatively thick, but the potential for shrink-swell appears to decrease with depth, based on the engineering properties of the typical soil profile. Expansive soils may cause differential and cyclical foundation movements that can cause damage and/or distress to overlying structures and equipment.

Transmission Line Upgrade - Expansive soils are expected to be encountered along the portions of line being upgraded. Design-level geotechnical studies will be conducted to develop appropriate design features for locations where potential problems are known to exist. Appropriate design features may include excavation of potentially problematic soils during construction and replacement with engineered backfill, ground treatment processes, directing surface water and drainage away from poles, or increasing the burial depth of the poles.

Implementation of these standard engineering methods will reduce potential impacts to a less than significant level and further mitigation is not required.

New 115 kV Transmission Line – No impact is anticipated, therefore no mitigation is required.

Substation Upgrade – No impact is anticipated, therefore no mitigation is required.

Surface Rupture from Faulting

There are no Alquist-Priolo special study zones within the Project area. The closest special study zones are located in the eastern part of Siskiyou County and to the southeast in Shasta County, over 50 miles away. (Hart and Bryant, 1997). No known active faults are mapped nearby (Jennings, 1994). No impacts from surface rupture are expected or likely. Therefore, no mitigation is required for the line upgrade, the new line or the substation.

Strong Seismic Ground-Shaking

Because the Project is located in Seismic Zone 3 (UBC, 1997), it is anticipated that the Project could be affected by strong seismic ground shaking. A peak ground acceleration of 0.1 to 0.2g has a 10 percent chance of being exceeded in a 50-year period (Tianqing, 2003).

Transmission Line Upgrade and New 115K Transmission Line – In general overhead transmission lines can accommodate strong ground shaking. Design requirements for overhead lines for windloading generally are more stringent than those developed to address strong seismic ground shaking. It is anticipated that the design for wind effects will also mitigate for strong ground shaking. The potential impact from seismic ground shaking on transmission lines is considered less than significant and therefore further mitigation is not required.

Substation Upgrade – Facilities at the substation could be affected by strong ground shaking. Foundations and structures will be constructed in accordance with current building code. It is expected that potential significant impacts can be mitigated through site-specific design information as needed and development of proper plans and construction. Certain equipment at the substation will be more susceptible to seismic shaking. The Institute of Electrical and Electronics Engineers (IEEE) Standard 693-1997 “Recommended Practices for Seismic Design of Substations,” provides recommendations for mitigating possible damage to substation equipment. Assuming that these guidelines are followed, then it is anticipated that little structural damage will occur from horizontal ground accelerations anticipated. Design-level geotechnical studies will be performed as necessary to evaluate the potential for, and effects of strong ground shaking and the facilities will be designed and constructed in accordance with current code. Ground-shaking will be As a result, potential impacts from strong ground shaking will be less than significant; therefore, further mitigation is not required.

Liquefaction, Lateral Spreading and Subsidence from Seismic Shaking

Liquefaction can occur in wet, loose sand or soft silt soils subjected to seismic shaking. Shallow groundwater is reported near the ground surface in many of the soil series in Soil Group 6 (e.g. Gazelle, Odas and Settlemyer). The susceptibility to liquefaction decreases with an increasing percentage of large particles and density of the soil. Soil up to about 50 feet deep can be susceptible to liquefaction, therefore, areas with coarse sand or larger particles near the surface could be affected by liquefaction if underlain by saturated loose sand or silt soils. Areas subject to liquefaction can also undergo subsidence. Lateral spreading usually occurs where wet, soft silt, soft clay, or loose sand soils are present in proximity to a free face. The potential for lateral spreading appears to be low.

Transmission Line Upgrade – Near-surface soils along the proposed new transmission line include wet, soft silt or sand soils that could be susceptible to liquefaction. Portions of the existing corridor are considered likely to have a moderate to high potential for liquefaction where the near-surface soils are saturated. These are areas where Group 6 soils are present. Other parts

of the alignment are considered to have a low to moderate potential for liquefaction. Design-level site specific studies as needed to evaluate the potential for liquefaction and effects of, liquefiable soils to partially or fully mitigate the impacts of liquefaction to a less than significant impact. Mitigation methods may include treating or replacing soil adjacent to poles or setting poles deeper.

New 115 kV Transmission Line – Near-surface soils along the proposed new transmission line are gravelly. This corridor is likely to have a low to moderate potential for liquefaction since the potential exists for liquefiable soils at depth. Design-level site specific studies of the new alignment or conditions will be extrapolated from studies of similar areas on the existing alignment as needed to evaluate the potential for liquefaction and effects of, liquefiable soils to partially or fully mitigate the impacts of liquefaction to a less than significant impact.

Substation Upgrade – The Lucerne substation is underlain by Gazelle series soils that are considered to have a moderate to high potential for liquefaction. Design-level geotechnical studies will be performed to evaluate the potential for and effects of liquefiable soils where necessary. Mitigation may include excavating wet soft or loose soils and replacing with compacted material placed as structural fill. In addition, it is anticipated that the structures planned can experience some settlement that could occur as the result of liquefaction, and will not be adversely affected. As a result, plans and construction methods will be implemented so that potential impacts from liquefiable soils will be less than significant; therefore, further mitigation is not required.

Soil Erosion and Loss of Soil

Soils disturbed during the construction process are subject to loss of vegetative cover, resulting in erosion on-site and sedimentation that affects the Project or adjacent areas. The primary disturbance will occur in areas where new roads are constructed, where existing access roads will need clearing, where grading occurs for pulling and tensioning sites, and where grading occurs within the substation. The proposed construction will occur during the dry season, reducing the potential for soil loss during construction. Development of a temporary site-specific erosion and sedimentation control plan and implementation of BMPs will reduce the potential impacts to less than significant. Plans will also include revegetation of disturbed areas.

Transmission Line Upgrade – Primary areas of disturbance will occur along areas where new road is constructed, where the existing access road prism needs to be regraded or for any grading needed at pulling and tensioning sites. Roads along areas inclined steeper than about 15 to 20 percent are more susceptible to erosion, with erosion potential being moderate to severe as slopes become inclined steeper than 30 percent. The erosion potential for the various soils is summarized in Table 9.1. One segment of new road will be constructed on ground that appears to be steeper than 30 percent. Most pulling and tensioning sites occur on or near relatively level ground surfaces. However, three pulling and tensioning sites appear to be located on or near slopes.

The proposed construction will occur during the dry season, reducing the potential for soil loss during construction. Development of a temporary site-specific erosion and sedimentation control plan and implementation of BMPs will reduce the potential impacts to less than significant. Plans will also include revegetation of disturbed areas. Special consideration will be required to install waterbars or other drainage facilities on roads located on sideslopes steeper than 30 percent or where road grades are steeper than 5 percent. Project timing and implementation of standard BMPs for erosion and sedimentation control will result in less than significant impacts.

New 115 kV Transmission Line – The new access road will be constructed along ground that is relatively flat on soils that have only a slight potential for erosion. Project timing and implementation of standard BMPs for erosion and sedimentation control will result in less than significant impacts.

Substation Upgrade – Lucerne substation is located on relatively horizontal ground, and susceptibility to erosion is considered slight. Project timing and implementation of standard BMPs for erosion and sedimentation control will result in less than significant impacts.

Landslides or Unstable Areas

Most of the Project area is located on relatively level ground and is not susceptible to landsliding. Short segments of sloped areas are present in proximity to the Project where landslides could occur. Construction of new roads or regrading existing roads can impact slope stability. As with natural slopes, as the slope inclination increases, the potential for landsliding increases. Placing fill on slopes, either for the construction of roads or for pulling and tensioning sites, can also increase the potential for landsliding. Improper drainage can saturate near-surface soils and help cause unstable soil conditions. As the inclination of slopes increases, the potential for landsliding becomes greater. The primary potential for landsliding is from construction of new roads on slopes steeper than about 30 percent, or where regrading is required along the existing access roads that cross sloped areas. The suitability of the soils present along the existing transmission corridor for road construction is presented in Table 9-1. Sloped areas underlain by expansive soils are more sensitive to road construction.

Transmission Line Upgrade – While most of the transmission line upgrade corridor is on slopes inclined less than 8 percent, short segments of the existing transmission line crosses slopes inclined at gradients that range from 15 to nearly 50 percent, based on one-third second arc digital elevation data from the U.S. Geological Survey. Actual slope gradients measured on the ground could vary. Portions of the existing access roads are located on slopes inclined at gradients of 15 to 30 percent, with short segments on slopes apparently between 30 and 50 percent. At least one segment of new road is planned on slopes steeper than 30 percent but less than 50 percent.

Design-level geotechnical studies, where necessary, will be performed to evaluate the potential for new roads or construction of existing roads to cause instability. Cuts more than 3 feet in vertical height for roads and fill more than 3 feet thick placed for roads or pulling and tensioning sites on slopes inclined at gradients greater than about 30 percent will require special consideration. It is likely that roads on slopes inclined at gradients of up to about 50 percent can be completed using balanced cuts and fills, provided appropriate drainage is incorporated into the design. Where expansive soils underlie sloping surfaces inclined at greater than about 15 percent should be evaluated prior to making any cuts or placing fill more than 2 feet thick. It may be necessary to stabilize the road prism using geotextile, rock or other methods, or it may be prudent to abandon the road segment, restore the slope to the pre-construction configuration and revegetate it. For segments of the line where it is not practical to construct roads, it may be possible to either use tracked equipment to access sites or to fly in poles and materials using helicopters. As a result of site-specific geotechnical design, plans and construction, the potential for landslides or unstable slopes to affect or be affected by, the proposed Project will be less than significant and further mitigation will not required.

New 115 kV Transmission Line – The new alignment is on relatively level ground and a hundred feet or more from sloped areas. The potential for landsliding to affect the new alignment is considered low. No further mitigation is required.

Substation Upgrades – The substation are on relatively level ground – and several hundred feet from sloped areas. The potential for landsliding to affect the substation is considered low. No further mitigation is required.

Volcanic Hazards

An eruption from Mount Shasta could generate ash deposits that cover the Project area. An eruption could also generate lava flows, lahars, debris avalanches or debris flows. Significant eruptions appear to occur every 250 to 300 years over the last 3,500 years (Hoblitt et al., 1987),

with the last catastrophic debris avalanche occurring more than 300,000 years ago (Crandell, 1989). The probability that a lava flow will reach the Project area is considered low based on an assessment of Mount Shasta by Hoblitt et al. (1987). The probability that a large eruption depositing thick layers of ash and pyroclastic deposits within about 30 miles of Mount Shasta is reported as 10^{-5} by Hoblitt et al. (1987). Moreover, the project does not add to that risk because the people servicing the facilities run the same risk of loss of life and injury from volcanic eruption as exists currently.

Risk of injury or loss of life can be mitigated by evacuating personnel and mobile equipment during periods when a high risk of an imminent eruption has been identified. Volcanic eruptions are often preceded by an increase in seismic activity caused by movement of magma beneath the ground surface. State and federal officials will likely issue a warning, specifying the level of threat. Other than a catastrophic event, impacts from a volcanic eruption may require some mitigation, such as removal of ash from equipment.

Therefore, the impacts are considered less than significant. The potential for an event with unavoidable adverse impacts is considered low and is no different than for existing conditions.

Mineral Resources

There are no known mineral resources in the vicinity of the proposed alignment (California Geological Survey [CGS], 2005; U.S. Geological Survey, 2005). Since the upgraded transmission line will follow the existing transmission line corridor and upgrades to substation will be within the boundaries of existing facility, it is likely that no impacts will occur to any potential mineral resource areas. The new segment of transmission line will cross relatively flat ground where no sand or gravel deposits have been identified from the soil survey data.

Transmission Line Upgrade – There are no designated Mineral Resource Zones and no known mineral resources along the existing alignment. Therefore, no impacts will occur and no mitigation is required.

New 115 kV Transmission Line – There are no designated Mineral Resource Zones and no known mineral resources along the proposed alignment. Therefore, no impacts will occur and no mitigation is required.

Substation Upgrades – There are no designated Mineral Resource Zones and no known mineral resources within the existing substation or its vicinity. Therefore, no impacts will occur and no mitigation is required.

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CHAPTER 10 HYDROLOGY AND WATER QUALITY

10.1 Introduction and Methods

This section describes the existing surface water and groundwater hydrology, use and quality in the Project area. Erosion and flooding potential from the construction and operation of the project have been evaluated, as well as potential impacts to surface and groundwater quality and hydrology.

Information on surface water and ground water in the Project area were obtained from a variety of sources, including reviewing maps showing water bodies and drainages, by reviewing studies completed by and for state and local water agencies, and reviewing Federal Emergency Management Agency (FEMA) maps. Environmental specialists conducted a field review of the Project area in August 2005 to assess potential effects associated with the proposed Project. Potential impacts were evaluated by considering the construction activities and techniques of the Project, as well as the continued operation of the Project components, including the upgraded and new transmission line, and upgraded substation.

10.1.1 Regulatory Framework

The North Coast Regional Water Quality Control Board (RWQCB) is responsible for protecting the beneficial uses of water resources in the Project area. The RWQCB adopted an interim basin plan in 1971 and a comprehensive Water Quality Control Plan in 1975 for the Klamath River Basin and the North Coastal Basin. In 1988, the Regional Water Board combined and updated the two comprehensive plans and their abstracts into a single Water Quality Control Plan for the North Coast Region (Basin Plan). In 1993, the Regional Water Board was updated and corrected. In addition, the RWQCB has amended the Basin Plan numerous other times between 1975 and 1996. The Basin Plan provides a definitive program of actions designed to preserve and enhance water quality and to protect beneficial uses of water in the North Coast in accordance with the Porter-Cologne Water Quality Control Act.

Federal and State Permit Requirements

The federal Clean Water Act and state Porter-Cologne Act require compliance with the National Pollutant Discharge Elimination System (NPDES) for projects disturbing one acre or more of soil. Since the total area of soil disturbance for the Project will be greater than 1 acre, construction activities must comply with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activities. Compliance with the Construction General Permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which must be prepared before construction begins.

10.2 Environmental Setting

The proposed Project is located within the Shasta River watershed. The Shasta River watershed covers an area of approximately 795 square miles. The Project area is located within the Klamath River hydrologic unit and in the Shasta Valley hydrologic area. The Shasta Valley hydrologic area lies principally within the Cascade Range province. The valley floor elevation is about 2,500 to 3,000 feet, and surrounding mountains range up to 14,162 feet (Mt. Shasta). Annual precipitation ranges from below 15 inches in the valley to over 60 inches in the mountains. In the Shasta Valley hydrologic area, domestic and agricultural water supply needs have historically been met through surface water diversions and from springs. Groundwater is used increasingly for domestic and agricultural supply. The principal water service agency in the Shasta Valley

hydrologic area is the Montague Water Conservation District, which serves over 14,000 of the 48,000 acres irrigated in the subunit. The District's main supply source is 50,000 acre-foot Lake Shastina on the Shasta River. Several smaller irrigation districts in Shasta Valley serve from 1,500 to 3,500 acres each.

The proposed Project crosses the Shasta River upstream of Lake Shastina, as well as a few other small ephemeral and perennial waterways (i.e., Garrick Creek). At the point where the transmission line crosses it, the Shasta River is approximately 15 feet wide and supports a relatively narrow riparian zone. Shasta River flows, partly regulated by Lake Shastina (also known as Dwinnell Reservoir), supply numerous irrigation diversions, and are greatly affected by the limited rainfall in the Shasta Valley drainage basin. Lake Shastina is located approximately 1 mile east of the Project. The Dwinnell Dam is located on the north eastern side of Lake Shastina, and approximately 4.75 miles from the Project. Figure 6-1 in Chapter 6 shows the Project area and the water features discussed above.

There are also several potential wetland areas in the southern portion of the Project, including the margins of the Shasta River and the pastures adjacent to Hoy Road. Chapter 6 Biological Resources describes these potential wetland areas in more detail.

According to the Federal Emergency Management Agency (FEMA), several sections of the Project corridor are located within a 100-year floodplain. The structures located within the floodplains include the following: 4/24 to 5/25; 3/33 to 14/33; 1/40 to 4/40; and 16/41 to 19/41. Refer to Figure 2-4 in Chapter 2 for the location of each structure listed.

