JUNE 1999

REEDSPORT-FAIRVIEW TRANSMISSION PROJECT

Final Environmental Assessment
DOE/EA-1283

EXISTING POLE – REEDSPORT-FAIRVIEW LINE

BONNEVILLE POWER ADMINISTRATION

REEDSPORT - FAIRVIEW TRANSMISSION PROJECT

Responsible Agency: U.S. Department of Energy, Bonneville Power Administration (BPA)

Name of Proposed Project: Reedsport - Fairview Transmission Project

Abstract: Bonneville Power Administration proposes to construct 3.6 miles of new 115-kilovolt (kV) transmission line to replace 8.7 miles of existing Reedsport-Fairview 115-kV line near Coos Bay, Oregon. The new line would use H-frame wood poles and would require from 100 to 130 feet of new right-of-way. BPA would acquire new access roads and access rights on existing roads for construction and maintenance of the new line.

BPA considered two alternatives to the Proposed Action: Alternative Action and No Action. In the Alternative Action, BPA would upgrade 8.7 miles of the existing Reedsport-Fairview line. Most of the existing wood pole H-frame structures would be replaced with the same design except for 1 mile where tubular steel poles would be installed.

In the No Action Alternative, BPA would not upgrade or construct a new line. The existing line would remain in operation.

The environmental analysis determined that the Proposed Action, Alternative Action, and the No Action Alternative would have no significant impacts.

The comments received on the preliminary environmental assessment and responses to the comments are in Appendix B.

The Final EA looks much like the Preliminary EA. Changes are underlined. Simple editorial changes and small areas that were deleted are not marked. The Finding of No Significant Impact (FONSI) and the Mitigation Action Plan (Appendix C) are included in this document.

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For more copies of this document, call (800) 622-4520 and ask for the document by name. The document is also available at the BPA, Environment, Fish & Wildlife Home Page: www.efw.bpa.gov/Environment/POLICIES/NEPA. Look for *PUBLICATIONS* and click on *Reedsport-Fairview Transmission Project.*

For additional information on DOE NEPA activities, please contact: Carol Borgstrom, Director, Office of NEPA Oversight, EH-25, U.S. Department of Energy, 1000 Independence Avenue S.W., Washington, D.C. 20585; (800) 472-2756.

REEDSPORT-FAIRVIEW TRANSMISSION PROJECT

FINDING OF NO SIGNIFICANT IMPACT

June 1999

DEPARTMENT OF ENERGY
Bonneville Power Administration

Reedsport-Fairview Transmission Project

Finding of No Significant Impact (FONSI)
and Floodplain Statement of Findings

Summary: Bonneville Power Administration (BPA) is proposing to construct 3.6 miles of new 115-kilovolt (kV) transmission line to replace 8.7 miles of existing Reedsport-Fairview 115-kV line near Coos Bay, Oregon. The existing line is old and deteriorating. Right-of-way access and maintenance along this section of line is difficult because of extensive development. BPA needs to correct these conditions.

BPA has prepared an Environmental Assessment (DOE/EA-1286) evaluating the proposed project. Based on the analysis in the EA, BPA has determined that the proposed action is not a major Federal action significantly affecting the quality of the human environment, within the meaning of the National Environmental Policy Act (NEPA) of 1969. Therefore, the preparation of an Environmental Impact Statement (EIS) is not required and BPA is issuing this FONSI. A Floodplain Statement of Findings is also included.

Copies: For copies of the EA and FONSI, please call BPA's toll-free document request line: 800-622-4520. The documents are also available at the BPA, Environment, Fish & Wildlife Home Page: www.efw.bpa.gov/Environment/POLICIES/NEPA. Look for *PUBLICATIONS* and click on *Reedsport-Fairview Transmisson Project.*

For Further Information, Contact: Nancy Wittpenn – KECN-4, Bonneville Power Administration, P.O. Box 3621, Portland, Oregon, 97208-3621, phone number 503-230-3297, fax number 503-230-5699, e-mail nawittpenn@bpa.gov.

Supplementary Information: BPA's existing Reedsport-Fairview No. 1 transmission line, a 115- kV line, serves customers in southern Oregon coastal communities. This line not only provides voltage support but also backs up BPA's 230-kV transmission system if one of the 230-kV lines or substations goes out of service.

BPA acquired sections of the Reedsport-Fairview transmission line in the early 1950s to serve a substation in Coos Bay. Though the substation was later removed from BPA's system, the line remains important to BPA transmission system operations to move electricity between Reedsport and Fairview.

BPA has repaired sections of the line as needed. Now, an 8.7-mile section, between structures 27/5 and 36/2, needs repair. In this section, many poles and cross-arms that hold the electrical line (conductor) are near the end of their life expectancy and are deteriorating. The conductor is also old and deteriorating. Line repairs, such as splices, have been done, but repairs can weaken a line, and in this section, there are as many as eight splices in a span between transmission structures.

BPA could rebuild the line in place, but BPA is considering moving the line for several reasons:

- Since the Coos Bay substation was removed from this line, BPA no longer needs the line to be located so far west.
- This segment could be shortened to increase energy efficiency. (The longer a line, the more power it loses.)
- Extensive development along the existing line makes right-of-way maintenance difficult.
- In the long term, maintenance and construction costs could be less if the line is shorter.

The new line would be built from structure 36/2 north 3.6 miles to a point near structure 27/5. It would parallel an existing PacifiCorp 230-kV transmission line for about 2.6 miles, then head northeast on new right-of-way for about 1 mile until it connects with the existing Reedsport-Fairview line near structure 27/5. The new line would be located on the west side of PacifiCorp's 230-kV line for about 2 miles and would cross over to the east side at Eastside Sumner Road (Old Wagon Road).