10.3 Environmental Impacts

This section analyzes the potential for hydrology and water quality impacts as a result of:

- construction of substation improvements;
- construction of new access roads and improvement of existing roads;
- installation of stream crossing structures on access roads;
- vegetation clearing and grading of staging areas and pulling and tensioning sites;
- operation of Project vehicles and heavy equipment;
- installation of new transmission poles and removal of existing poles;
- installation of new conductors; and
- long-term operation and maintenance of the new transmission line.

10.3.1 Significance Criteria

The following criteria (based on Appendix G of the revised CEQA guidelines) were used to evaluate environmental impacts of the Project. It is assumed that the Project will have a significant impact if it:

- Violates any water quality standards or waste discharge requirements;
- Substantially depletes groundwater supplies or interferes substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- Substantially alters the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or sedimentation on- or off-site;

- Substantially alters the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increases the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Creates or contributes runoff water that would exceed the capacity of existing or planned storm water drainage systems or provides substantial additional sources of polluted runoff;
- Otherwise substantially degrades water quality;
- Places housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map;
- Places within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Exposes people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; and/or
- Causes inundation by seiche, tsunami, or mudflow.

10.3.2 Potential Impacts and Mitigation Measures

This section describes potential construction and operational impacts to hydrology and water quality as a result of the Project. Mitigation measures that will reduce all impacts to a less than significant level are also described below.

As part of PacifiCorp's standard construction practice, the following measures will be incorporated into the Project and will be implemented to avoid or minimize impacts to hydrology and water quality to a less than significant level:

- To reduce visual contrast and reduce siltation in construction areas (e.g., structure sites, spur roads from existing access roads) where ground disturbance is substantial, surface preparation and reseeded will occur. The method of restoration will normally consist of loosening the soil surface, reseeding, installing cross drains for erosion control, placing water bars in the road, and filling ditches.
- To minimize amount of sensitive features disturbed in designated areas, poles will be placed so as to avoid sensitive features and/or to allow conductors to clearly span the features, within limits of standard pole design. If the sensitive features cannot be completely avoided, poles will be placed so as to minimize the disturbance.
- To avoid disturbance in areas of sensitive habitat or features, access roads will not be constructed. Rather, construction and maintenance traffic will use existing roads or cross-country access routes (including the ROW). To minimize ground disturbance, construction traffic routes will be clearly marked with temporary markers such as easily visible flagging.

Construction and Operation Impacts

Construction of the Project includes upgrading approximately 17 miles of existing 69 kV transmission line to 115 kV, constructing 1.6 miles of new 115 kV transmission line, and the modification of the Lucerne substation. This will involve the removal of the existing 69 kV transmission line poles and conductor, and the installation of new 115 kV wood poles and associated conductor and hardware. Existing access roads will be used wherever feasible, however, it is estimated that 2.5 miles of new access roads will be constructed as part of the Project. All substation modifications will occur within the existing fence line, utilizing existing roads for access.

Standards and Requirements

Project construction has the potential for temporary and minor increases in sedimentation. However, the Project will not result in any pollutant discharge. The temporary sedimentation will result from stormwater runoff at pole site, staging areas, access roads, and other disturbed sites as a result of construction.

Although this potential impact is expected to be minor and not significant, mitigation measures such as locating poles to span sensitive water features, implementation of erosion control measures to be outlined in the SWPPP will be applied. These mitigation measures will also keep the Project from violating any water quality standards or waste discharge requirements, and will result in less than significant impacts to standards and discharge requirements due to temporary sedimentation and discharge.

Groundwater

Construction of the Project will not include a substantial increase in impermeable surfaces. The upgrade to the substation and transmission line construction (including access road construction) would consist primarily of dirt or gravel. The construction of the transmission poles will not involve the removal or the addition of groundwater from the Project area. In addition, Project operation would not involve the use of groundwater. Thus, there are no expected impacts to groundwater supplies and recharge.

Altering Drainage Causing Erosion and Siltation

The Shasta River and related waterways will not be altered as a result of the Project. No substantial alteration to existing drainage patterns on and in the vicinity of the Project is expected. Therefore, no substantial erosion or siltation as a result of drainage alteration is expected on- or off-site, and therefore no significant impacts to erosion and siltation on or off-site are expected.

Altering Drainage Causing Flooding

Alteration of streams, rivers or a substantial effect on drainage patterns will not occur during construction or operation of the Project. Some vegetation removal and soil disturbance will occur during clearing of tower areas, staging areas, and access roads, resulting in the potential for increased stormwater runoff that could lead to flooding. However, implementation of the best management practices (BMPs) associated with a SWPPP will minimize the potential for surface runoff and reduce the potential for on- or off-site flooding to a less than significant level.

In addition, the Project is not located near a dam or levee and is not involved in the construction or modification to a dam or levee that could cause flooding on or off-site of the Project area. The Dwinell Dam is located on the north eastern side of Lake Shastina, and approximately 4.75 miles from the Project. The location of the site will not be at risk of significant harm due to dam failure as Dwinell Dam empties to the north east. Therefore, the Project will not expose people or structures to a significant risk of loss, injury or death involving flooding.

Stormwater Runoff

The Project will increase runoff in some areas as a result of construction. However, these areas are small and are located mostly in open space and rural areas that do not have stormwater drainage systems. Impacts associated with stormwater drainage capacity are therefore less than significant. Furthermore, the impacts associated with minor additional sources of runoff would be less than significant with implementation of basic Project construction BMP's as will be outlined in the Project SWPPP.

Water Quality

The potential for substantially degrading water quality as a result of the Project will be reduced to a less than significant impact with the implementation of BMP's associated with the SWPPP.

Flood Hazard Areas

No housing will be constructed as a result of this Project and will therefore not place or move any housing within a 100 year floodplain. However, several sections of Line 1 to be upgraded are currently located within the 100-year floodplain. No sections of the new 1.6 miles of 115 kV are located within the 100-year floodplain. New poles from the upgrade will be of the same diameter and will be direct embedded into the ground in the same manner and the same location as the existing line. The Project will therefore not result in significant impact to impeding or redirecting flood flows within the 100 year floodplain.

Inundation

The Project is not located near a large body of water nor is it subject to inundation by seiche or tsunami and would therefore have no impact from the potential to be inundated. Local areas in the Project area may experience mudflow hazards. However, mudflows will not occur at a level to cause destruction or inundation of the facility due to the distance of the hills from the Project site. Landslides and unstable areas are discussed in greater detail within Chapter 9 Geology and Geohazards and would be less than significant.

10.4 References

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CHAPTER 11 LAND USE AND AGRICULTURE

11.1 Introduction

This chapter describes land use, recreation, and agriculture resources within the Project area and analyzes potential impacts to these resources from construction and operation of Project facilities. The Project will have less than significant land use and agricultural resources impacts because of the Project's extensive use of existing overhead utility corridor right-of-way, as well as because of the amount of the surrounding land classified as agriculture. The Project is compatible with applicable land use plans and policies adopted by local agencies responsible for land use planning in the Project area.

11.1.1 Methods

Various documents, such as recent aerial photography provided by PacifiCorp, county general plans and zoning ordinances/maps and environmental impact reports for other projects in the area were reviewed to complete this land use analysis. Discussions with county planners were also conducted to complete this analysis. In addition, field visits were conducted along the transmission line route and at the substation sites where public access was available, as well as on private parcels where access was granted. Source documents are listed at the end of this chapter.

11.2 Environmental Setting

11.2.1 Jurisdictions

The California Public Utilities Commission (CPUC) has sole and exclusive jurisdiction over the siting and design of the Project because it authorizes the construction and maintenance of investor-owned public utility (IOU) facilities. Although such projects are exempt from local land use and zoning regulations and permitting, General Order No. 131-D, Section III.C requires "the utility to communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any non-discretionary local permits." As part of its environmental review process, PacifiCorp considered local and state land use plans and policies, and local land use priorities and concerns.

As shown in Figure 11-1, the proposed Project lies within the unincorporated area of Siskiyou County.

11.2.2 Existing Land Use

Siskiyou County is located in the north-central part of California adjacent to the State of Oregon. As of the census of 2000, there were 44,301 people, 18,556 households, and 12,228 families residing in the county. The Siskiyou County Economic Development Council projects that the county's population in 2020 will be 53,900, amounting to an increase of more than 21% over current figures. As noted in Table 11-1, there are a wide range of land uses in Siskiyou County; however, woodlands and open space account for a majority of the acreage. A portion of the unincorporated community of Grenada (population 351) is located in the northern Project area while the City of Weed (population 2,978) is located in the near vicinity of the southern Project area.

Table 11-1. Land Use*

Type of Use	% of Total
Agriculture (Cropland and Pasture)	12.1
Dry Grass Land	11.2
Barren and Sage	19.3
Woodlands	55.3
Water Bodies, Marshland	0.8
Urban (Settlement areas including roadways and industry)	1.3

* Includes incorporated and unincorporated county, excluding land in public ownership.

Source: Siskiyou County General Plan Land Use and Circulation Element (1980)

As shown in Table 11-1, private woodland holdings account for the largest individual land use category, an estimated 55.3% of the area. Commercial timber stands include: ponderosa pine, sugar pine, western white pine, Jeffrey pine, Douglas fir, white fir, red fir, incense cedar, mountain hemlock Brewer spruce, lodgepole pine and knobcone pine. In 2003, Siskiyou County ranked second among the State's counties in timber volume (million board feet), total agricultural value (including timber), timber value, and timber percentage of total agricultural value.

Agriculture (crops and livestock) is also found in Siskiyou County. Field crops, such as alfalfa, hay, wheat and forage, provide the highest proportion of agricultural income to the county.

Land within the Project area has been classified as Important Farmland and Conservation Reserve Program (CRP) land.

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) was established in 1982 to continue the Important Farmland mapping efforts begun in 1975 by the U.S. Department of Agriculture, Soil Conservation Service (USDA-SCS). The Important Farmland Maps identify five agriculture-related categories: prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, and grazing land. Each is summarized below, based on A Guide to the Farmland Mapping and Monitoring Program (1994), prepared by the Department of Conservation.

Prime Farmland - Prime farmland is considered land with the best combination of physical and chemical features able to sustain the long-term production of agricultural crops. The land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. The land must have been producing irrigated crops at some time during the two update cycles (a cycle is equivalent to 2 years) prior to the mapping date of 1998 (or since 1994).

Farmland of Statewide Importance - Farmland of statewide importance is considered land similar to prime farmland, but with minor shortcomings, such as greater slopes or with less ability to hold and store moisture. The land must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date (or since 1994).

Unique Farmland - Unique farmland is land of lesser quality soils used for the production of the State's leading agricultural crops. The land is usually irrigated, but may include non-irrigated orchards or vineyards, as found in some climatic zones in California. The land must have been cultivated at some time during the two update cycles prior to the mapping date (or since 1994).

Farmland of Local Importance - Farmland of local importance is land of importance to the local agricultural economy, as determined by each County's Board of Supervisors and a local advisory committee. Farmland of local importance in Siskiyou County includes dryland or sub-irrigated

hay and grain and improved pasture for forage species; these dry farmed lands commonly have inclusions of uncultivated shallow, rocky, or steep soils; farmlands presently irrigated but which do not meet the soil characteristics of Prime Farmland or Farmland of Statewide Importance; areas currently shown as Prime Agricultural Land in the Siskiyou County General Plan; areas under contract as Agricultural Preserves in Siskiyou County (currently mapped only for the Scott-Shasta-Butte Valley and Tulelake soil survey areas); other agricultural land of significant importance to the county (currently mapped only for the Scott-Shasta-Butte Valley and Tulelake soil survey areas); areas previously designated by soil characteristics as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance that have since become idle; lands enrolled in the U.S. Department of Agriculture's Conservation Reserve Program.

Grazing Land - Grazing land is considered land on which the existing vegetation, whether grown naturally or through management, is suited to the grazing of livestock. The minimum mapping unit for this category is 40 acres.

Important Farmland Maps show the relationship between the quality of soils for agricultural production and the land's use for agricultural, urban, or other purposes. A biennial map update cycle and notation system employed by FMMP captures conversion to urban land while accommodating rotational cycles in agricultural use. Table 11-2 depicts the Land Use Conversion for Siskiyou County.

Table 11-2. Siskiyou County 2000-2002 Land Use Conversion

County Summary and Change by Land Use Category

LAND USE CATEGORY	TOTAL ACREAGE INVENTORIED		2000-02 ACREAGE CHANGES			
			ACRES LOST (-)	ACRES GAINED (+)	TOTAL ACREAGE CHANGED	NET ACREAGE CHANGED
	2000	2002				
Prime Farmland	92,982	92,640	2,599	2,257	4,856	-342
Farmland of Statewide Importance	30,588	30,586	1,069	1,067	2,136	-2
Unique Farmland	35,034	36,499	1,255	2,720	3,975	1,465
Farmland of Local Importance	652,039	647,005	10,427	5,393	15,820	-5,034
IMPORTANT FARMLAND SUBTOTAL	810,643	806,730	15,350	11,437	26,787	-3,913
Grazing Land	376,205	373,999	2,965	759	3,724	-2,206
AGRICULTURAL LAND SUBTOTAL	1,186,848	1,180,729	18,315	12,196	30,511	-6,119
Urban and Built-up Land	13,167	15,379	1,325	3,537	4,862	2,212
Other Land	62,878	66,785	494	4,401	4,895	3,907
Water Area	18,399	18,399	0	0	0	0
TOTAL AREA INVENTORIED	1,281,292	1,281,292	20,134	20,134	40,268	0

Source: California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program

The CRP is a voluntary program for agricultural landowners and operators, who receive annual rental payments and cost-share assistance to establish long-term, resource-conserving covers on eligible land. Participants enroll in CRP contracts for 10 to 15 years. The Commodity Credit Corporation (CCC), through the Farm Service Agency (FSA), administers the program. Siskiyou County land enrolled in the CRP totaled approximately 1,000 acres for fiscal year 2004 (September 30, 2004).

The term 'Prime' as it refers to rating for agricultural uses has two meanings in California. FMMP determines the location and extent of 'Prime Farmland' as described above; while under

the state's Williamson Act, land may be enrolled under the 'Prime Land' designation if it meets certain economic or production criteria.

The Project crosses several categories of Important Farmland, as defined above. The following table, Table 11-3, depicts specific designations in relation to the location of the existing Line 1 right-of-way. The new 115 kV line would cross approximately 0.2 miles of Farmland of Statewide Importance, and 1.4 miles of Farmland of Local Importance. Important Farmland is also graphically depicted in Figure 11-2.

Table 11-3. Important Farmland Crossed by the Project (by pole structure)

Pole Structure(s) (number)	Important Farmland Classification
3/24 – 6/24	Farmland of Statewide Importance
6/24 – 10/24	Farmland of Local Importance
10/24 – 12/24	Farmland of Statewide Importance
12/28 – 17/28	Prime Farmland
14/29 – 18/29	Farmland of Statewide Importance
18/29 – 17/30	Prime Farmland
17/30 – 18/42	Farmland of Local Importance
18/42 – 4/43	Farmland of Statewide Importance
4/43 – 12/43	Farmland of Local Importance
12/43 – 13/43	Farmland of Statewide Importance
13/43 – 1/45	Farmland of Local Importance
1/45 – 4/45	Farmland of Statewide Importance
4/45 – 9/45	Farmland of Local Importance

Williamson Act

The California Land Conservation Act, also known as the Williamson Act, was adopted in 1965 in order to encourage the preservation of the state's agricultural lands and to prevent their premature conversion to urban uses. In order to preserve these uses, the Act established an agricultural preserve contract procedure by which any county or city within the state taxes landowners at a lower rate, using a scale based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. In return, the owners guarantee that these properties remain under agricultural production for a ten-year period. The contract is renewed automatically unless the owner files a notice of non-renewal. In this manner, each agricultural preserve contract (at any given date) is always operable at least nine years into the future. Currently, approximately 70 percent of the state's prime agricultural land is protected under this Act. The Williamson Act sets up the following land use categories:

Williamson Act – Prime Agricultural Land

Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):

1. Land which qualifies for rating as class I or call II in the Natural Resources Conservation Service land use capability classifications;
2. Land which qualifies for rating 80 to 100 in the Storie Index Rating;

3. Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States of Agriculture;
4. Land planted with fruit or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
5. Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

Williamson Act – Non-Prime Agricultural Land

This classification includes land which is enrolled under a California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime land is defined as Open Space Land of Statewide Significance under the California Open Space Subvention Act (see California government Code Section 16143), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.