The new line would use H-frame wood poles and require from 100 to 130 feet of new right-of-way. BPA would need to acquire new access roads and access rights on existing roads for construction and maintenance of the new line. About 44 to 68 acres of trees would need to be cleared. Fiber optic cable would be installed on the new structures.

BPA also studied the Alternative Action, which would rebuild the existing line in the same location, and the No Action Alternative.

Low or minor and short-term or temporary impacts from construction of the Proposed Action would occur to fish and wildlife, soils, water quality, wetlands, public health and safety, land use, and socioeconomics. Though noise can disturb wildlife close to the construction area, wildlife would most likely return after the disturbance is removed. Noise, dust, and traffic disruption from construction can also temporarily disturb human populations. Although unlikely, construction may create indirect and temporary increases in soil erosion to Ross Slough, which could affect water quality and fish habitat. Impacts would diminish after disturbed areas are restored and erosion and runoff control measures take effect. Removing tall-growing vegetation in a wetland may increase sedimentation temporarily and reduce water quality, but a minimal amount of vegetation would be removed, and cut trees could be left on the ground to improve habitat if they did not impede water flow in the wetland. Radio and television interference from the new line could occur temporarily but BPA would promptly correct all interference. Spending in the local community and an increase in employment would be short-term but beneficial. Short-term impacts to property values and salability along the right-of-way may occur on an individual basis.

Long-term and permanent impacts to land use, socioeconomics, vegetation, and fish and wildlife would occur from the removal of 44 to 68 acres of tall-growing vegetation (timberland). Because BPA would compensate landowners for stumpage value, the class of timberlands to be removed, and because of the remaining amount of timberland available in Coos County, impacts would be minor. The removal of tall-growing vegetation can cause noxious weeds to infiltrate disturbed areas. Washing vehicles and reseeding disturbed areas as soon as possible after construction would reduce the opportunity for noxious weeds to spread. Some wildlife would be

displaced by vegetation removal, but because of the small amount removed and the likelihood that new wildlife would move into the newly created low-growing habitat, impacts would be low.

Visual impacts from the new line would occur for residential viewers and recreational users in the area. Impacts range from low to moderate. Most of the new line would parallel an existing PacifiCorp line. BPA would minimize pole height and use wood pole structures and dark-colored insulators to help reduce visual contrast with existing visual resource qualities in the surrounding area.

Other long-term impacts would be the elimination of several lots in an undeveloped and unimproved subdivision off Ross Slough Road. Landowners would be compensated for the fair market value of the right-of-way necessary for the new line. A small number of encroachments have been identified on the right-of-way. BPA would negotiate with landowners to remedy these encroachments. The new right-of-way is in a forest-use zone where new transmission lines that require up to 100 feet of right-of-way are allowed as a conditional use. BPA has limited the new right-of-way needed to 100 feet where practicable. More right-of-way will be needed in some areas to meet technical and safety requirements.

There would be no impacts to agriculture and floodplains because no land along this right-of-way is used for agriculture, and the new line will span the floodplain of Ross Slough. No impacts are expected to cultural resources because no sites were found along those portions of right-of-way that BPA had landowner permission to enter and survey.

Floodplain Statement of Findings: This is a Floodplain Statement of Findings prepared in accordance with 10 C.F.R. Part 1022. A Notice of Floodplain and Wetlands Involvement was published in the Federal Register on November 19, 1998, and a floodplain and wetlands assessment was incorporated in the EA. BPA is proposing to construct 3.6 miles of new 115-kV transmission line to replace 8.7 miles of the existing Reedsport-Fairview 115-kV line near Coos Bay, Oregon. The proposed action would cross the 100-year floodplain of Ross Slough. No impacts to the floodplain would occur because the line will span the floodplain. Also, no construction activities, including constructing new or improving existing access roads, would occur in the floodplain. An alternative to the proposed action is upgrading the Reedsport-Fairview 115-kV line in place. This alternative would cross the 100-year floodplain of Isthmus and Coalbank Sloughs and Snedden Creek. Temporary impacts could occur to Coalbank Slough and Snedden Creek during construction. BPA also studied the No Action Alternative. The proposed action conforms to applicable state or local floodplain protection standards.

BPA will allow 15 days of public review after publication of this statement of findings before implementing the proposed action.

Determination: Based on the information in the EA, as summarized here, BPA determines that the proposed action is not a major Federal action significantly affecting the quality of the human environment within the meaning of NEPA, 42 U.S.C. 4321 et seq. Therefore, an EIS will not be prepared and BPA is issuing this FONSI.

Issued in Portland, Oregon, on June 11, 1999.

/s/ Alexandra B. Smith
Alexandra B. Smith
Vice President
Environment, Fish and Wildlife Group

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1.0 Purpose and Need for Action

1.1 Need for Action

Bonneville Power Administration's (BPA) existing Reedsport-Fairview No. 1 115-kilovolt (kV) transmission line from structures 27/5 to 36/2* (see Map 1) is old and deteriorating. Right-of-way access and maintenance along this section of line is difficult because of extensive development. BPA needs to correct these conditions.

1.2 Background

BPA's existing Reedsport-Fairview No. 1 transmission line, a 115- kV line, serves customers in southern Oregon coastal communities. (See Map 1.) This line not only provides voltage support but also backs up BPA's 230-kV transmission system if one of the 230-kV lines or substations goes out of service.

BPA acquired sections of the Reedsport-Fairview transmission line in the early 1950s to serve a substation in Coos Bay. Though the substation was later removed from BPA's system, the line remains important to BPA transmission system operations to move electricity between Reedsport and Fairview.