Williamson Act Land crossed by the Project (pole structures from northwest to northeast) is presented in Table 11-4. Williamson Act Land is also graphically depicted in Figure 11-3.

Table 11-4. Williamson Act Land Crossed by the Line 1 115 kV Transmission Line Project (by pole structure)

Pole Structure(s) (number)	Important Farmland Classification
3/24 - 5/24	Prime Agricultural Land
12/28 – 16/28	Non-Prime Agricultural Land
12/31 – 13/32	Non-Prime Agricultural Land
13/32 – 15/32	Prime Agricultural Land
15/32 - 10/33	Non-Prime Agricultural Land
14/33 – 16/33	Prime Agricultural Land
16/33 – 5/34	Non-Prime Agricultural Land
5/34 – 9/34	Prime Agricultural Land
9/34 – 10/34	Non-Prime Agricultural Land
10/34 – 13/34	Prime Agricultural Land
13/34 – 16/35	Non-Prime Agricultural Land
17/35 – 5/36	Non-Prime Agricultural Land
6/36 – 2/37	Non-Prime Agricultural Land
2/37 – 8/37	Prime Agricultural Land
8/37 – 12/37	Non-Prime Agricultural Land
12/37 – 15/37	Prime Agricultural Land
15/37 – 18/37	Non-Prime Agricultural Land
18/37 – 2/38	Prime Agricultural Land
2/38 – 11/38	Non-Prime Agricultural Land
11/38 – 12/38	Prime Agricultural Land
12/38 – 13/38	Non-Prime Agricultural Land
13/38 – 2/39	Prime Agricultural Land
2/39 – 2/40	Non-Prime Agricultural Land
2/40 – 4/40	Prime Agricultural Land
4/40 – 10/40	Non-Prime Agricultural Land
10/40 – 11/40	Prime Agricultural Land
11/40 – 3/41	Non-Prime Agricultural Land
3/41 – 9/41	Prime Agricultural Land
9/41 – 12/41	Non-Prime Agricultural Land
12/41 – 14/41	Prime Agricultural Land
14/41 – 8/42	Non-Prime Agricultural Land
8/42 – 3/43	Prime Agricultural Land
3/43 – 4/43	Non-Prime Agricultural Land
4/43 – 5/43	Prime Agricultural Land
5/43 – 13/43	Non-Prime Agricultural Land
13/43 – 14/43	Prime Agricultural Land
14/43 – 8/44	Non-Prime Agricultural Land
8/44 – 11/44	Prime Agricultural Land
11/44 – 21/44	Non-Prime Agricultural Land
21/44 – 9/45	Prime Agricultural Land

Transmission Line Upgrade

Land uses along the upgrade portion of the Project primarily include rural residences, agricultural land, and transportation (Interstate 5 and various Siskiyou County roadways). Most of the land is privately owned and under the jurisdiction of Siskiyou County. Important Farmland (prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance) can all be found in the Project area. Both prime and non-prime Williamson Act land were determined to be within the Project area as well. Grazing land and CRP land are also located in the Project area. CRP acres are located on both sides of the freeway around the Lucerne Substation and Interstate 5 area.

New 115 kV Transmission Line

Land uses crossed by the new 115 kV transmission line include rural residences, agricultural land, and transportation (various Siskiyou County roadways). Most of the land is privately owned and under the jurisdictions of Siskiyou County and the City of Weed. Important Farmland (farmland of statewide importance and farmland of local importance) can be found in the Project area. Both prime and non-prime Williamson Act land were determined to be within the Project area as well. Grazing lands are also encountered in the Project area.

Substation Upgrade

The land uses that surround the Lucerne Substation include rural residences, agricultural land, and various roadways.

11.2.3 Planned Land Use

State law, Section 65302(a) requires general plan land use elements to identify the proposed general distribution, location, and extent of the uses of the land for housing, business, industry, open space and other categories of public and private land uses. The law also requires that the land use element be consistent with the housing element (Section 65300). Typically, most local governments fulfill this requirement by including text and a land use category.

Siskiyou County General Plan

The Siskiyou County General Plan currently consists of eleven elements (land use, circulation, housing, open space, conservation, safety, noise, energy, geothermal, scenic highway, and seismic). The General Plan does not provide a general plan land use map that shows the boundaries of specific planned land use categories. Instead, physical constraints based on natural resources are mapped and general development policies based on these constraints have been adopted. It is the intent of the General Plan to direct future development to areas with minimal physical constraints, without great public service costs, with the least environmental effects, and which will not displace or endanger the County's critical natural resources. As long as a project does not violate these policies, it will be deemed consistent with the County's general plan. If a project is inconsistent with a mapped resource area and its policies, it will be automatically rejected by the County.

Goals and policies relating to transmission lines were not identified in the Land Use Element. The Energy Element (1993) however, evaluated Siskiyou County energy uses and opportunities and established an energy strategy to meet the County's future needs. It also established goals and policies to carry out the strategy. Relevant goals and policies include the following:

Energy Facilities

Goal - Thorough and expeditious evaluation of energy facility proposals; siting of such facilities in a timely, orderly, and environmentally-sound manner; and assurance of the compatible and environmentally-sound operation, maintenance, and eventual abandonment of such facilities.

Policy 32 – In the absence of compelling or contravening considerations, energy facilities should not be sited in sensitive natural resource areas, including: unstable geologic or soil areas; floodplains; wetlands; habitat of fish or wildlife species of rare, threatened, endangered, or special concern status; known paleontological, archeological, ethnographic, or historical sites; or designated scenic areas. If siting in such areas is unavoidable, it shall be limited to the smallest possible portion of the energy facility in question, and shall be mitigated in accordance with CEQA.

Policy 33 – Wherever possible, increased demand for energy transmission shall be accommodated with existing transmission facilities. Where new capacity is necessary, priority shall be given to upgrading or reconstruction of existing facilities, followed by new construction along existing facilities, followed by new construction along existing transmission or other utility corridors. Any new transmission facilities shall be sited so as to minimize interference with surrounding land-uses, and in ways that minimize their visual impacts.

Siskiyou County Zoning Ordinance

While the County has not designated land uses on a general plan map, it does use zoning to regulate how land can be used. County zoning districts provide more detailed regulations about the type of uses that can occur within land use designations. Nevertheless, Zoning Districts within the Project area have not specifically addressed transmission lines, and the Siskiyou County Planning Department has informed PacifiCorp representatives that the 115 kV transmission line Project will not require a use permit or a conditional use permit (personal communication with Rowland Hickel, Siskiyou County Planner, October 12, 2005). Thus no zoning permission will be required to authorize construction of the Project.

11.2.4 Planned and Proposed Development

No planned and proposed Siskiyou County development applications that will conflict with the Project were identified within the Project area (personal communication with Rowland Hickel, Siskiyou County Planner, October 12, 2005).

11.2.5 Recreation

No parks or other recreational facilities are located within the Project area.

11.3 Environmental Impacts

11.3.1 Significance Criteria

Significance criteria for land use, recreational, and agricultural impacts were derived from Appendix G of the CEQA Guidelines. Impacts to land use, recreation, or agriculture resources will be significant if they result in:

- Conversion of land designated as prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use.
- Conflicts with existing zoning for agricultural use or Williamson Act contract.
- Changes to the environment resulting in conversion of designated farmland to non-agricultural use.
- Substantial conflicts with applicable land use plans, policies, or regulation of an agency with jurisdiction over the project.
- Physical division of an established community.

- Conflicts with an applicable habitat conservation plan or natural community conservation plan.
- An increase in the use of existing parks or other recreational facilities.
- The construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

Overview of Impact Analysis

The proposed transmission line would be located primarily within an established PacifiCorp right-of-way. 1.6 miles of new right-of-way must be obtained to implement the Project as proposed. PacifiCorp is currently working with affected land owners to secure existing right-of-way easements and new rights-of-way that will be needed. Land use impacts created because of construction efforts would be mitigated by returning the land to as close to the pre-construction condition as possible, or as agreed upon with property owners.

11.3.2 Potential Impacts and Mitigation Measures

Conversion of Land Designated as Prime or Unique Farmland, or Farmland of Statewide Importance

Transmission Line Upgrade - The Project will not consume land designated as Prime Farmland or Farmland of Statewide Importance. The Project will not cause conversion of agricultural lands to non-agricultural uses, as the transmission line allows for many agricultural uses under and adjacent to the line. Activities such as grazing and the movement of livestock will be able to continue around the poles, underneath the transmission lines, and over any necessary access roads. The Project will not conflict with existing zoning for agricultural use, as it will primarily replace an existing transmission line in an existing utility corridor. Agriculture is generally a compatible land use with utility corridors.

New 115 kV - The Project will consume a very small amount of agricultural (grazing) land classified as Farmland of Statewide Importance for the construction of permanent access roads and pole placement (0.22 acres). There are large amounts of designated Farmland of Statewide Importance in the vicinity of the Project, as well as in Siskiyou County overall (30,586 acres in 2002), and the County has strong agriculture preservation policies in its General Plan. The small reduction in the amount of designated Farmland of Statewide Importance due to this Project is low when seen in this context and impacts are considered less than significant. PacifiCorp will compensate the property/farm owners for the small amounts of agricultural land that will be removed because of this Project.

Substation - Because Lucerne substation is already in operation, and the additional equipment will be installed within the existing property line, there will be no changes in land use and therefore no impacts on land use.

Conflict with Existing Zoning for Agricultural Use or Williamson Act Contracts

Transmission Line Upgrade - The upgrade component of the Project occurs on both Prime and Non-Prime Williamson Act land (see Figure 11-3). Government Code 51238 states that electrical facilities are a compatible Williamson Act use. The placement of transmission poles on land currently under Williamson Act contract will not remove the land from Williamson Act contract status. Thus, there will be no impact related to Williamson Act status.

The Project will not cause conversion of agricultural lands to non-agricultural uses, as the transmission line allows for many agricultural uses under and adjacent to the line. The Project will not conflict with existing zoning for agricultural use, as it will primarily replace an existing transmission line in an existing utility corridor. Agriculture is generally a compatible land use with utility corridors.

New 115 kV - The new 115 kV line will occur on both Prime and Non-Prime Williamson Act land. Government Code 51238 states that electrical facilities are a compatible Williamson Act use. The placement of transmission poles on land currently under Williamson Act contract will not remove the land from Williamson Act contract status. Thus, there will be no impact related to Williamson Act status.

The Project will not cause conversion of agricultural lands to non-agricultural uses, as the transmission line allows for many agricultural uses under and adjacent to the line. The Project will not conflict with existing zoning for agricultural use. Agriculture is generally a compatible land use with utility corridors.

Substation - Because Lucerne substation is already in operation, and the additional equipment will be installed within the existing property line, there will be no changes in land use and therefore no impacts on land use.

Conversion of Designated Farmland to Non-Agricultural Use

Transmission Line Upgrade - Because the construction staging area and pulling and tensioning sites are located on agricultural land (grazing land), Project construction will temporarily reduce the amount of land available for grazing by about 5.02 acres. Due to the large amount of land available for, and currently supporting, agricultural purposes in the immediate Project vicinity and within Siskiyou County (373,999 acres in 2002), and because PacifiCorp's use of this land for transmission line construction will be temporary, property owners will be compensated, and most of the lands (except for about 11.16 acres that will be needed for permanent access roads) will be reclaimed and can be returned to agricultural production or grazing land after construction, the impact will be less than significant.

Operation of the upgraded transmission line will be consistent with the existing condition. New transmission poles will be constructed in the same location as the current poles, and will therefore pose no additional interference to existing agricultural practices. Therefore, no significant impacts will result.

New 115 kV - Project construction will temporarily reduce the amount of land available for agricultural purposes by about 2.46 acres; however there are large amount of land available for, and currently supporting, agricultural purposes in the immediate Project vicinity. PacifiCorp's use of this land for transmission line construction will be temporary and property owners will be compensated for the use. Most of the lands (except for about 4.71 acres that will be needed for permanent access roads and pole footprints) will be reclaimed and can be returned to agricultural production or grazing land after construction. The impact will be less than significant.

Operation of the new transmission line will not pose significant additional interference to existing agricultural practices. Where reasonable, the new line has been sited along property boundaries and agricultural field boundaries to minimize potential interference with existing agricultural use, and potential future agricultural uses, if they were to change (i.e., mechanically irrigated farmland). Therefore, no significant impacts will result.

Substation - Modification of the Lucerne substation will occur within the existing boundary and fence line as described in Chapter 2, and will not change any existing land uses. As a result, construction and operation at the substation will not impact land use.

Consistency with Land Use Plans

The proposed Project will primarily replace an existing transmission line in an established utility corridor. Goals and policies relating to transmission lines were not identified in the Siskiyou County General Plan Land Use Element. The Energy Element (1993) however, specifically discusses the siting of transmission lines. Relevant goals and policies included the following:

ENERGY FACILITIES

Goal - Thorough and expeditious evaluation of energy facility proposals; siting of such facilities in a timely, orderly, and environmentally-sound manner; and assurance of the compatible and environmentally-sound operation, maintenance, and eventual abandonment of such facilities.

Policy 32 – In the absence of compelling or contravening considerations, energy facilities should not be sited in sensitive natural resource areas, including: unstable geologic or soil areas; floodplains; wetlands; habitat of fish or wildlife species of rare, threatened, endangered, or special concern status; known paleontological, archeological, ethnographic, or historical sites; or designated scenic areas. If siting in such areas is unavoidable, it shall be limited to the smallest possible portion of the energy facility in question, and shall be mitigated in accordance with CEQA.

Policy 33 – Wherever possible, increased demand for energy transmission shall be accommodated with existing transmission facilities. Where new capacity is necessary, priority shall be given to upgrading or reconstruction of existing facilities, followed by new construction along existing facilities, followed by new construction along existing transmission or other utility corridors. Any new transmission facilities shall be sited so as to minimize interference with surrounding land-uses, and in ways that minimize their visual impacts.

The Project (transmission line upgrade, new 115 kV, and substation upgrade) has been designed and will be constructed in a way that avoids sensitive natural areas, as listed above in Policy 32 of the Energy Element. Furthermore, specific mitigation measures, as described throughout this PEA in each relevant environmental resource chapter will be implemented to reduce any potentially significant impact to less than significant.

The transmission line upgrade component of the Project involves the upgrading or reconstruction of a transmission line and uses an existing overhead utility corridor right-of-way and is thus in compliance with Policy 33 of the Energy Element. Upgrading of the Lucerne substation will likewise occur within existing property lines and is thus in compliance with Policy 33 of the Energy Element. The new 115 kV line will be located within a new right-of-way for approximately 1.3 miles, and would parallel an existing 69 kV transmission line for approximately 0.3 miles. Other alternatives were evaluated for this component of the Project and found to have greater impacts on farmland and residences as well as greater visual impacts. The proposed option is designed to minimize interference with surrounding land uses, and to incorporate mitigation measures to reduce impacts, and is thus in compliance with Policy 33 of the Energy Element.

As such the Project will be deemed consistent, or not in conflict, with the Siskiyou County General Plan.

Division of an Established Community

The Project (transmission line upgrade, new 115 kV, and substation upgrade) will not physically divide an established community. The proposed project will, for the most part, replace an existing transmission line along an existing right-of-way and will not displace any existing facilities. Construction of the new line will traverse open space and not impede movement under it. Construction at Lucerne Substation will be within the fence line. Thus, there will be no impact dividing an existing community.

Consistency with Habitat Conservation Plans or Natural Community Conservation Plans

The Project (transmission line upgrade, new 115 kV, and substation upgrade) will not conflict with any habitat conservation plan or natural community conservation plan, and will therefore

have no impact associated with such plans. For more information about natural habitats in the Project area, please see Chapter 6 - Biological Resources.

Increase Use, Construct, or Expand Existing Parks or Other Recreational Facilities

The Project (transmission line upgrade, new 115 kV, and substation upgrade) will not result in the increased use of existing or regional parks or other recreation facilities, and will have no such impact on parks and facilities. The Project will not include any recreational facilities or require the construction or expansion of recreational facilities, and will have no impact on the environment associated with any such expansion or construction.