BPA has repaired sections of the line as needed. Now, an 8.7-mile section, between structures 27/5 and 36/2 (see Map 1), needs repair. In this section, many poles and cross-arms that hold the electrical line (conductor) are near the end of their life expectancy and are deteriorating (see cover of this report). The conductor is also old and deteriorating. Line repairs, such as splices, have been done, but repairs can weaken a line, and in this section, there are as many as eight splices in a span between transmission structures.

BPA could rebuild the line in place, but BPA is considering moving the line for several reasons:

- Since the Coos Bay substation was removed from this line, BPA no longer needs the line to be located so far west.
- This segment could be shortened to increase energy efficiency. (The longer a line, the more power it loses.)
- Extensive development along the existing line makes right-of-way maintenance difficult.
- In the long term, maintenance and construction costs could be less if the line is shorter.

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* Structure numbers refer to a specific structure in a given mile of the existing line. For example, structure 27/5 is the fifth structure in Mile 27 of the Reedsport-Fairview line.

1.3 Purposes

In satisfying the underlying need, BPA wants to acheve the following purposes:

- Minimize environmental impacts
- Minimize costs
- Maximize transmission line loss savings
- Maintain or improve transmission system reliability.

1.4 Other Planning or Projects in the Area

1.4.1 South Oregon Coast Reinforcement Projec

BPA is currently working with the state of Oregon and local governments to study the environmental effects of building a 500-kV transmission line to the southern Oregon coast. The line would reinforce BPA's electrical service to the coast and provide the transmission capacity necessary for a steel mill that Nucor Steel, a division of Nucor Corporation, may build in the Coos Bay/North Bend area. A Draft Environmental Impact Statement is expected to be available for public review in summer 1999.

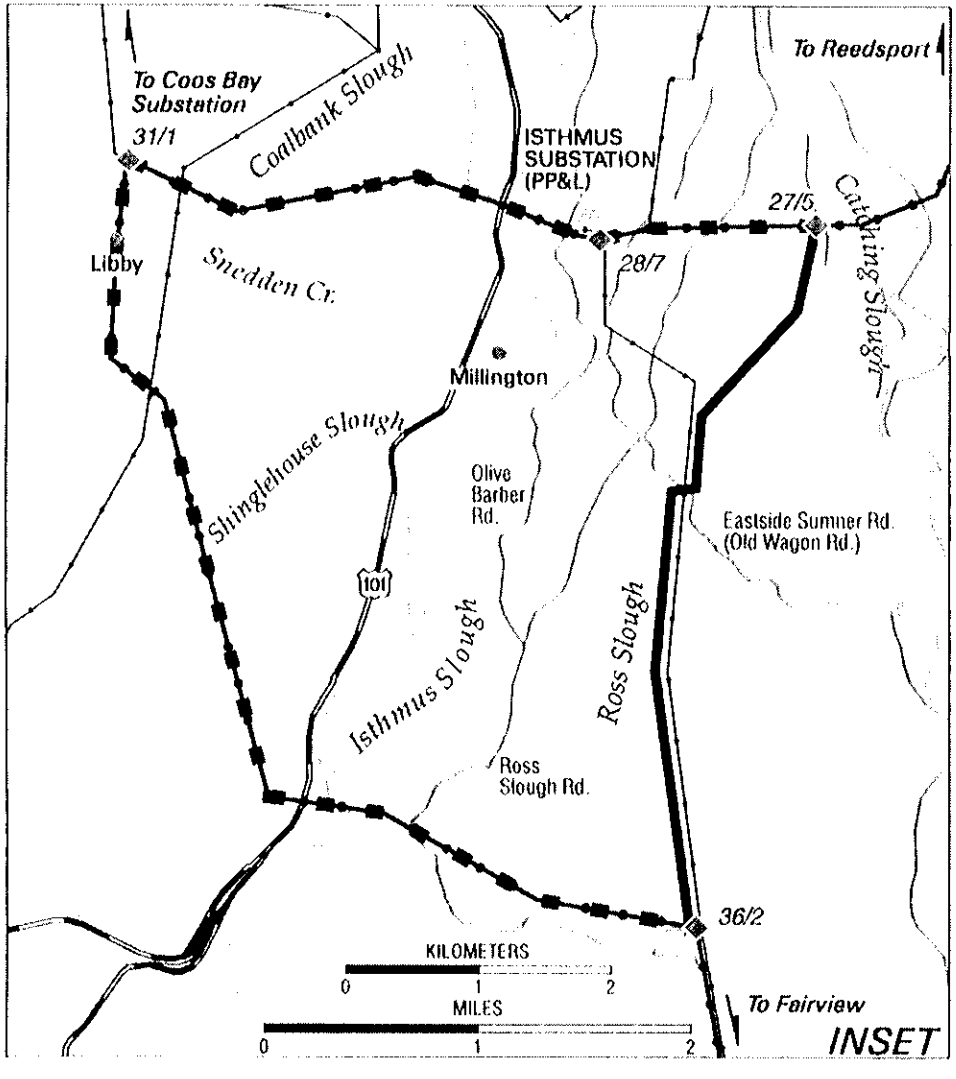
Part of one potential route for the new line is located along the same alignment as the Proposed Action for the Reedsport-Fairview Transmission Project. The environmental impacts of these projects are being analyzed in separate documents because the need and timeline for each project is very different. The cumulative impacts of building a line for the South Oregon Coast Reinforcement Project along the same alignment as the Proposed Action is described under each resource section in this document.