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CHAPTER 12 RADIO AND AUDIBLE NOISE

12.1 Introduction

12.1.1 Audible Noise

Noise sources and levels are described and inventoried in this section for the Project corridor. Noise is generally defined as unwanted sound. The degree to which noise can impact the human environment ranges from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects).

The basic unit of measurement for sound is the decibel (dB). The decibel system of measuring sound provides a simplified relationship between the intensity of sound and its perceived loudness to the human ear. The decibel scale is logarithmic. Therefore, sound intensity increases or decreases exponentially with each decibel of change. For example, a 10 dB level is 10 times more intense than one dB, while a 20 dB level is one hundred times more intense, and a 30 dB level is one thousand times more intense. In terms of the sensitivity of human hearing, there are three noise-rating scales (denoted as "A," "B," and "C") that are classified in terms of sound level frequencies. The rating for power line noise is "A," referred to as "dBA." Levels that are considered acceptable or unacceptable are generally associated with various environments. Lower levels are expected in rural or suburban areas whereas higher levels will be expected in commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding average daytime levels. The day-to-night difference in rural areas away from roads and other human activity can be considerably less. Noise levels above 45 dBA at night can result in the onset of sleep interference effects (EPA 1974). The Project is in a rural area. Table 12-1 provides the ranges of common sounds that people could experience within the Project corridor

Table 12-1. Typical Ranges of Common Sounds

Sources of Noise	Noise Level Ranges (dBA)
Threshold of Pain	130 – 140
Pneumatic Chipper	120 – 130
Motorcycle	80 – 110
Emergency Diesel Power Generator	55-75
Power lawnmower	80 – 95
Pleasure Motorboat	75 – 115
Automobile (At 50 Feet)	60 – 90
Conversational Speech	60 – 70
Refrigerator	45 – 70
Living Room (Suburban Area)	40 – 50
Bedroom at Night	20 – 30
Threshold of Hearing	0 – 10

Source: EPA, 1974

Sound level impacts for noise sensitive areas are based on an A-weighting of sound intensities that best reflects the human ear's reduced sensitivity to low frequencies. These sound intensity levels correlate well with human perceptions of the annoying aspects of noise. Noise environments and consequences of human activities are usually well represented by an equivalent A-weighted sound level over a given time period (L_{eq}) or by the average day-night noise levels (L_{dn}).

12.1.2 Radio Noise

Radio and television interference are denoted as RI and TVI, and collectively referred to as Radio Noise (RN). RN is a phenomenon produced by both corona and sparking and can vary greatly based on weather conditions. Corona occurs when the electrical field at a particular point reaches a sufficiently high value to cause ionization of the surrounding air. Corona is primarily a concern on transmission lines operating at 345 kV and higher and in conjunction with foul weather because it is more likely to occur when water droplets are on or dripping off the transmission line conductors. Corona on transmission line causes power loss, radio, and television interference and audible noise near the transmission line. The effect of corona on RN is most evident in the AM broadcast band of 0.535 to 1.605 MHz. Generally, new transmission lines are designed to reduce corona effects and only broadcast signals in weak signal areas show interference due to coronal activity during foul weather. Cable and satellite systems are not susceptible to corona.

Sparking or gap discharge occurs between two elements of the transmission line conductor that are poorly connected. This phenomenon is more apparent during dry weather because water droplets on the line tend to reduce the resistance in the connection allowing current to flow freely. Sparking interferes with broadcasts into the UHF range (above 300MHz), which makes sparking the primary cause of television interference. It is estimated, by experience, that 90-95 percent of all RN complaints are sparking related.

12.1.3 Regulatory Framework

No federal, state or county noise standards or guidelines exist that directly regulate noise from operation of electrical transmission lines and substation facilities.

However, the Siskiyou County General Plan – Noise Element provides audible noise standards appropriate to the Project. The General Plan identifies land use compatibility for community noise as shown below in Table 12-2. According to the General Plan, residences are the most sensitive land use. It sets a noise limit for residential land use of 60 dBA. For new development within a residential land use area, noise limits range from 60 to 65 dBA with noise abatement features included.

Table 12-2 Siskiyou County General Plan Noise Element – Land Use Compatibility for Exterior Community Noise

Land Use Category	Noise Ranges (L_{dn} , dBA)			
	1	2	3	4
Passively Used Open Space (Auditoriums, Parks, Etc.)	50	50-55	55-70	70
Residential, Motels, Hospitals, Tec.	60	60-65	65-75	75
Office Buildings, Light Commercial, Heavy Commercial, Etc.	65	65-70	70-75	75

Noise Range 1 – Acceptable land use, no noise abatement required.

Noise Range 2 – New construction or development, noise abatement features included.

Noise Range 3 - New construction or development, noise abatement only after detailed analysis of noise reduction requirements.

Noise Range 4 – New construction or development not allowed.

*Day-night average sound level that is equal to the 24 hour A-weighted equivalent sound level with a 10 decibel penalty applied to nighttime levels.

12.2 Environmental Setting

12.2.1 Existing Noise Sources

For the existing transmission line corridor and the area around Lucerne Substation, the levels for noise sources in vicinity to the line are as follows:

Interstate 5 (I-5) – The measured L_{dn} noise level from I-5 ranges from 75 dBA at a distance of 176 feet from the highway to 60 dBA 458 feet from the highway. I-5 crosses the transmission corridor in two locations, one location is south of Lucerne Substation and one location is south of Grenada. I-5 is less than 0.5 miles from the corridor in several unpopulated areas of the corridor.

State Route 97 - The measured L_{dn} noise level from Highway 97 ranges from 75 dBA at a distance of 118 feet from the highway to 60 dBA 400 feet from the highway. State Highway 97 is located near the southern end of the Project, and ranges between over 1 mile away to just several hundred feet from the proposed new 115 kV transmission that will interconnect into the Weed Junction Substation.

Ambient natural noise sources also include wind, which is much more common than calm conditions throughout the Project area, and is expected to be in the range of 45 to 55 dBA.

12.2.2 Sensitive Receptors

Noise-sensitive receptors include residential areas, hospitals, schools, and businesses where excessive noise may cause annoyance or loss of business. The majority of the Project will traverse agricultural lands and open-space, but does include some rural residential areas as described below.

Residences - Most of the residences within the Project area are located near Grenada and Weed. Other scattered residences are located throughout the Project area. There are approximately seven residences within 100 feet of the transmission line in the area of Grenada. Within the southern area of the Project there are four residences within 100 feet of the transmission center line. The new 115 kV route is not located within 100 feet of any residences.

Recreation Areas - There is a park on the north side of Weed (south end of the Project study area). The park is approximately 1,000 feet from the transmission line

12.3 Environmental Impacts

12.3.1 Significance Criteria

The following criteria were used for determining if the Projects impacts will be significant or not significant. The criteria were developed using the CEQA Guidelines, Appendix G.

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

12.3.2 Potential Noise Impacts

Potential noise impacts as a result of the Project's construction and operation will be less than significant as evaluated based upon the significance criteria listed above. Specific explanations of the potential impact for each significance criteria are provided within Chapter 4 of this PEA. All potential impacts will be less than significant. Therefore, no mitigation is necessary. However, as described below, PacifiCorp will implement some measures that will further reduce potential noise impacts within areas of sensitive receptors, such as residences.

Transmission Line Operation - A typical range of noise levels (based on rain conditions) for the single circuit 115 kV transmission line is from 36 dBA at the center of the line to 30 dBA at the edge of right-of-way (distance of 50 feet). Operation of transmission lines could generate audible noise levels from corona activity as high as 32 dBA at the closest sensitive receptors (in this case less than 40 feet for the upgrade, and greater than 500 feet for the new line) under adverse weather conditions. When compared to the existing 69 kV transmission line, the new 115 kV upgrade will not generate an ambient noise level increase of more than 3 dBA. Thus, operation of the Project's transmission lines will not result in the generation of noise levels above 60 dBA, which is the Siskiyou County noise standard for the area. Therefore potential impacts from the operation of the transmission line will be a less than significant impact. No mitigation is necessary.

Substation Audible Noise - Sources of audible noise within a substation include equipment such as transformers, reactors, voltage regulators, circuit breakers and other intermittent noise generators. Among these sources, transformers and reactors have the greatest potential for producing noise. Reactors are similar to a transformer in terms of audible noise. The broadband sound from fans, pumps and coolers has the same character as ambient sound and tends to blend in with the ambient noise. In the substation, the electrical equipment (as identified above) can be classified as point noise sources. For point sources, each doubling of the distance between the source and the point of measurement will result in approximately a 6 dBA reduction in noise. This is equivalent to a decrease of 20 dBA for each increase in distance from the source by a factor of ten. In the area of Lucerne Substation, there are several existing residences nearby. However, the proposed upgrade of equipment and the operation of the Lucerne Substation will not result in any appreciable increase to the existing average ambient noise levels. Therefore, a significant impact will not result. No mitigation is required.

Construction Noise - On-site construction noise will occur primarily from construction equipment (e.g., bulldozers, backhoes, cranes). Anticipated noise levels from this equipment are shown in Table 12-3 and will range from 70 dBA to 100 dBA at a distance of approximately 50 feet. It should be noted that noise levels are calculated based on the assumption that noise from a localized source is reduced by approximately 6 dBA with each doubling of the distance from the source of noise. As illustrated by the noise levels shown in Table 12-3, intermittent use of construction equipment will generate noise levels in excess of 65 dBA in or adjacent to residential areas, where they occur adjacent to the existing and proposed right-of-way. However, these levels will be short in nature and will occur during the day time hours only. When compared to existing noise sources already occurring within the area (i.e., trains, vehicles on roads and highways, farming equipment, etc.) these intermittent noises would not represent a significant change or impact from the existing noises within the area.

Table 12-3. Typical Construction Equipment Noise Levels

Equipment	Range of Noise Level at 50 Feet (dBA)
Earthmoving	
Front loaders/Excavators	72 - 84
Backhoes	72 - 93
Tractors	76 - 96
Scrapers/ graders	80 - 93
Pavers	86 - 88
Trucks	82 - 94
Materials Handling	
Concrete mixers/Millers	75 - 88
Concrete pumps/Spreaders	81 - 83
Cranes (movable)	75 - 86
Cranes (derrick)	86 - 88
Stationary	
Pumps	69 - 71
Generators	71 - 82
Compressors	74 - 86
Drill rigs	70 - 85

Source: WIA 1986.

Construction of the Project will primarily involve intermittent use of a track auger and crew cab pickup truck and may be either temporary or repetitive in nature. The majority of the transmission line construction activities will take place in open space and agricultural lands, though some construction activities will be in and adjacent to residential areas. Construction activities near residential areas will generally be limited to daytime hours (between 8:00 a.m. and 7:00 p.m.). In addition, construction-related noise will be minimized by:

- Complying with manufacturers' muffler requirements.
- Shutting down engines when not in use, where applicable.
- Minimizing equipment use.

Although potential impacts from the Project will be temporary and not significant, the following mitigation measures will be implemented to further reduce the potential noise impacts to area residences:

- Compressors and other small stationary equipment will be shielded with portable barriers.
- "Quiet" equipment (i.e., equipment that incorporates noise control elements into the design, including some models of jackhammers and compressors) will be used during construction.
- Equipment exhaust stacks/vents will be directed away from buildings.
- Truck traffic will be routed away from noise-sensitive areas where feasible.

Radio Noise

For transmission lines with normal spacings and right-of-ways, a fair weather RI level of about 40 dB μ V/m (100 μ V/m) at a lateral distance of 100 feet from the outermost phase has been established as a guideline for identifying a design criteria for a RN limit (IEEE Standard 430-1991). Radio Interference levels from the 115 kV line will be less than 20 dB μ V/m under fair weather conditions. This constitutes a less than significant impact, and no mitigation is required.

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CHAPTER 13 HAZARDAS AND HAZARDOUS MATERIALS

13.1 Introduction

This chapter discusses potential hazards to the environment, public, and worker health and safety associated with the construction and operation of the Project, including potential fire hazards and releases or encounters with existing hazardous substances. With implementation of the proposed mitigation activities presented below, the Project will not result in significant impacts.

Please refer to Chapter 12 – Radio and Audible Noise, for a separate discussion of potential impacts related to induced currents and cardiac pacemakers.

13.1.1 Methods

An environmental database search report was obtained from FirstSearch Technology Corporation on October 7, 2005 (included as Appendix F to this PEA). Using the FirstSearch Technology Corporation Environmental FirstSearch report, a review of regulatory agency files to determine where potential or existing contamination could be encountered during construction of the new 1.6 mile transmission line was performed. The following environmental oversight agency database lists were searched:

- National Priority List
- Comprehensive Environmental Response Compensation and Liability Information System
- Comprehensive Environmental Response Compensation and Liability Information System Archived Sites
- Resource Conservation and Recovery Information System Treatment, Storage, and Disposal Facilities
- Resource Conservation and Recovery Information System Sites
- Emergency Response Notification System
- California Department of Toxic Substances Control Sites
- California Regional Water Quality Control Boards
- Solid Waste Information System
- Aboveground Storage Tank Listing
- California State Water Resources Control Board LUSTS Database

The database search did not cover the transmission line upgrade portion of the Project. Information regarding potential or existing contamination along the existing utility right-of-way was obtained from PacifiCorp right-of-way engineers with knowledge of the area. A review of aerial photographs provided by PacifiCorp was also conducted. Aerial photographs were examined to determine the proximity of the existing project right-of-way area to potential or existing contamination.

13.2 Regulatory Framework

The California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) regulates hazardous waste, oversees the cleanup of existing contamination, and looks for

ways to reduce the amount of hazardous waste produced in California. The DTSC regulates hazardous waste in California under the authority of the federal Resource Conservation and Recovery Act (RCRA) of 1976, and the California Health and Safety Code.

The North Coast Regional Water Quality Control Board—Region 1 (RWQCB) is responsible for protecting the beneficial uses of water resources in the Project vicinity. The RWQCB adopted its first interim Basin Plan in 1971 and has amended the Basin Plan numerous times between 1975 and 1996. The goal of the Basin Plan is to provide a definitive program of actions designed to preserve and enhance water quality and to protect beneficial uses of water in the North Coast Region. The Basin Plan is used as a regulatory tool by the Regional Water Board's technical staff. Regional Water Board orders cite the Basin Plan's water quality standards and prohibitions applicable to a particular discharge.

The Siskiyou County Health Department's Environmental Health Division's role is to protect the health and welfare of the general public and environment through prevention and control of disease and pollutants. The Environmental Health Services Division is divided into three programs: Consumer Protection, Hazardous Materials Management/CUPA and Land Use.

The Hazardous Materials Management Group implements the Unified Program (UP), at the local government level pursuant to Title 27 § 15110(a)(2). The Siskiyou County Environmental Health Division of the Public Health Department became the Certified Unified Program Agency (CUPA) on January 1, 1997. The Environmental Health Division is certified by the Cal/EPA Secretary to implement the Unified Program specified by Health and Safety Code (H&S Code) § 25404(a)(1)(A), within Siskiyou County. The CUPA program regulates underground tanks, hazardous materials (including but not limited to: hazardous substances, hazardous waste, and any material which a handler or the CUPA has reasonable basis for believing that it will be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment, H&S Code § 25501) and any unauthorized release of hazardous material. In addition, the Hazardous Material Management Group regulates medical waste and final disposal/transfer activities of solid waste.

A county-wide 911 system is in place, which is served in the unincorporated areas of the county by the Siskiyou County Sheriff's Department. The City of Weed maintains its own police department.

Fire protection is provided primarily by volunteer fire departments that are in most communities throughout the county. The following list of fire departments would respond to a fire within the Project area, depending on the exact location of the fire (Patton, 2005).

- California Department of Forestry and Fire Protection (paid)
- Weed City Fire Department (volunteer)
- Hammond Ranch Hose Company (volunteer)
- Lake Shastina Fire Department (volunteer)
- Gazelle Fire Protection District (volunteer)
- Grenada Fire Protection District (volunteer)
- Mayten Fire Protection District (volunteer)
- Yreka Fire Department (volunteer)
- South Yreka Fire Protection District (volunteer)

During the fire season the California Division of Forestry and the National Forest Service also maintain firefighting units.