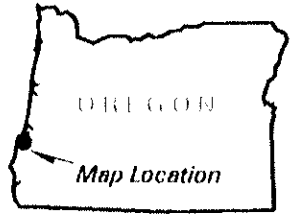
1.4.2 Planning for 230-kV Support

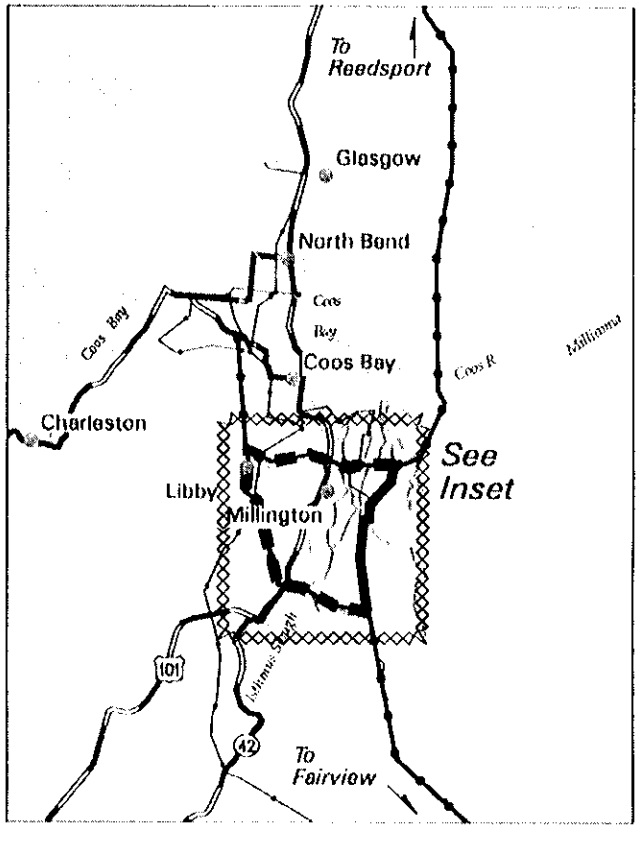
To provide reliable electrical service, BPA must be able to serve its customers if a transmission line or transformer goes out of service. System planners prepare for the loss of a transmission line or transformer and use establishedcriteria to determine what additional new facilities are needed. The expected load growth for the south coast area, without any new industrial development, is 1.5 percent annually. By 2004 or 2005 (based on present load forecasts), a new transmission line with a rating of at least 230-kV, and other equipment, may be required in the area to support the south coast for the loss of an existing 230-kV transmission line.

In addition, during off-peak times, the south Oregoncoast can experience high voltage problems. BPA has special equipment (transformer taps) to help regulate the voltage, but regulating the voltage can reduce the amount of megawatts that can flow through the transformer. Better voltage control needs tobe established for this area for light load conditions.

REEDSPORT–FAIRVIEW TRANSMISSION PROJECT







EXISTING

- BPA Transmission Line
- PP&L Transmission Line
- Road
- Highway
- Substation
- 36/2 Existing Structure Number

ACTION

- Proposed
- Alternative

BONNEVILLE POWER ADMINISTRATION GIS GEOGRAPHIC INFORMATION SYSTEM

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Map 1

Map 1

If the South Oregon Coast Reinforcement Project (see Section 1.4.1) were built, it would delay the need for 230-kV support and would address the voltage problems in the area.

1.4.3 Planning for Communication System Upgrade

BPA's communication system is an essential component to the operation and control of BPA's transmission network. In 1994, BPA started a system-wide upgrade of its communication system from microwave to fiber optics. As part of this communications upgrade, BPA will install fiber optic cable between Fairview, Oregon and Eugene, Oregon. Fiber optic cable would be installed on new poles, added to existing transmission structures, or buried within an existing transmission right-of-way. As part of its upgrade effort, fiber optic cable would be installed as part of the Proposed Action.

2.0 Alternatives

BPA is studying two alternatives to meet the need for this project. BPA is also studying the potential impacts of the No Action Alternative.

2.1 Proposed Action

BPA is proposing to construct 3.6 miles of new 115-kV transmission line in a new location to replace 8.7 miles of the existing Reedsport-Fairview No. 1, 115-kV transmission line. BPA would either remove or sell all or part of the existing line.

The new line would be built from structure 36/2 north 3.6 miles to a point near structure 27/5 (see Map 1). It would parallel an existing PacifiCorp 230-kV transmission line for about 2.6 miles, then head northeast on new right-of-way for about 1 mile until it connects with the existing Reedsport-Fairview line near structure 27/5. The new line would be located on the west side of PacifiCorp's 230-kV line for about 2 miles and would cross over to the east side at Eastside Sumner Road (Old Wagon Road).

The new line would use H-frame wood poles and require from 100 to 130 feet of new right-of-way. (See Figure 1.) BPA would need to acquire new access roads and access rights on existing roads for construction and maintenance of the new line. About 44-68 acres of trees would need to be cleared. Fiber optic cable would be installed on the new structures.