13.3 Existing Conditions

The Environmental FirstSearch Report, conducted for the new transmission line (area subject to new right-of-way acquisition), did not reveal any listed hazardous materials sites. The only hazardous materials sites that were identified were within and outside the City of Weed. However, those sites were situated outside the path of the Project. Table 13-1 presents a summary of the Environmental FirstSearch Report. More detailed information from the summary can be found in the report itself (Appendix F).

Table 13-1. Summary of Environmental FirstSearch Report

Database	Updated	Radius	Site	1/8	1/4	1/2	1/2 >	ZIP	TOTALS
NPL	5-17-05	1.25	0	0	0	0	1	0	1
CERCLIS	8-01-05	1.25	0	0	0	0	0	0	0
NFRAP	8-01-05	1.25	0	0	0	0	0	0	0
RCRA TSD	6-13-05	1.25	0	0	0	0	0	0	0
RCRA COR	6-13-05	1.25	0	0	0	0	0	0	0
RCRA GEN	6-13-05	1.25	0	0	0	0	1	2	3
ERNS	12-31-04	1.25	0	0	0	0	0	27	27
State Spills	5-04-05	1.25	0	0	0	0	0	0	0
Spills-90	7-01-03	1.25	0	0	0	0	0	0	0
SWL	9-07-05	1.25	0	0	0	0	1	5	6
REG UST/AST	4-05-05	1.25	0	0	0	0	1	9	10
Leaking UST	5-10-05	1.25	0	0	0	0	2	9	11
TOTALS			0	0	0	0	6	52	58

Discussions with a PacifiCorp right-of-way engineer with knowledge of the Project area, as well as a review of aerial photography, did not indicate potential or existing contamination sources along the existing transmission line right-of-way (with the exception of a fenced wastewater pond located on the eastern edge of Grenada). However, the Project will not disturb this existing wastewater pond. Onsite surveys along the existing transmission right-of-way support the reports of the PacifiCorp engineer because those surveys revealed no visible or olfactory evidence of existing or potential contamination (e.g., stained soils, distressed vegetation, abandoned drums, etc.).

Except in residential areas (for which hazardous materials usage is generally minimal), the types of bulk hazardous materials currently stored and/or used in the Project area would most likely be predominantly petroleum hydrocarbons found in underground storage tanks, such as those at service stations or auto repair shops; or in aboveground storage tanks, such as those at farm or ranch operation centers.

13.4 Environmental Impacts

13.4.1 Significance Criteria

Standards of significance were derived from Appendix G of the CEQA Guidelines. Project impacts are considered significant if they:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous materials within 0.25 mile of a school.
- Are located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
- Are located within two miles of a public or private airport and would result in a safety hazard for people residing or working in the Project area.
- Impair implementation of or physically interfere with an adopted emergency response or evacuation plan.
- Expose people or structures to a risk of loss, injury, or death involving wildland fires.

13.4.2 Construction Impacts

The new transmission line is not located on hazardous materials sites identified in the regulatory databases searched by FirstSearch Technology Corporation. The report, however, did identify six sites in Weed. However, these sites are approximately $\frac{3}{4}$ to 1 mile south of the new transmission line corridor, and south of Highway 97, within the City of Weed. Furthermore, groundwater flows within the area of the identified sites flows to the west, based on topography in the area, and would not migrate into the Project area. Although unlikely, it is possible that previously unknown contamination could be encountered in the new transmission line right-of-way, and to a lesser extent, in the transmission line upgrade area during Project construction. In either case the Project is not expected to create a pathway to or create significant impacts to human health or the environment. However, prior to initiating Project construction in both areas, PacifiCorp will implement appropriate safety measures to ensure the safety of construction workers. All crews would be instructed about appropriate health, safety, and environmental measures to be taken should they encounter contamination. These measures would ensure that construction activities associated with the Project will not create a significant hazard to human health or the environment, resulting in a less than significant impact.

One public-use airport (Weed) is located within 2 miles of the Project. The project will involve construction of poles to a maximum height of 75 feet. The southwestern portion of the proposed Project is located within Compatibility Zone C1 and Compatibility Zone D as delineated in the Siskiyou County Airport Land Use Compatibility Plan (Figure 13-1). Compatibility Zone C1 is defined as the area commonly overflown by aircraft at an altitude of 1,000 feet or less above ground level. Included are locations beneath the air traffic pattern and pattern entry points. (A typical traffic pattern altitude is 1,000 feet above the airport elevation, although it can be lower or, especially for large airplanes, higher.) Zone D includes other areas within the airport vicinity which are overflown less frequently or at a higher altitude arriving and departing the airport. Although no effect is expected on the operation of the public-use Weed Airport, information about the Project would be brought to the attention of the Federal Aviation Administration for a hazard determination, and all measures recommended by the FAA will be implemented. For example, high-visibility devices would be installed if required by the FAA as a result of their review of that notice. Furthermore, no known private airports/airstrips are located in the Project area (according to the U.S. Department of Transportation. Federal Aviation Administration Southwest U.S. Airport/Facility Directory-1 Sep 2005 and the Klamath Falls Sectional

Aeronautical Chart-72nd Edition, April 14). For these reasons, the Project would not result in a safety hazard for people residing or working in the Project area; therefore there would be a less than significant impact.

Certain roadways in the Project area could be used as an evacuation route under some emergency scenarios. In the event of an emergency, crews will cease all work and remove any equipment that will impede the flow of traffic. Access for emergency vehicles would be maintained throughout project construction. PacifiCorp project construction activities may require temporary road closures. Appropriate traffic control plans would be followed, and permits would be obtained from the relevant authority/authorities. Therefore, the project would not result in inadequate emergency access.

Portions of the existing Project corridor will be constructed through open grass and woodland areas that are susceptible to wildland fires. Heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause a fire. Thus the fire hazards from construction will be potentially significant. In order to avoid or mitigate these potential hazards to less than significant, vehicles and equipment will primarily use existing roads to access the transmission pole sites. Project personnel will be directed to park away from dry vegetation and will be required to carry water and shovels or fire extinguishers in times of high fire hazard. PacifiCorp will also prohibit trash burning and restrict smoking to cleared areas. By following the preventative measures, the potential for fire will be reduced to less than significant levels.

The existing 69 kV wooden poles in the existing right-of-way will be removed and replaced with 115 kV wood poles. The 69 kV wood poles will be disposed of at a landfill authorized to receive them or they will be reused or recycled. If the existing wood poles are wrapped with CuNap wrap, they will be removed, placed in Department of Transportation (DOT)-approved containers, labeled as hazardous waste and including Project information and transported back to a consolidation area on a remote waste shipping paper. Because the used poles will be handled and transported according to federal, state and local waste laws, disposal of the used poles will not create a hazard to the public or the environment, resulting in a less than significant impact.

Potential for Spills during Construction.

Project construction will require the use of motorized heavy equipment including trucks, cranes, backhoes, and air compressors. This equipment requires fuel and liquid replenishment in the form of gasoline, diesel, oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. Surface water and/or groundwater quality could be impacted by an accidental release of one or more of these materials from a vehicle or motorized piece of equipment.

There are two schools (Grenada Elementary and Grenada Community Day) approximately 0.20-mile west of the Project right-of-way. However, construction is not expected to result in impacts at either site because motorized equipment will be in the area only temporarily, because both schools are distant from the Project area, and because PacifiCorp will contain and control all hazardous materials transported to and used at the Project area. Moreover, PacifiCorp will prepare a Hazardous Substance Control and Emergency Response Plan for the Project. The plan will prescribe hazardous material handling procedures to reduce the potential for a spill during construction, or exposure of the workers or public to a hazardous material. The plan will provide a discussion of appropriate response actions in the event that hazardous materials are released or encountered during excavation activities. The plan will be submitted to a Hazardous Material Unified Program Agency, or another appropriate oversight agency, for approval prior to initiating excavation activities.

Furthermore, emergency-spill supplies and equipment will be kept adjacent to all areas of work and in staging areas, and will be clearly marked. Oil-absorbent material, tarps, and storage drums will be used to contain and control any minor releases. Detailed information for responding to

accidental spills, and for handling any resulting hazardous materials, will be provided in the Project's Hazardous Substances Control and Emergency Response Plan.

In addition, an environmental training program will be established to communicate environmental concerns and appropriate work practices to all construction field personnel. The training program will emphasize site-specific physical conditions to improve hazard prevention and will include a review of the Hazardous Substances Control and Emergency Response Plan and the Storm Water Pollution Prevention Plan.

13.4.3 Operation Impacts

During Project operation, motorized vehicles will be used on the Project site. These vehicles contain substances that, if released to the environment, could be hazardous. These substances include gasoline, diesel, antifreeze, automotive lubricants, and motor oil. However, this potential hazard already exists with present operations, and there will be no change in the use of hazardous materials resulting from this Project. As a result, there will be no impact from Project operations.

In the past, several chemicals used at substations and switchyards have been considered to be hazardous materials. However, recent decisions by California's regulatory agencies have made clear that mineral oil, sulfur hexafluoride gas, and the chemicals found in substation batteries are not considered hazardous materials. In the unlikely event that any of these materials are released during Project operations, there will be no impact to the public or environment since these materials are not considered hazardous.

Although spills cause by transformer failure are rare in PacifiCorp's system, the substations will meet federal Spill Prevention, Control, and Countermeasures (SPCC) requirements, as outlined in Title 40 of the Code of Federal Regulations, Part 112. Any spilled oil will be properly characterized and collected and transported to an approved disposal site in accordance with applicable requirements. Pursuant to U.S. EPA requirements, PacifiCorp will inspect the equipment and any required spill containment facilities on a monthly basis. Because such spills are rare, the potential impact is less than significant. However, PacifiCorp will apply the measures described above, which will further minimize any potential impact.

13.4 References

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CHAPTER 14 TRANSPORTATION AND TRAFFIC

14.1 Introduction

This chapter describes the existing conditions, potential Project-related impacts, and mitigation measures for transportation and circulation issues within the Project area. In summary, the Project will not conflict with adopted transportation policies. Although existing traffic conditions will be mildly and temporarily affected during Project construction, all impacts will be less than significant.

14.1.1 Methods

This analysis relied on the collection of available traffic data and other transportation system information. Traffic data and other transportation system information were obtained from the Siskiyou County General Plan Circulation Element (1987), maps, and web searches. Impacts to transportation and traffic were then determined based on Project construction and anticipated operation procedures. Measures to mitigate potential impacts were identified based on existing and future conditions.

14.2 Regulatory Framework

The development and regulation of the Project area transportation network primarily involves state and local jurisdictions. Roads within the Project area are under the jurisdiction of state and local agencies. State jurisdiction includes permitting and regulation of the use of all state roads, while local jurisdiction includes implementation of state permitting, policies, and regulations, as well as management and regulation of local roads. Construction work will require encroachment permits prior to construction from all jurisdictions that manage or maintain roadways. Applicable state and local laws and regulations related to traffic and transportation issues are discussed below.

14.2.1 State

The California Department of Transportation (Caltrans) manages interregional transportation, including management and construction of the California Highway System. In addition, Caltrans is responsible for permitting and regulation of the use of state roadways. The Project area includes two roadways (Interstate 5 and U.S. Highway 97) that fall under Caltrans' jurisdiction.

Caltrans' Construction Manual requires temporary traffic control planning "during any time the normal function of a roadway is suspended" (Caltrans 2001). In addition, Caltrans requires that permits be obtained for transportation of oversized loads and transportation of certain materials, and for construction-related traffic disturbance. Project construction will include the installation of transmission poles immediately adjacent to roadways, as well as the transportation of construction crews and transmission equipment throughout the Project area.

Prior to Project construction, all necessary transportation and/or encroachment permits will be obtained from Caltrans in accordance with the Caltrans Transportation Permit Manual and Encroachment Permit Manual. In addition, construction activities in, along, and crossing roadways will follow Caltrans' Best Management Practices to minimize impacts to traffic and transportation in the Project area, as detailed in Caltrans' Manual on Uniform Traffic Control Devices, Flaggers Instruction Handbook, Manual of Traffic Controls for Maintenance and Work Zones, and Traffic Manual.

14.2.2 Siskiyou County

Several of the roads that parallel or cross the transmission corridors are under the jurisdiction of Siskiyou County. County policies and regulations regarding the design or use of roadways are detailed in the Circulation Element of the Siskiyou County General Plan. As the plan focuses on the design and implementation of circulation system improvements, policies in this element do not directly relate to the proposed Project.

14.3 Existing Conditions

Siskiyou County is primarily a rural, low-density region, and major trip attractors are dispersed throughout the County. Therefore, the dominant mode of transportation is the private automobile. The roadway network that will be affected by the Project is located in central Siskiyou County, in and north/northwest of the City of Weed. The transportation system in the Project region is composed of an interconnected network of Federal, state, county, and city roads; local transit systems; and rail right-of-ways. Project area roadways are described below.

14.3.1 Interstate and State Highways

Regional access to the Project area includes Interstate 5 and United States (U.S.) Highway 97, each of which will be used to transport construction materials, equipment, and workers to and throughout the Project area.

Interstate 5

This is a north-south highway that extends from the Mexican border to the Canadian border, traversing the states of California, Oregon and Washington. In the Project vicinity, it is located in Weed where it generally proceeds in a northwesterly direction. Interstate 5 is generally a four-lane, limited access freeway in the Project vicinity. Table 14.1 summarizes the most recent traffic volume data available for Interstate 5.

U.S. Highway 97

This is a southwest-northeast highway that extends from Interstate 5 at Weed through Klamath Falls, Oregon and Yakima, Washington to the Canadian border. U.S. Highway 97 serves both local and interstate traffic as it provides local access to central Oregon. This highway is a generally paved, two-lane route with pull-out lanes on steep inclines and turn lanes at major intersections and crossroads. Highway 97 is generally typical of highways in rural, low population density areas; traffic volumes on these highways are generally very low. Traffic delays can occasionally occur due to road construction activities along these routes. Due to the variety of recreational uses (such as camping, boating, and hunting) that occur in the region, traffic volumes tend to be higher during the summer months when these activities are occurring than during other times of the year. Table 14.1 summarizes the most recent traffic volume data for U.S. Highway 97.

Table 14-1. Existing Traffic Volume Levels on Highways in the Project Area, Interstate 5 and U.S. Highway 97

Description of Highway Segment Between the Identified Junctions	Peak Hour(1) (number of vehicles)	Average Daily Traffic	
		Peak Month(2) (number of vehicles)	Annual(3) (number of vehicles)
Interstate 5:			
Between Central Weed, Jct. Rte. 97 North and Jct. Rte 265, North Weed Boulevard	3,300	28,500	22,400
Between Jct. Rte 265, North Weed Boulevard and Edgewood	2,750	20,400	15,400
Between Edgewood and Weed Airport	2,800	22,300	16,900
Between Weed Airport and Louie Road	2,700	20,100	16,000
Between Louie Road and Grenada	2,700	20,100	16,000
U.S. Highway 97:			
Between Weed, Jct. Route 5, Central Weed and Weed, Jct. Route 265 (Milepost Equation)	1,100	13,000	11,700
Between Weed, Jct. Route 265 (Milepost Equation) and Weed, West Lincoln Street	660	8,000	6,700
Between Weed, West Lincoln Street and Weed, Big Springs Road	510	5,500	5,000

Source: Caltrans 2004 Traffic Volumes

(1) Included is an estimate of the "peak hour" traffic at all points on the state highway system. This value is useful to traffic engineers in estimating the amount of congestion experienced, and shows how new to capacity the highway is operating. Unless otherwise indicated, peak hour values indicate the volume in both directions. A few hours each year are higher than the "peak hour", but not many. In urban and suburban areas, the peak hour normally occurs every weekday, and 200 or more hours will all be about the same. On roads with large seasonal fluctuations in traffic, the peak hour is the four new the maximum for the year excluding a few (30 to 50 hours) that are exceedingly high and are not typical of the frequency of the high hours occurring during the season.

(2) **Peak Month ADT** - The Peak Month ADT is the average daily traffic for the month of heaviest traffic flow. This data is obtained because on many routes, high traffic volumes which occur during a certain season of the year are more representative of traffic conditions than the annual ADT.

(3) **Annual Average Daily Traffic (Annual ADT)** - Annual average daily traffic is the total volume for the year divided by 365 days. The traffic count year is from October 1" through September 30". Very few locations in California are actually counted continuously. Traffic counting is generally performed by electronic counting instruments moved from locations throughout the State in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. Annual ADT is necessary for presenting a statewide picture of traffic flow, evaluating traffic trends, computing accident rates, planning and designing highways, and other purposes.