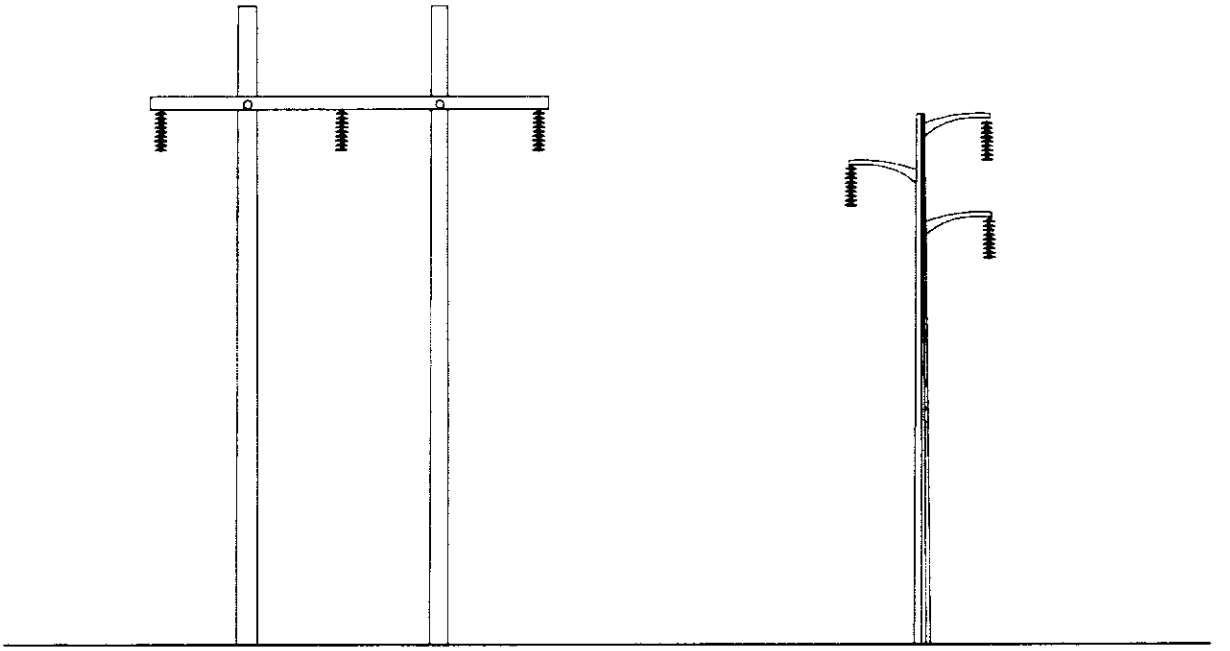
This option would cost approximately $1.93 million.

2.2 Alternative Action

BPA would upgrade the existing Reedsport-Fairview No. 1, 115-kV transmission line from a point near structure 27/5 to structure 36/2, a distance of 8.7 miles. Most of the existing wood pole H-frame structures would be replaced with new wood poles of the same design except in mile 31 (the Libby area) where tubular steel poles are proposed. (See Figure 1.) New conductor would be installed. Recent surveys indicate buildings and other land uses have encroached onto the BPA right-of-way. BPA would need to remove encroaching buildings and other structures. BPA may acquire additional right-of-way and additional access roads where needed. Limited clearing would occur, mostly to remove trees that pose a danger to the line.

This alternative would cost approximately $2.18 million.

Figure 1-Proposed Structures



115 kV wood pole H-frame

average height 75'
average span 750'

115 kV tubular steel

average height 60'
average span 350'

2.3 No Action Alternative

The No Action Alternative is the no build alternative. BPA would not upgrade or construct a new line and the existing Reedsport-Fairview No. 1, 115-kV transmission line from structures 27/5 to 36/2 would remain operational and in place. Maintenance activities would continue such as vegetation management, replacing old equipment, and improving access roads. Now that encroachments have been identified in the existing right-of-way, BPA would negotiate with landowners to remedy existing encroachments.

2.4 Alternatives Considered but Eliminated from Detailed Consideration

2.4.1 Double-Circuit with PacifiCorp's 230-kV Transmission Line

BPA had proposed to relocate a new line on double-circuit structures with PacifiCorp's existing 230-kV transmission line (see Map 1, PacifiCorp line is next to the Proposed Action). The existing 230-kV structures would be removed and the new double-circuit structures would be built in the same location as the PacifiCorp line. PacifiCorp would like to own and maintain the new double-circuit line, but BPA and PacifiCorp have different standards for owning and maintaining their transmission lines. These standards do not allow BPA to relinquish ownership and maintenance of this section of line. BPA is concerned with its ability to take the line out of service (outage) when necessary, based on recent experiences of trying to obtain outages on PacifiCorp's 230-kV line.

BPA is also concerned with reduced reliability. Putting both lines together on the same structure reduces service reliability. For example, if a landslide damaged a structure or a tree fell into the line, both lines could be out of service, reducing BPA's ability to serve its customers in the area.

For these reasons, this alternative is no longer being considered.

2.4.2 Parallel Ross Slough Road

BPA studied the option of locating a portion of new line parallel to Ross Slough Road on new right-of-way (see Map 1). Instead of the new line heading northeast to a point near structure 27/5, the new line would head northwest and generally follow the existing PacifiCorp line across Ross Slough, then parallel Ross Slough Road north to BPA's existing right-of-way. Because the line would follow the turns of Ross Slough Road, it would require many more **angle structures,*** which are larger and more expensive than the more commonly used **tangent structures**. The new line would directly impact more homes, and more structures would be placed in Ross Slough, making the line harder to maintain.

For these reasons, this alternative is no longer being considered.

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* Words in bold are defined in Section 7, Glossary.

2.5 Comparison of Alternatives

This section compares the alternatives described in this chapter using the project purposes and the predicted environmental impacts. Tables 1 and 2 summarize the environmental impacts and compare the alternatives.