14.3.2 Siskiyou County Roadways

The Siskiyou County roadways shown in Table 14.2 may be used to access the Project area during construction. Several of these roads have the potential to be impacted during Project construction. Some will only be affected by a single transverse crossing, though others may be used for access throughout Project construction. Most of the roadways in the County road system carry a low volume of traffic. Table 14.2 summarizes the most recent traffic volume data for Siskiyou County Roadways.

Table 14-2. Existing Average Daily Traffic (ADT) Volumes for Siskiyou County Roadways in the Project Area

Roadway Description	ADT 1980	ADT 1985	ADT 1986	ADT 1987	ADT 1988	ADT 1994	ADT 1999	ADT 2002
99-97 Cutoff (A12)	---	---	---	---	---	---	2,876	---
Old Highway 99	---	---	---	1,235	---	---	---	---
Pumphouse Road	---	---	---	8	---	---	---	---
Louie Road	---	---	65	34	---	---	---	---
Slough Road	---	---	---	7	---	---	---	67
Jackson Ranch Road	119	---	---	---	---	294	---	---
Hoy Road	---	---	---	---	143	---	---	---
Montague Grenada Road	---	1,148	---	---	---	---	---	---
Oberlin Road	---	---	---	---	1,474	---	---	---
Breceda Lane	---	---	---	17	---	---	---	---

Source: Siskiyou County Department of Public Works, Siskiyou County Road Department

14.3.3 Public Transit

The Siskiyou Transit and General Express (STAGE) provides fixed-route bus service to most of the communities along the Interstate 5 corridor and Scott Valley.

14.3.4 Airports

This category includes public and private airports as identified from the U.S. Department of Transportation, Federal Aviation Administration, Klamath Falls Sectional Aeronautical Chart and the United States Government Flight Information Publication, Airport/Facility Directory, Southwest U.S. Other such air facilities may exist as part of ranching and farming operations within the Project area.

One general aviation airport (Weed) is located in the Project vicinity, approximately 4 miles northwest of the City of Weed adjacent to Interstate 5. The Weed Airport is maintained and operated by Siskiyou County and is open to the public. The Weed Airport has one runway (Runway 14/32). The dimensions of Runway 14/32 are 5,000 x 60 feet with a surface that consists of asphalt. The following operational statistics were obtained for this airport:

- Aircraft based on the field: 20
- Single engine airplanes: 20
- Aircraft operations: average 44/day
- 62% transient general aviation
- 37% local general aviation
- <1% air taxi

Any development within the vicinity of the Weed Airport is subject to the standards established by the Siskiyou County Airport Land Use Compatibility Plan. Portions of the proposed Project cross the Plan's Compatibility Zone C1 and Compatibility Zone D (see Figure 13-1). The compatibility zone boundaries represent a composite of noise, safety, airspace protection, and overflight concerns. Compatibility Zone C1 is defined as the area commonly overflown by aircraft at an altitude of 1,000 feet or less above ground level. Included are locations beneath the traffic pattern and pattern entry points. (A typical traffic pattern altitude is 1,000 feet above the airport elevation, although it can be lower or, especially for large airplanes, higher.) Zone C1 boundaries take into account areas where high or low terrain affects the altitude of aircraft overflights above ground level. Annoyance associated with aircraft overflights is the major concern within Zone C1. Although the traffic pattern zone lies mostly outside the 55-dB CNEL contour, land uses are nevertheless subjected to frequent aircraft noise events. Compatibility Zone D includes other areas within the airport vicinity which are overflown less frequently or at a higher altitude by aircraft arriving and departing the airport.

14.3.5 Rail Service

The Union Pacific Railroad line runs the entire length of the states of: California, Oregon, and Washington and numerous other western states. It comes into Siskiyou County at Dunsmuir, and at Weed it angles through Butte Valley and Tulelake to Klamath Falls, Oregon and beyond.

Amtrak stops at its Dunsmuir station, typically early in the mornings. In Weed, the Central Oregon and Pacific Railroad connects with the Union Pacific Railroad. The Central Oregon and Pacific Railroad runs through Montague and on to Eugene/Springfield, Oregon.

14.4 Environmental Impacts

This section presents an analysis of the potential impacts to traffic, transportation, and circulation associated with Project construction and operation.

14.4.1 Significance Criteria

Standards of significance were developed from Appendix G of the CEQA Guidelines. As such, traffic and transportation related impacts were determined to be significant if the Project will:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system, including but not limited to a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections.
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- Substantially increase hazards due to a design feature, such as a sharp curve or dangerous intersection, or incompatible uses, such as farm equipment.
- Result in inadequate emergency access.
- Result in inadequate parking capacity.
- Conflict with adopted policies, plans, or programs supporting alternative transportation, such as bus turnouts or bicycle racks.

14.4.2 Construction Impacts

Virtually all traffic, transportation, and circulation-related impacts will occur during Project construction. Nevertheless, Project construction will not generate a substantial number of vehicle

trips within the Project area or region. Typical truck traffic will include periodic delivery of construction crews, power poles, conductor spools, hardware and equipment. These additional trips associated with the construction of the Project would temporarily cause a negligible increase of traffic in the Project area. Construction will also include the transportation of oversize loads, such as pole trucks. Safety measures as described in the encroachment permits will be implemented during the transportation of large or oversize loads.

Project construction could also include temporary closure of one lane of traffic. As a result, lane closures may contribute to increases in temporary traffic delays during construction. These lane closures will be subject to Traffic Control Plan (TCP) permitting from Siskiyou County (or other agency, as applicable). The TCP will follow the Caltrans Encroachment Permit Handbook for lane closure design, necessary warning signs, flag personnel and limitations on closure times dependent upon the traffic volume and time of day. Once the permit is issued, PacifiCorp may be required to provide notice of lane closures in advance of the actual work, dependant upon the requirements of the TCP. At locations of lane closures or lane width reductions, PacifiCorp will develop traffic diversion plans in compliance with the Caltrans' manual and Siskiyou County to prevent excessive congestion or traffic hazards. PacifiCorp will also follow the traffic diversion plans as prescribed by the encroachment permits. The Project would not interfere with the operation of passenger transit because no roadways would be closed.

Installation of transmission lines (conductors) will include removal of existing conductors and installation of new conductors. Prior to stringing new conductors, temporary clearance structures will be installed at road crossings and other locations where the new conductors could accidentally come into contact with electrical or communication facilities, other power lines, and/or vehicular traffic during installation. Traffic control will be provided where necessary during installation and removal of these temporary clearance structures. The structures consist of a wood pole with a frame at the top that resembles a "Y" placed on each side of the road or power line being crossed; installation and removal of clearance structures is similar to that of wood poles, though less excavation is required and no foundation is required. This will not require grading and will prevent the conductor from being lowered or falling into traffic or onto another power line. No impacts associated with installation of conductors are anticipated; therefore, mitigation is not required.

As stated above, Project construction will result in an increase in traffic during construction of transmission lines that cross or parallel roadways. Though construction will not require blocking entire roadways (only one lane could potentially be closed at one time), construction activity and associated vehicles are anticipated to temporarily increase traffic along some roadways in the project area. Because lane closures will abide by agency traffic regulations and will be temporary in nature, impacts associated with temporary lane closure will be less than significant.

The project will not result in a change in air traffic patterns because no aircraft (e.g., helicopters) will be used during construction or operation, and the height of ground equipment will be too low. As a result, there would be no impact.

The project does not contain design features or incompatible uses that might substantially increase transportation hazards. The Project will cross railroad tracks, but these crossings will be scheduled so that train schedules are not impacted. Incompatible uses associated with the project, such as use by construction equipment and transport of transmission towers and substation equipment, will be minor because these uses will be temporary (less than a few hours at one time on public roads), will occur on specifically scheduled days, and will include transportation control measures that will be outlined within the Traffic Control Plan.

Access for emergency vehicles would be maintained throughout project construction. PacifiCorp project construction activities may require temporary lane closures. As stated above, appropriate traffic control plans would be followed, and permits would be obtained from the relevant

authority/authorities. Therefore, the project would not result in inadequate emergency access. Lane closures will be coordinated with local jurisdictions and emergency service providers, resulting in a less than significant impact.

The project will not impact parking capacity in the project area. As a result, there would be no impact.

The Circulation Element of the Siskiyou County General Plan focuses on the design and implementation of circulation system improvements. Policies in this element do not directly relate to the proposed Project. Therefore, the Project will not conflict with the General Plan policies regarding transportation in the Project area or vicinity, and will therefore have no impact.

Modifications within the Lucerne Substation will be contained within the existing substation property. Traffic related to substation modifications would be short term, temporary, and would not result in a substantial increase in existing traffic load. Therefore, potential traffic impacts would be temporary, short term, and less than significant.

Mitigation Measures

Though the impacts from the Project will be less than significant, PacifiCorp follows Best Management Practices to minimize impacts to traffic and transportation in the Project area. PacifiCorp will incorporate the following mitigation measures into the Project to further reduce impacts from transportation and traffic:

- Construction activities will occur on road shoulders or in non-traffic lanes, where feasible, to avoid unnecessary land closures.
- All property owners and residents of streets affected by construction will be notified prior to the start of construction. Advance public notification will include postings of notices and appropriate signage of construction activity. Access to all residences and properties near the Project will be maintained at all times.
- All construction activities will be coordinated with local law enforcement and fire protection agencies. Emergency service providers will be notified of the timing, location, and duration of construction activities.
- PacifiCorp will consult with the School Districts at least 1 month prior to construction to coordinate construction activities which may be adjacent to school bus stops. If necessary, school bus stops will be temporarily relocated or buses will be rerouted until construction in the vicinity is complete. PacifiCorp will also consult with the Transit Authority at least 1 month prior to construction to reduce potential interruption of transit service.
- Road use-related wear and tear will be documented during construction of transmission line facilities and PacifiCorp will repair any damaged roadway sections, as applicable.

14.4.3 Operation Impacts

During Project operation, routine maintenance trips, inspection, as well as occasional vegetation management activities will continue to occur along transmission routes and at substations in the Project area. Vegetation management in the right-of-way may include control of noxious weeds and trimming of shrubs or trees for safety upkeep and will be limited to seasonal and yearly traffic and will not increase traffic in the Project area. There will be no increase in these activities above existing operations, and thus no additional traffic impacts.

PacifiCorp will halt and remove maintenance activities and equipment from roads in the event of an emergency. Impacts to traffic and transportation in the Project area associated with Project operation will be negligible, and no mitigation will be required.

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CHAPTER 15 VISUAL AND AESTHETIC RESOURCES

15.1 Introduction

This section describes visual resources in the Project area and identifies visibility of the Project from sensitive viewpoints found within the study corridor. Visual impact and aesthetic quality evaluation involves a process of defining and inventorying existing visual resources (natural and built features of the landscape), and the identification, description and assessment of the Project on visual resources.

15.1.1 Methods

Assessment of visual resources included a review of aerial photographs, topographical maps, land use and transportation data, and site photography. Local planning documents were reviewed for guidelines and regulations related to aesthetic and scenic resources. Technical data related to construction methods and materials were also reviewed. Sensitivity levels were determined by reviewing use data, viewing duration and expected viewer attitudes towards change. Expected visual contrast based on change in landform, vegetation, and structures are measured against sensitivity and viewing distance (foreground, middleground, and background) to provide initial impact levels before mitigation. Final impact levels were assigned based on mitigation measures and viewing modifiers such as orientation and screening affects. For the purpose of collecting and compiling existing data, the study area for the proposed project included a 2 mile corridor along the proposed centerline (1.0 mile either side).

Aerial photographs, topographical maps and site photography were used identify landform and vegetation cover, evaluate existing scenic quality, identify sensitive areas such as residences, and determine potential visibility from sensitive viewpoints. After identification of existing resources and sensitive viewpoints and viewers, and potential impacts were assessed based on scenic quality impacts and viewer impacts. Viewer impacts were determined through an analysis of project location from viewers (distance zone), sensitivity level, overall contrast, and impact modifiers such as screening.

Distance zones were established based upon perception thresholds. Perception of form, line, color, texture and other visual elements in the landscape changes with increasing distance from a viewpoint. These distances thresholds are based on previous studies for similar power transmission line studies and under similar environmental conditions. For this study, the following thresholds were used:

- Foreground – 0 to 1/4 mile
- Middleground – 1/4 to 1/2 mile
- Background – beyond 1/2 mile

The distance zones were used to determine potential impacts to sensitive viewers during impact assessment.

Visual impacts will result when contrasts of the Project are dominant and seen from sensitive viewpoints or when the Project's contrasts are dramatically change the scenic quality of the landscape. Visual impacts resulting from the Project will be either short term (temporary) or long term (life of the Project). Short-term visual impacts will result from the construction activities to install the transmission line including temporary disturbance in work areas, turnaround areas and set-up sites, the presence of materials and a material staging area and construction workers and equipment. Long-term impacts will result from permanent disturbance associated with the blading of new roads and trails, construction of building pads on rock and side hills, new and improved

highway access points and turn around areas where rock, trees, and/or sage brush will be removed and in pole placement areas. In addition, higher power poles along the rebuilt line and the introduction of a new transmission line into the landscape will be new permanent man made features. This impact assessment considers:

- Views from residences
- Views from recreation area viewpoints
- Views from sensitive travel routes
- Effects to the scenic quality
- Consistency of the proposed with any identified jurisdictional objectives

Impacts to viewers will result from a combination of inventoried factors, including the contrast of the Project with the existing landscape, the distance from sensitive viewpoints, and other viewing variables (e.g., orientation of the view, view duration, and how the Project contrasts will be seen – e.g., backdropped to a hillside, skylined on a ridgetop, etc.).

There are a variety of potential visual impacts related to activities during the construction, operation, and maintenance of the transmission lines. These may have an impact on sensitive viewers or Scenic Quality, and include:

- Construction of new roads and upgrading roads for access
- Ground disturbance at transmission structure sites
- Transmission structure assembly and erection
- Construction and related traffic
- Soil exposure and dust
- Transmission structure contrast and impacts on “natural” landscapes, or Scenic Quality impacts

Landscape Units and Scenic Quality

Distinct units of similar visual quality were delineated based on landform, vegetation, water features, cultural influences and other factors for the purposes of evaluating scenic quality impacts. The purpose of delineating these units is to differentiate between high quality landscape and low quality landscapes in a consistent methodology based on uniqueness, variety, and the presence of desirable landscape elements such as rock outcroppings, water features, and other features that typically invoke. Units were rated High, Moderate, or Low.

- High Scenic Quality exhibits high distinctiveness, and provides diversity in form, line, color, and texture. Culturally dominated landscapes provide high levels of harmonious development in terms of architectural character and sense of place.
- Moderate Scenic Quality includes typical regional landscapes that are common throughout the area and exhibit limited diversity in form, line, color and texture. Culturally dominated landscapes provide average levels of harmonious development in terms of architectural character and sense of place.
- Low Scenic Quality includes highly disturbed landscapes that appear heavily altered or disturbed, with culturally dominated landscapes exhibiting low levels of harmonious development in terms of architectural character and sense of place.

Visual Contrast

Visual contrast is defined as the degree of physical change in the landscape considering the proposed action without regard to specific viewpoints or viewing conditions. Contrast is determined by the difference in form, line, color, and texture of land, water, vegetation, and structures between the proposed action and its setting. Contrast levels are characterized as strong, moderate, weak, or none. Visual impacts were determined by how the Project contrast will be seen from key observation points.

Landform Contrast - created by alteration of landform patterns, exposure of soil, erosion scars, etc. Landform contrast was determined largely by the degree and duration of ground disturbance due to access roads and construction.

Vegetation Contrast - determined by the diversity and complexity of vegetation types and patterns, which are major criteria in determining the visual absorption, or blending, of the transmission line into the landscape.

High vegetation contrasts would result from the need to clear large, dense areas of existing vegetation. Removal of such vegetation would provide higher contrasts than the removal of lower groundcover grasses, for example.

Structural Contrast - determined by the degree to which the proposed Project will “blend in” with existing structures, and the potential prominence of structures by virtue of their position in the landscape. High structure contrasts will be the result of introduction of transmission structures in areas where none previously exist, where low structure contrast will result from the introduction of transmission line structures where similar ones already exist.

The initial landform, vegetation, and structure contrast results in a final initial visual contrast. For example, a high structure contrast combined with low landform and vegetation contrasts will result in a moderate overall contrast. Likewise, high structure contrast combined with moderate landform contrast and low vegetation contrast will result in moderate overall contrasts.

High and moderate levels of sensitivity, derived from expected use level, viewer attitude toward change, and duration of view were evaluated for potential visual impact. Views of visual changes associated with a transmission line in the landscape can be described in terms of distance zones that define the level of visual perception that can be expected. To determine sensitive viewer initial impact levels, contrast levels were compared to visibility and distance zones from moderate and high sensitivity viewpoints.

15.1.2 Regulatory Framework

The Project is located exclusively on private lands under the jurisdiction of Siskiyou County.

The General Plan for Siskiyou County includes a “Scenic Highways Element” that defines scenic corridors within the county. It is intended to serve as a guide to local jurisdictions for the development of more detailed scenic route plans to supplement the county plan, to protect and enhance the scenic values along routes designated in the plan, and protect scenic areas visible from these routes (Siskiyou County Planning Department, 1974). This element is not applicable to the project because it is meant to serve as guidance for future designation of scenic highways, and does not specifically regulate or restrict development of projects such as transmission lines.

The Open Space Element of the Siskiyou General Plan identifies a scenic land designation to lands possessing outstanding scenic qualities worthy of preservation (Siskiyou County General Plan –Open Space Element, 1972). There are no identified scenic lands within the study corridor.

15.2 Environmental Setting

15.2.1 Regional Environment

The Project is located in the Cascade Mountains, specifically in the Pacific Border Province of the Klamath Mountains. This region is generally characterized by uplifted and dissected peneplain on strong rocks with extensive, isolated hills, or monadnock ridges (Fenneman, 1931). The Project area is located in a valley surrounded by abrupt, hilly and mountainous topography. Vegetation in the Project area includes open grassland, coniferous forest, and shrubland. Annual grassland dominates most of the Project area. Mixed, open, juniper dominated forests with sagebrush understory are often limited to the steeper hillside slopes and the southern end of the Project. In open pasture and grassland areas, views to Mt. Shasta and surrounding mountains often provide a backdrop of adjacent scenery. Uncultivated hillsides are typically covered with various sized volcanic rocks and small boulders.

The area is typically rural in character, with open pastures and scattered ranches and residences. However, there are two concentrated developed areas: The Village of Grenada and subdivision development on the north side of Weed.

Visible water features near the Project area are limited to the Shasta River, a linear, riparian corridor near the south-middle of the Project, several concentrated impoundment lakes located adjacent to Interstate 5 (Big Lake, Hole in the Ground Lake, and Freeway Lake), and Lake Shastina (also known as Dwinnell Reservoir). Lake Shastina is over two miles from the existing transmission line.

15.2.2 Landscape Units

Homogeneous landscape units of similar landform, vegetation cover and other similar elements were delineated as follows:

1. Open Rural Grasslands - This unit is the most dominant in the Project area, and is characterized by relatively flat, open natural landscapes that has limited cultural features, rural roads, barbed wire fencing, and scattered range outbuildings and residences. The landscape composition in this unit exhibits limited diversity in form, line, color, and texture. Moderate Scenic Quality.
2. Open Rural Pasture – This unit is similar to Open Rural Grasslands, but the residential and structure density is slightly higher, and land uses are focused on pasture lands for haying, livestock, and other agricultural uses. Color hues are notably greener due to irrigation. There also is a higher concentration of linear features such as driveways and roadways, electrical distribution poles, and a railroad. The landscape composition in this unit exhibits limited diversity in form, line, color, and texture. Moderate Scenic Quality.
3. Rural Developed Village – This landscape unit is the most intensely developed, and is limited to the areas in and around Grenada and Weed. Residential and commercial development is of moderate density, and is architecturally diverse. The landscape composition in this unit exhibits limited diversity in form, line, color, and texture. Moderate Scenic Quality.
4. Monadnock Coniferous – These steep hilltops and ridges are typically covered with varying mixtures of coniferous overstory and limited understory vegetation. Cultural development is typically limited to scattered residences and ranch structures. The landscape composition in this unit exhibits limited diversity in form, line, color, and texture. Moderate Scenic Quality.
5. Monadnock Grasslands – Similar in landform to the Monadnock Coniferous unit, these landscapes are characterized by open, grassy and rocky slopes that have limited development. The landscape composition in this unit exhibits limited diversity in form, line, color, and texture. Moderate Scenic Quality.

6. Shasta River Bottom – This riparian area forms a narrow ribbon near the south end of the Project, is the only area that supports deciduous overstory trees, and provides significant water features. Textures and colors are fairly diverse, and back scenery includes the surrounding mountains contributing to a higher scenic quality level. The landscape composition in this unit exhibits high distinctiveness and provides diversity in form, line, color, and texture. High Scenic Quality.

15.2.3 Sensitive Viewpoints

According to established visual methodology, high, moderate, or low viewer sensitivity levels were assigned to each inventoried viewpoint. Sensitivity was determined by rating each viewpoint using three criteria: user attitude towards change, volume of use at the viewpoint, and duration of views typically from the viewpoint.

Residences

All residences were considered high sensitivity due to high concern (i.e. user attitude) and long view duration. All residences were rated as having high viewer sensitivity. Moderate viewer sensitivity sites included recreation destination roads and dispersed recreation sites. Low visual sensitivity viewpoints were identified but not carried forward for analysis.

Figure 15-1. Open Rural Grassland Landscape Unit



Figure 15-2. Open Rural Pasture Landscape Unit



Figure 15-3. Monadnock Coniferous Landscape Unit



Figure 15-4. Monadnock Grassland Landscape Unit



Figure 15-5. Shasta River Bottom Landscape Unit



Most of the residences in the Project corridor are located near Grenada and Weed. Other scattered residences are located throughout the Project study area.

In the northern rebuild segment of the project (Line south of Line 75 and north of Pole 13/24), 8 residences will potentially have the project in foreground viewing condition, and 2 will potentially have the project in middleground viewing condition. The structures that may potentially be viewed include all in this segment (Poles 4/24 through 12/24).

Between Grenada and north of the southern-most I-5 crossing, approximately 30 residences (outside of the Grenada area) have the rebuilt portion (pole replacement) of the Project in foreground viewing condition, and approximately 18 are in the middleground distance zone. The structures that may potentially be viewed include from the northern-most rebuild pole (12/28) south to Pole 3/32.

Between the southern-most I-5 crossing and Slough Road (just north of the Shasta River) there are no residences that have the Project in the foreground viewing condition. Along the Shasta River south to the new transmission line divergence, there are approximately 6 residences with potential foreground viewing condition, and none in the middleground. The structures that may potentially be viewed include Poles 13/44 south through Poles 8/45.

The new transmission line portion of the project has 6 residences within the foreground viewing condition, and another 6 residences have the potential to view the project in middleground condition.

Travel Routes

Viewing conditions for Interstate 5 (I-5) are typically background and middleground, with a small portion of the Project in the northern section being in the foreground. There is also a rest area on Interstate 5 located adjacent to the airport approximately 0.8 miles to the southwest of the Project in an area where pole replacement is the primary construction activity, and views are in middleground condition. The transmission structures potentially seen in foreground and middleground viewing distance include Poles 1/29 through 20/30 (10,500'), and Poles 21/31 south through 9/40 (44,500'), a distance of approximately 10.5 miles. Travellers along I-5 will have moderate sensitivity because of the short duration of view, substantial distance from a majority of the Project, and uncertain viewer attitude to change.

State Route 97 (SR97) is also a main travel corridor within the Project area. SR97 from the Oregon border south to the intersection of I-5, on the south end of the City of Weed, is part of the Volcanic Legacy National Scenic Byway All-American Road and is a State eligible Scenic Highway. Views to the Project from State Route 97 are fairly limited, and will consist of the new transmission line in the south end of the Project. The new 1.6 mile line will be located approximately 300 feet from SR 97 at the nearest point, and will be seen from that road for less than 0.2 miles.

Local roads are low sensitivity due to a low use levels, low viewer expectations or attitudes, and moderate view duration. These roads include Hoy Road, Jackson Ranch Road, Slough Road, E. Louie Road, Siskiyou Boulevard, County Highway A12, Montague Grenada Road, and Breceda Lane in the Project area.

15.3 Environmental Impacts

15.3.1 Significance Criteria

Significance criteria for impacts to aesthetic resources are based on Appendix G of the State CEQA Guidelines, as well as upon the methodology described above. A project is considered to have a potentially significant impact to visual resources if it will:

- Have a substantial adverse effect on a scenic vista;

- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic resources within a state scenic highway,
- Substantially degrade the existing visual character or quality of a site and its surroundings, or,
- Create a new source of light and glare which would adversely affect day or nighttime views in the area.

Changes to the landscape will be described of in terms of four levels of significance:

- Potentially Significant – The combination of overall contrast and proximity provide a substantially noticeable change in viewshed and landscape composition in terms of form, line, color, and texture, scale, and spatial character and dominates the existing landscape.
- Less Than Significant with Mitigation – The combination of overall contrast and proximity provide a moderately noticeable change in viewshed and landscape composition in terms of form, line, color, and texture, scale, and spatial character, do not dominate and are balanced by other features in the landscape.
- Less Than Significant - The combination of overall contrast and proximity provide very limited noticeable change in viewshed and landscape composition in terms of form, line, color, and texture, scale, and spatial character, and are subordinate to all or most other features in the landscape.
- No Impact - The combination of overall contrast and proximity provide no noticeable change in viewshed and landscape composition in terms of form, line, color, and texture, scale, and spatial character.

15.3.2 Potential Impacts

Substation Impacts

The Lucerne Substation is in the foreground and middleground view of nearby residences, some of which are screened by vegetation. The substation will not be seen from any other sensitive viewpoints. Scenic Quality in this area is Moderate because the area is in an Open Rural Grassland landscape unit.

Construction - During construction, short term structure contrasts will result from the presence of vehicles, cranes and other equipment. The short term nature of construction activities at the substation, combined with low overall contrast level and the vegetative screening of view from most of the nearby residences, will result in less than significant impacts during construction.

Operational - Because of the distance of the substation from sensitive viewpoints, low overall contrasts, and foreground screening effects of vegetation, long-term visual impacts are expected to be low. Expansion of the facilities at Lucerne Substation will occur within the confines of the existing substation footprint. The existing substation consists of several wooden support structures, transmission lines and other associated facilities. The facility is already visible from nearby residences, though it is partially screened by vegetation. The existing wooden structure at Lucerne Substation will be replaced by a steel structure. Figure 15-6 shows the existing Lucerne Substation, and Figure 15-7 shows an example of the proposed steel structure. All improvements to the substation will be incremental in nature and will result in little to no noticeable changes to the viewshed or landscape composition. There will be a similar number of new steel structures and the new structures will be of a similar height and dimension as the existing structures. The overall visual contrast will be low because the modification will create no landform or vegetation contrasts and the new and old structures will be similar with little contrast.

Substation expansion activities will not adversely affect scenic vistas in the Project area, will not substantially damage scenic resources such as rock outcroppings, trees, or historic resources within a state scenic highway, will not substantially degrade the existing visual character or quality of the existing site and surroundings, and will not create a new source of light or glare.

Figure 15-6. Existing Lucerne Substation Structure Type

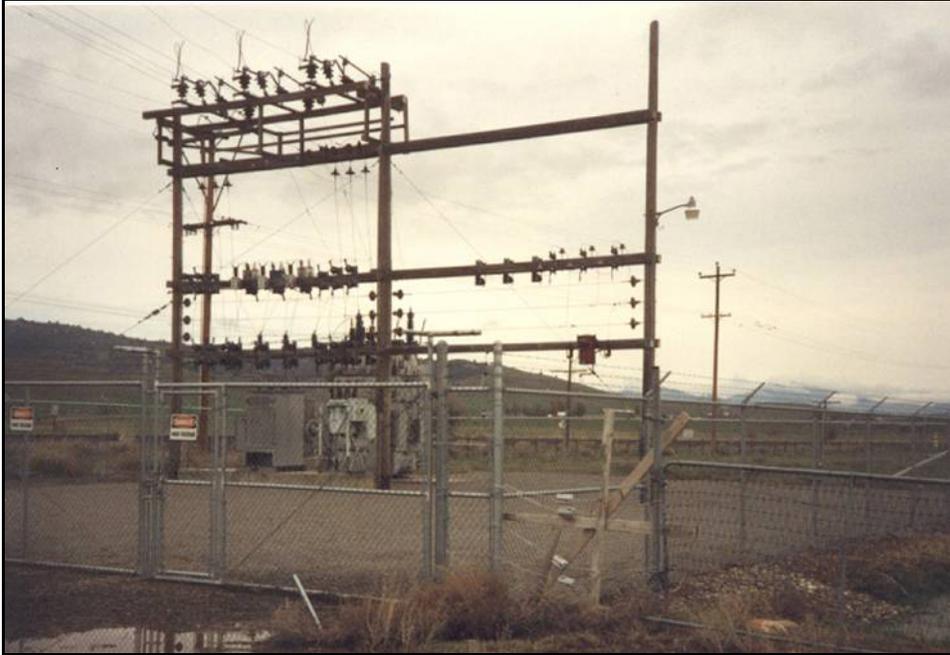


Figure 15-7. Proposed Lucerne Substation Structure Type



Transmission Line Impacts

Construction – PacifiCorp hopes to construct the project over an eight month period, from Fall of 2006 through Spring of 2007. Typically, construction activities will occur during the normal working day and week (Monday-Friday, 7AM-5PM).

A staging area will be located adjacent to the Weed Junction Substation, and will cause little structural contrast with the existing substation and surroundings. No vegetation or landform contrasts will occur in these areas.

Work areas for pulling and tensioning and line set-up will cause short term structural and vegetation contrasts. These pulling and tensioning sites are within the foreground of residences in the following locations: north of Pole 4/24 and south of Pole 12/24, north of Pole 13/28 and south of Pole 21/29, at the Pole 13/31 PI, north of Pole 13/40, north of Pole 9/41, and north of 5/43. However, this impact will also be short-lived in any particular location and thus will be less than significant.

Operational - Along most of the Project corridor, for approximately 17 miles, there is an existing, similar transmission line. On the southern end of the Project, 1.6 miles of new transmission line installation, where none currently exist, will cause high structural contrast levels.

Landform Contrast for much of the new and existing corridors will be low because replacing poles on flat or gently sloping terrain alters few landforms. Strong or moderate landform contrast areas will result where there is a need for significant areas of grading for building pads, such as in highly sloping hillsides or areas of existing rock outcropping (poles 7/24 through 9/24, 10/25 through 13/25, 14/32, 13/38 through 21/38, 12/39 through 19/39, and 4/42 through 10/42). Other potential building pads will be located in coniferous forest areas where they would typically be screened from view.

Over most of the Project area, pole for pole replacement of the existing structures of similar size, material, and configuration (see Figure 15-8 and 15-9) will result in little or no noticeable change in any viewshed or landscape composition. Though the replacement poles will be up to ten feet taller than the existing poles, they are similar in form and configuration, and therefore, will result in low structural contrasts. When combined with weak vegetation and landform contrasts, visual impacts will typically be low to high for sensitivity viewers that have the Project in foreground viewing condition. The greatest impacts in pole replacement areas will result from the temporary presence of construction equipment and the temporary presence of pulling and tensioning areas (see construction impacts). There will be greater impacts, however, where installation of new structures will occur where none presently exist.

Travelers along I-5 will see portions of the Project in the foreground and middleground where pole replacement will occur. The replacement poles visible from I-5 potentially include Poles 1/29 through 20/30, and Poles 21/31 south through 9/40. Though approximately 10.5 miles of rebuilt transmission line may potentially be seen from I-5, the moderate sensitivity combined with low contrasts will make impacts less than significant from I-5 travelers.