Table 1-Environmental Impacts of Alternatives

Environmental Resource	Existing Conditions	Proposed Action	Alternative Action	No Action Alternative
Land Use	Rural residential, agricultural, forestland; some urban and industrial land; some encroachments on existing line.	44-68 acres of timberland converted to utility use; remove pole barn; subdivision lots eliminated.	Encroachments would be remedied. Impacts would be low to moderate.	Same as Alternative Action.
Agriculture	Agricultural use along the right-of-way for the Alternative Action. Most land in pasture.	No impacts expected.	Isolated pastures crossed; short-term impacts expected; negligible land removed from production.	No impacts expected beyond those already incurred from existing line.
Socioeconomics	Population growth from in-migration; agriculture, timber and fishing are major components of the economy.	No long-term impacts to population; low impact to property taxes from reclassification of timberlands; beneficial to lodging industry.	No long-term impacts to population; beneficial to lodging industry.	Outages could result; increased maintenance costs; risk of liability for damages to homes and other property.
Visual Resources	Mostly Class III and IV visual resource qualities; some Class II.	May impact residential viewers; some low to moderate impacts.	Area already visually impacted by existing line; visual conditions may improve with structure design.	No impacts expected beyond those already incurred from existing line.
Recreation	Dispersed recreation might occur.	Viewshed of recreational users would be altered.	Viewshed of recreational users would be altered.	No impacts expected beyond those already incurred from existing line.
Soils and Geology	Some soils flood frequently; soils on hills derived from sedimentary rocks.	Soils disturbed as vegetation is removed for construction. Erosion may increase temporarily.	Ground disturbance and vegetation removal may cause temporary increased erosion.	No impacts expected beyond those already incurred from existing line.

Environmental Resource	Existing Conditions	Proposed Action	Alternative Action	No Action Alternative
Vegetation	Vegetation includes conifers, shrubs, grasses and forbs.	44-68 acres of cleared forestland. Noxious weeds could spread. Impacts would be low.	Selective clearing along the right-of-way and ground disturbance would create low impacts.	No impacts expected beyond those already incurred from existing line.
Wetlands	Numerous wetlands mostly associated with sloughs.	Some clearing could occur in forested wetland causing indirect low to moderate impacts.	One structure in wetland could be removed when ground is dry. New structure could be located outside of wetland. Overall impacts would be low.	No impacts expected beyond those already incurred from existing line.
Floodplains	Three 100-year floodplains crossed by the alternatives.	Line would span Ross Slough floodplain. No impacts expected.	No impacts to Isthmus Slough. Temporary impacts while structures are replaced near Coalbank Slough.	No impacts expected beyond those already incurred from existing line.
Water Quality	Coalbank and Isthmus sloughs are "water quality limited" under the Clean Water Act.	Localized increases in erosion and runoff. Impacts would be low.	Minimal impacts expected from disturbance.	No impacts expected beyond those already incurred from existing line.
Fish and Wildlife	Many species of birds, fish and mammals are found in the various habitat types in the project area.	Minor temporary disturbances from construction. Vegetation removal would create low impacts. No threatened or endangered species would be affected.	Minor temporary disturbances from construction. Vegetation removal would create low impacts. No threatened or endangered species would be affected.	No impacts expected beyond those already incurred from existing line.
Cultural Resources	No sites found; two areas of potential effect identified.	No sites found within the area of potential effect.	Two areas of potential effect identified. Need test excavation.	No impacts expected.
Public Health and Safety	Existing line creates EMF.	EMF increases west of the existing 230-kV line. EMF produced along new ROW.	EMF increases slightly on west side of line in the Libby area.	No impacts expected.

Table 2-Alternatives Compared to Project Purposes

Project Purposes	Proposed Action	Alternative Action	No Action Alternative
Minimize environmental impacts	Minimizes impacts to humans; more timber removed.	Encroachments present along right-of-way; little clearing required.	Minimizes environmental impacts.
Minimize costs	Less expensive than the Alternative Action. Would produce additional savings if transmission upgrades are needed.	More expensive than the Proposed Action. Cannot accommodate future transmission upgrades, so no additional savings.	Least expensive in the near term; may be most expensive if reliability is compromised.
Maximize transmission line loss savings	Increases energy efficiency (line loss savings of one megawatt/year worth $160,000/year; at 7% interest over 20 years, it is worth $1.6 million).	Does not reduce line losses.	Does not reduce line losses.
Maintain or improve transmission system reliability	Improves maintenance access, which improves reliability.	Does not improve maintenance access. Reliability would be improved but not as much as the Proposed Action.	Could reduce transmission system reliability.

3.0 Affected Environment and Environmental Impacts

3.1 Land Use

3.1.1 Affected Environment

Proposed Action – The proposed transmission line would be located on private land and would cross the right-of-way of Eastside Sumner Road.

Land uses in the vicinity of the new line include rural-residential land, used mostly for agricultural production (in the lower elevations), and private forestland used for timber production (at the high elevations). Two residential dwellings exist within 500 feet of the east side of the new right-of-way, and seven residential dwellings exist within 500 feet of the west side of the new right-of-way.

An undeveloped residential subdivision also exists in the project area off Ross Slough Road, known as Edmonton's First Addition (platted in 1907). The subdivision contains 60 tax lots. To date, no lots have been developed.

Alternative Action – Land uses in the vicinity of this alternative are primarily forestlands with rural-residential uses at the southern end and urban-residential uses in the northern end, within the unincorporated community of Libby. The existing transmission line crosses industrial land just west of the Isthmus Slough.

The BPA right-of-way is not a consistent width over the 8.7 miles of line that needs to be replaced. The right-of-way ranges from a pole line easement (no right-of-way width) to a width of 60 feet. Some encroachments exist in the right-of-way, particularly in the Libby area. Encroachments include residential dwellings, outbuildings, other structures, and stored material.

3.1.2 Potential Impacts of the Proposed Action

Short-term (Construction) Impacts – These impacts include noise, dust, and traffic disruption, the potential for erosion, and the proliferation of noxious weeds following clearing activities. These impacts are considered to be adverse, but short-term. (See also Sections 3.6, 3.7, and 3.13.5). With mitigation, they are expected to be minor. (See Sections 3.1.6, 3.6.6, 3.7.6, and 3.13.8.)