Viewers from residences along Montague-Grenada Road in the village of Grenada will have foreground views of the Project where pole replacement will occur. The presence of existing power poles and foreground screening along much of the route in this area makes visual impacts here low. Structures potentially seen include Pole 12/28 south to Pole 3/32. Though sensitivity is high in this area, overall contrasts will be low because the vegetation in the area is mostly low growing (low vegetation contrasts), typically flat (low landform contrasts), and similar replacement poles will be used (low structure contrasts). Also residences near Parks Creek along Slough Rd., near the Slough Rd/Mills Rd/Shasta River area, and the northern Hoy Rd area will have foreground views of the replacement poles, but again, due to similar size and shape of the new poles, the modest increase in height (9 feet), and screening caused by existing buildings and vegetation, impacts will not be significant because the vegetation in the area is mostly low growing, typically flat, and similar replacement poles will be used. Though one residence is within approximately 150 feet of the rebuilt line, the other is in an area that is developed with farm structures, roads and driveways, grain bins, and other cultural modifications that allow the relatively low contrasts related with the Project to fit in with the existing landscape.

The installation of the new transmission line on the south end of the Project will cause high structural contrast. Impacts to sensitive viewers and eligible scenic highway vistas will be lower due to the location of the structures away from those receptors near the foreground/middleground interface, the opportunity for topographical and vegetative screening for many of the viewers, and low to moderate overall contrasts. One residence, located about 0.25 mile west of the Weed Junction Substation will be impacted by siting the transmission line in the foreground viewing position. Other nearby residences located at the end of Rainbow Way and off of Hoy Road will also have foreground viewing condition. Most will have views screened by vegetation and/or topography. There are only three residences that have the potential for unobstructed foreground views of the Project. Typically, the remaining residences with the Project in the foreground viewing condition have hills and fairly dense coniferous (evergreen) forests blocking views to the new transmission line. These factors, combined with the generally low vegetation and landform contrast and the relatively low number of overall viewers in the area, will make the construction and operational impacts of the Project less than significant.

Maintenance of the transmission line will be infrequent, and will cause moderate, short term contrast due to the presence of vehicles. These will occur periodically along the entire length of the project, and are not expected to be significant due to the duration of the activities.



Figure 15-8. Typical Existing Structure (w/underbuild)



Figure 15-9. Typical New Structure

Access Road Construction

New access roads will be constructed near I-5, where sensitivity is low and new roads are potentially in foreground viewing condition. A new access road will also be established off Rainbow Way adjacent to the new transmission line, and will be seen from in the middleground condition for one residence to the north and in the foreground condition from SH 97.

Construction of new roads in the pole replacement areas will occur only where existing sagebrush and surface rock makes accesses difficult (potentially at Poles 13/32 and 14/32, 13/38 through 19/38, 3/42 through 12/42, and 16/42 through 19/42).

Construction - As with other components of the project, construction impacts from road building caused by the presence of equipment will cause short term impacts. However, access road locations will generally be on flat terrain and therefore, no blading will occur and thereby causing no landform contrasts. Vegetation contrasts will generally be moderate to low during construction, because the roads will be located either along existing alignments or where there presently is only herbaceous and scattered shrub vegetation.

Operational - There will be no operational impacts of the access roads other than those caused by moderate or high landform contrasts. Herbaceous vegetation will be restored, causing low

vegetation contrasts. The potential blading occurring at Poles 13/32 and 14/32 are over 4000' from any residence, and would typically be hidden from view behind a hill for I-5 viewers. Landform contrasts where blading may occur from Poles 13/38 though 19/38 may be seen from I-5 in the foreground viewing condition. Landform contrasts will be moderate to high and vegetation contrasts low thereby causing less than significant impacts. Potential road blading occurring near Poles 3/42 through 12/42 and Poles 16/42 through 19/42 occurs at least 2500 feet from the residence located near the intersection of Hoy Rd. and Jackson Ranch Rd., and will be hidden behind topography, thereby causing less than significant impacts.

15.3.3 Mitigation Measures

No mitigation will be required by the project, because all impacts are expected to be less than significant. However, the applicant will implement the following mitigation measures to reduce or eliminate potential visual impacts:

- 1) To reduce visual contrast and siltation in construction areas (e.g., marshaling yards, tower sites, spur roads from existing access roads) where ground disturbance is substantial, surface preparation (including decompaction, redistribution of topsoil, etc.) and reseeding will occur. The method of restoration could normally consist of loosening the soil surface, reseeding, installing cross drains for erosion control, placing water bars in the road, and filling ditches.
- 2) To minimize ground disturbance and/or reduce scarring (visual contrast) of the landscape, the alignment of any new access roads or cross-country route will follow the landform contours in designated areas where practicable, providing that such alignment does not impact other resource values additionally.
- 3) No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate limits of survey or construction activity. Exceptions could be made for paint use on vegetation to indicate avoidance of sensitive species or plants considered to have ethnobotanic significance.
- 4) To reduce visual contrast in designated areas, poles will be placed so as to avoid impacts to sensitive viewpoints within limits of standard pole design. If the sensitive viewpoints cannot be completely avoided, poles will be placed so as to minimize the disturbance by spanning the sensitive area. Similarly, to reduce visual impacts, poles are to be placed at the maximum feasible distance from the crossing of roads or trails within limits of standard tower design.
- 5) Non-specular conductors will be used to reduce visual impacts.

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CHAPTER 16 GROWTH INDUCING IMPACTS

16.1 Introduction

CEQA requires discussion of the ways in which a proposed project could directly or indirectly foster economic development or population growth, and how that growth would, in turn, affect the surrounding environment. Growth can be induced in a number of ways, including the elimination of obstacles to growth, or through the stimulation of economic activity within the region. Under CEQA, induced growth is not considered necessarily detrimental or beneficial. Induced growth is considered a significant impact only if it directly or indirectly affects the ability of agencies to provide needed public services, if the expected growth inducement directly conflicts with adopted policies limiting growth, or if it can be demonstrated that the potential growth, in some other way, could significantly affect the environment.

16.2 Economic or Population Growth

As explained in Chapter 2, Project Description, the Project is necessary to improve reliability by increasing transmission capacity in the Yreka-Weed area in order to continue safe and reliable electric service to customers in the area, and to provide needed transmission capacity south into the PG&E service territory. By increasing transmission capacity in the area, additional economic or population growth can be accommodated. However, the Project will not induce growth in the area. Growth is carefully planned and regulated by the county general plan, which contains policies to protect various land uses and to plan urban development.

The main objectives of this project are to ensure that the system has adequate capacity to safely and reliably meet local and contractual electric system demand, to satisfy WECC N-1 Criteria, and to meet the immediate electrical power needs by the summer peak loads of 2007.

Like other utilities and public service providers, PacifiCorp upgrades electrical facilities incrementally based on growth planned by local government agencies. These growth projections reflect economic and urban developments that are planned and approved by city and county governments, which have authority over land uses. Local planning policies and zoning regulations have the biggest influence in controlling the pace and ultimate amount of growth in this area. The most relevant policies and regulations that influence growth control in the Project area and vicinity are outlined below:

16.2.1 Siskiyou County

Siskiyou County does not have any growth control/growth management ordinances, policies, or programs. While Siskiyou County imposes other constraints that may have the effect of limiting growth, such as land use controls (general plan designations and zoning) and water and sewer capacity, these are not policies adopted with the intention of limiting growth, but rather to plan and organize growth in a way that is consistent with and best agrees with the planning goals of the county.

Moreover, the proposed Project will accommodate rather than induce planned growth. The Project will provide short-term construction employment, but no additional permanent workers that will require new housing. PacifiCorp's existing workforce, contractors, and a few other workers from the local labor pool will construct the Project. Non-local labor will be used only for specialized skills not readily available locally and will likely stay in hotels or rent housing on a short-term basis. It is not anticipated that the limited, temporary construction employment will result in long-term growth in the area.

16.3 Extended Access or Public Services

The Project will not induce growth that directly or indirectly affects the ability of local government to provide needed public services. The Project will not extend electrical service to previously inaccessible areas or require the extension of other public services to previously unserved areas. The proposed Project will not tax existing community services. The Project will not create a need for additional city and county-provided services, such as road improvements, law enforcement and fire protection.

16.4 References

Siskiyou County General Plan (Housing Element Update). May 2004.

CHAPTER 17 CUMULATIVE IMPACTS

17.1 Introduction

This chapter analyzes cumulative impacts, defined as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact is the change in the environment that results from the incremental impact of the Project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CEQA Guidelines, Sec. 15355; Public Resources Code Sec. 21083 b).

This PEA examines the potential cumulative impacts of the Project in relation to other existing and likely future projects in the study area (see Table 17-1). This analysis determined that there is not likely to be any significant cumulative change in the environment resulting from the incremental impact of the proposed Project when added to these other developments. Consequently, the proposed Project is not expected to result in or contribute to significant cumulative impacts.

17.1.1 Methods

To conduct this analysis, various agencies including the planning staff from Siskiyou County, City of Weed and Caltrans were contacted for a listing of reasonably foreseeable future projects within the proposed Project area. This listing of future project is shown in Table 17-1. These projects have either had a development application submitted to a governmental agency, are in the planning process, or have been approved.

Table 17-1. Foreseeable Future Projects in Proposed Project Area

Project Title	Responsible Agency	Location / Description	Fiscal Year
Prather St. Rehabilitation	City of Montague	6 th St. to 9 th St. / Rehabilitate roadway and drainage improvements.	2005 - 2006
Siskiyou Way & Alamo Ave. Rehab	City of Weed	Weed Siskiyou Way & Alamo Ave. / Rehabilitate curb, gutter, sidewalks, resurface, and improve drainage.	2005 - 2007
Siskiyou Ave. Project	Siskiyou County	Near Grenada on Siskiyou Ave. / Reconstruction.	2006 – 2008
Tennant Road Project	Siskiyou County	Near Weed from SR 97 to MP 12.8 / Overlay and re-stripe.	2007 - 2008

The discussion of cumulative impacts for relevant resource topics follows.

17.2 Analysis of Cumulative Impacts

17.2.1 Air Quality

Air quality impacts from construction of the proposed Project will be temporary and mitigated to a less than significant level through standard dust control measures recommended by the SCAPCD. It is assumed that other projects, should they occur, would be subject to similar dust

control measures and regulatory controls. Air quality in the SCAPCD is well within federal and state air quality standards. Emissions of criteria pollutants during construction will be minor. The emissions will comply with all federal, state and local air quality regulations, guidelines and permitting requirements, and will not contribute to violations of any of these requirements. There will be no long-term significant air emissions associated with the Project. Thus, the Project will not contribute to significant cumulative air quality impacts in the Project area or region.

17.2.2 Biological Resources

The street and roadway improvements listed in Table 17-1 are not expected to result in substantial impacts to biological resources because they occur on previously development land within an existing urban and suburban landscape. No special status species are likely to be adversely affected by these projects and thus these projects will not likely have a significant impact on special status species or sensitive habitats.

The proposed Project has been designed to minimize potential environmental impacts. Construction, operation, and maintenance of the Project will result in temporary and minor permanent impacts to vegetation. Overall, however, the construction of the Project will only temporarily disturb or alter native vegetation, and recovery of these communities will occur. Given that the impacts to vegetation from the proposed Project will be less than significant and the urban nature of the reasonably foreseeable projects, it is unlikely that the Project will contribute significantly to cumulative effects upon botanical resources.

Cumulative effects upon terrestrial wildlife resources are typically additive and directly proportional to the total area of habitat disturbance. The nature of these effects is also dependent upon the timing and duration of disturbances, and whether projects result in the temporary or permanent displacement of wildlife. The majority of the Project is located within an existing disturbed right-of-way, which is kept that way in order to maintain safe clearance for energized electrical conductors. Thus, construction and operation of the rebuilt line will not substantially modify this habitat nor contribute to a considerable cumulative loss of habitat for any species identified as a candidate, sensitive, or special status species. While construction may result in the temporary disturbance of individual animals in the vicinity of the Project area, this will be a short-term effect.

Similarly, construction and operation of the new transmission line facilities will not result in the loss of significant acres of sensitive wildlife habitat. Moreover, impacts are expected to be temporary and transitory in and around water resources and wetlands. Mitigation measures will reduce these impacts to less than significant. Since it is expected that other, reasonably foreseeable projects would not result in a loss of important habitat, including water resources and wetland habitat, the cumulative impact of the Project will not be cumulatively considerable.

17.2.3 Cultural Resources

Most of the Project is within a disturbed utility corridor and the remainder will not pass through known historical, archeological or paleontological resources. Nevertheless, impacts on unknown cultural resources (sites or artifacts that could be discovered during construction) will be mitigated if encountered. Since reasonably foreseeable projects are restoration projects within existing urban and suburban landscapes, the Project will not contribute to significant cumulative impacts on cultural resources in the area.

17.2.4 Energy and Utilities

Like PacifiCorp, most other energy and utility providers plan infrastructure upgrades incrementally to accommodate planned growth in their service areas, based on adopted city/county general plans. The proposed Project will accommodate the current and planned

growth, but will not itself induce growth. Thus, the Project will not contribute to significant cumulative impacts on energy and utilities in the area.

17.2.5 Geology and Geohazards

Project engineering, design and mitigation measures are available to address site-specific geologic conditions. Thus, the Project will not contribute to significant cumulative impacts related to geology, soils or seismicity in the area.

17.2.6 Hydrology and Water Quality

There is not likely to be any significant cumulative change in hydrology and water quality from the incremental impact of the proposed Project when added to existing or future projects.

17.2.7 Land Use and Agriculture

The amount of land that will be permanently affected by the proposed Project is very small and it will primarily replace a transmission line in an existing utility corridor. The preferred new line route is compatible with existing agricultural land use in the area and will preserve open space. Furthermore, the proposed Project will not directly induce growth or foster the conversion of agricultural land to urban development. The Siskiyou County general plan has policies and land use elements that emphasize preservation of open space and agricultural lands in the area. Thus the Project will not contribute to significant cumulative impacts related to land use or agriculture in the area.

17.2.8 Audible and Radio Noise

Corona and electrical effects are expected to be similar to the existing condition once the Project is constructed. Only where the new 115 kV line will be constructed, will there be an incremental increase in corona and electrical effects. However, this minor increase will be less than significant, and will be mitigated as needed, and is therefore not expected to contribute to significant cumulative effects related to corona (e.g., audible and radio noise) and electrical effects (e.g., electrical field induction and induced currents) in the study area.

Noise impacts from construction will be temporary and can be mitigated to a less than significant level. Potential cumulative construction noise from the Project and those reasonably foreseeable projects listed in Table 17-1 will also be less than significant due to timing of the future projects and their distance from the proposed Project.

Once constructed, the Project will not significantly increase ambient noise levels in the Project area, and thus will not contribute to significant cumulative noise impacts in the study area.

17.2.9 Hazards and Hazardous Materials

Most hazards from the Project are less than significant, and the unlikely fire hazard will be mitigated to less than significant. The other reasonably foreseeable projects are street and roadway improvements and will not present a similar hazard. Thus, when combined with these projects, the impacts from the proposed Project are unlikely to be cumulatively significant.

17.2.10 Transportation and Traffic

Transportation and traffic impacts during Project construction (e.g., traffic control, temporary lane closures) will be temporary and less than significant. The Project will not contribute to any long-term significant cumulative transportation or traffic impacts in the study area.

17.2.11 Visual and Aesthetic Resources

Most of the other projects listed in Table 17-1 are located near other existing urban developments and involve the reconstruction or resurfacing of existing features. They represent no appreciable modification of existing visual resources. When combined with the less than significant impacts of the proposed Project, the impacts will not be cumulatively significant.

17.2.12 Growth Inducing Impacts

The proposed Project will increase transmission capacity in the area, and therefore will allow additional economic or population growth to be accommodated. However, the Project will not itself be growth inducing. As well, the reasonably foreseeable projects within the area are likewise not growth inducing, but are projects necessary to maintain adequate roadways in Siskiyou County and local communities. Therefore the Project will not contribute to significant cumulative growth inducing impacts in the area.

17.3 Conclusion

There is not likely to be any significant change in the environment resulting from the incremental impact of the proposed Project when added to other existing or reasonably foreseeable future projects in the study area.

17.4 References

California Department of Transportation. 2004 State Transportation Improvement Program, Current Official STIP, Siskiyou County.

Personal communication with Rowland Hickel, Siskiyou County Planner and Mark Schaffer, POWER Engineers, Inc. August 26, 2005 and October 12, 2005.

Personal communication with Deborah Salvestrin, City of Weed Clerk and Mark Schaffer, POWER Engineers, Inc. August 26, 2005.