Long-term (Operation/Maintenance) Impacts – Long-term impacts include the conversion of timberland (44-68 acres) to a developed transmission line right-of-way. Because of the remaining amount of timberland in Coos County (over 500,000 acres), and because BPA would compensate landowners for stumpage value (both on and off right-of-way), impacts would be minor.

Another long-term impact would be the elimination of a number of lots in Edmonton's First Addition, a subdivision off Ross Slough Road. The proposed right-of-way would eliminate the first four lots in the five blocks east of proposed I Street. BPA

engineers worked to propose a route that would minimize the number of lots affected. Since there are currently 124 single family lots on the market in the Coos Bay/North Bend area (McClintock, December 29, 1998), the elimination of potential building sites in the subdivision would not be expected to influence the cost of building sites currently on the market in the area. BPA would compensate the landowner(s) for the fair market value for the right-of-way necessary to build the line through the subdivision. Land values would be determined in the appraisal process.

Long-term impacts would also include the removal of a relatively new pole barn off West Catching Slough Road. The landowner would be compensated for the fair market value of the building.

3.1.3 Potential Impacts of the Alternative Action

Short-term Impacts – See Section 3.1.2, Potential Impacts of the Proposed Action.

Long-term Impacts – BPA has identified encroachments in the right-of-way including three residences, outbuildings and other structures, and structures and stored material at a small sawmill. BPA would negotiate with landowners to remedy existing encroachments. Because of the small number of encroachments, the overall impact would be low to moderate.

3.1.4 Potential Impacts of the No Action Alternative

The No Action Alternative assumes that no new transmission facilities (poles, conductors and other electrical equipment) would be built between structures 27/5 and 36/2 of the Reedsport–Fairview 115-kV transmission line. Impacts associated with maintenance of the line would continue. Now that encroachments have been identified on the existing line, BPA would negotiate with landowners (see Section 3.1.3). Impacts would be low to moderate because of the small number of encroachments.

3.1.5 Cumulative Impacts

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet, and would also require new right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities would likely consider constructing any necessary future transmission lines parallel to the existing lines. Paralleling existing lines and increasing the width of the right-of-way could impact the land uses in the area, including residential land and timberland. Removal of residential land or timberlands from production would be an incremental increase in lands lost to previous development and to future development not necessarily intended for utility facilities.

3.1.6 Mitigation for the Proposed and Alternative Actions

- The right-of-way through Edmonton's First Addition has been aligned in a north–south direction to minimize the number of lots that would be affected by the new right-of-way.
- BPA would compensate the landowner(s) for the lots within the Edmonton's First Addition that would be acquired for the new right-of-way.
- BPA would enter into negotiations with landowners for any new right-of-way needed to construct the proposed project. Fair market value would be paid to landowners based on the appraisal process.

3.2 Agriculture

3.2.1 Affected Environment

Most of the agricultural lands in Coos County are used for pasture. According to the 1992 Census of Agriculture, Coos County had over 103,000 acres in pasture. Most pasturelands in the project area are located on poorly-drained **floodplains** and support grazing for horses and cattle. Frequent periods of flooding in the winter restrict the choice of appropriate pasture grasses to those that can withstand prolonged inundation. Hence, soil drainage is required. Because local soils have clayey subsoils, open ditches are used to drain pastures. High humidity and persistent rainfall in the late spring hinder the production of high quality hay (U. S. Department of Agriculture, Soil Conservation Service, 1989).

3.2.2 Potential Impacts of the Proposed Action

No land currently in agricultural use would be crossed or impacted by the Proposed Action.

3.2.3 Potential Impacts of the Alternative Action

Potential impacts to agricultural operations include: (1) permanent and temporary loss of productive farmland from construction activities and structure locations; (2) reduced soil productivity due to soil disturbance; (3) changes in normal farming and grazing operations, (4) the introduction of weeds, and (5) removal of farm structures.

It can be difficult and time consuming for operators to work around transmission lines. Poorly positioned transmission structures can require changes in field boundaries, equipment, and alterations in normal tillage operations. During line construction, soils are susceptible to compaction and rutting by heavy equipment and vehicular traffic, particularly when wet. Soil compaction reduces farmland productivity. Relocation of

stock during construction and maintenance activities can temporarily disrupt normal grazing operations. In addition, disturbance around structures increases a site's susceptibility to weed infestation.

The Alternative Action crosses isolated areas currently used for pasture. Structures proposed to be removed and/or replaced in pastureland are in Ross Slough (structures 28/1 to 28/2); the Coalbank Slough drainage (structures 30/5-30/6 and 31/14-31/16); and the east side of Isthmus Slough (structures 34/3 to 34/5). These areas are located on low-lying floodplains and terraces. Impacts from removal or replacement of these structures would be localized, of low intensity, and predominately short term (somewhat dependent on design and location). Impacts would be confined primarily to potential crop damage, soil compaction and the resulting loss of productivity, and temporary inconvenience to grazing operations caused by construction activities. The amount of land removed from production would be negligible and confined to the area occupied by the new structure base.

3.2.4 Potential Impacts of the No Action Alternative

No impacts to agriculture are expected.

3.2.5 Cumulative Impacts

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet, and would also require new right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities would likely consider constructing any necessary future transmission lines parallel to the existing lines. Paralleling existing lines and increasing the width of the right-of-way along this route would not cause cumulative impacts to agricultural land because none of these lands exist along this right-of-way.

3.2.6 Mitigation for the Proposed and Alternative Actions

- Construction activities would be coordinated with the farm operator to minimize impacts and inconvenience to farming and grazing operations.
- To minimize compaction, heavy vehicle traffic would be kept to a minimum.
- Farm operators will be compensated for any crop or equipment damage and assisted in controlling weeds and restoring productivity of compacted soils. No gravel or blading of the ground surface will occur within agricultural areas.
- Landowners will be provided with publications on how operators can deal with shock hazards.

3.3 Socioeconomics

3.3.1 Affected Environment

Population – The resident population of Coos County is approximately 62,000 persons, half of whom reside in the Coos Bay/North Bend area, the largest urban population on the Oregon Coast (State of Oregon Employment Department, November 1997). According to the U.S. Census Bureau, Coos County has experienced a relatively sluggish population growth since the last decennial census (1990), and what growth has occurred has been almost exclusively due to in-migration.

Coos County's senior population (over 65 years of age) has continued to accelerate faster (as a percentage of total population) than the state's population in this age group since 1980. This pattern (high in-migration and an expanding population of senior citizens) is indicative of an area that is popular among retirees. Other counties on the Oregon Coast also have expanding senior populations.

Race and Ethnicity –The residents of Coos County are predominantly white, non-Hispanic, according to the U.S. Census Bureau (1994). The county's minority population (during that year) was 6.4 percent of the total population, up from 5.6 percent in 1990. By July 1996, the state estimated that the county's minority population had increased to 7.1 percent. The two largest minority groups are Hispanics and Native Americans (State of Oregon, November 1997).

Industry Employment – A basic component of the south coast's economy is agriculture. According to the 1992 Census of Agriculture, Coos County has over 175,000 acres of farmland, consisting of a combination of pasture, range and woodland. The main agricultural crops in the county are cranberries and nursery stock.

Timber sales from small woodlots are another important component of the local economy. Over 60 percent of the forestland available for commercial production in Coos County is privately owned (State of Oregon, November 1997). Fishing is also an important component of the area's economy. Though a significant amount of fish are landed at ports in Coos and Curry counties (approximately one third of the value of all Oregon landings), employment in seafood processing has been sharply reduced from previous levels. Manufacturing employment has also fallen in Coos and Curry counties, about 45 percent over the past decade, when nearly 2,300 jobs were lost. Looking back over the past 20 years, employment in the timber industry has fallen by more than 3,800 jobs, a 62 percent reduction in employment.

A portion of the economy that is growing is the services, trade and government sectors which have added significantly to non-farm employment, adding over 4,000 jobs in both counties (Coos and Curry) during the past decade. While these jobs are important to the local economy, they traditionally earn a lower rate of pay than jobs in the manufacturing sector (State of Oregon, November 1997).

Labor Force and Unemployment – Since the late 1970s, Coos County's civilian labor force has increased very little, due to the sharp reductions in the participation rates for men, following national trends. While the labor force participation rates for women have increased markedly during this period, they did not increase by a significant percentage to offset the employment reductions in the fishing and lumber and wood products industries on the southern Oregon coast. According to the Oregon Employment Department, the southern Oregon Coast (Coos and Curry counties) never has experienced a jobless rate that has fallen below the rate for the state as a whole (State of Oregon, November 1997). Coos County's unemployment rate currently exceeds 9 percent, one of the highest unemployment rates in the state (State of Oregon, October 1998).

Median Household Income – According to the U.S. Census Bureau, median household income for Coos County (in 1989, the most recent information available), amounted to $22,146, or 81 percent of Oregon's median household income for the year. About one third of Coos County households (34 percent) had incomes below $15,000 (compared with 25 percent statewide), and approximately one quarter of Coos County households had incomes of $35,000 or more, compared with 37 percent of the households in the state.

In 1997, the U.S. Census Bureau released model-based estimates of income and poverty for states and counties for the year 1993. Though they may be less precise than the 1990 sample-based Census data, they are more current. Coos County's median household income estimate was $25,220, up 14 percent from 1989 (82 percent of Oregon's median), and ranked 30th of 36 counties in the state. The median household income statewide during this year was $30,610, an increase of 11.2 percent from 1989 (State of Oregon, November 1997).

Property Taxes – Property taxes help support government services such as police and fire prevention, and are levied on private property unless the property is tax exempt (such as churches and schools). All federal, state and local government real property and improvements are exempt from property taxes, as are BPA transmission facilities. Though BPA transmission lines are exempt, any private land on which the facilities would be constructed (BPA rights-of-way), would continue to be taxed (with some exceptions), but usually at a lower rate, based on the specific limitations such use would place on the property, if any. (See Appendix A.)

In western Oregon, private timberlands are assigned a specific land designation (class) based on the ability of the land to produce Douglas fir. These timberland designations range from Class FA (the highest quality) to class FG (the lowest quality). When a transmission line is built, any timberland within the right-of-way is reclassified from its site classification to FX, and the assessment would be based on this new classification. The Oregon Department of Revenue, Office of Assessment and Appraisal of Timber, assigns the values to timberlands statewide. In western Oregon, the 1998/1999 timberland values range from $890/acre for FA to $10/acre for FG. FX carries a timberland value of $0. Property taxes (on forestlands) are based on the assessed value for timberlands, which is calculated at 20 percent of the value assigned to the class (Gabrielsen, December 21, 1998).

3.3.2 Potential Impacts of the Proposed Action and the Alternative Action

Short-term Impacts – Construction would involve clearing new right-of-way, improving or building new access roads and building the transmission line. Right-of-way clearing would likely be performed by local labor; however, BPA may contract out construction of the transmission line, using a competitive bid process to obtain both labor and materials. Transmission line construction requires skilled labor and equipment that are unique; therefore, the prime contractor would likely come from outside the local area, e.g., from the Seattle, Portland or the Eugene area. Construction would typically require two crews of 5-6 workers each, who would earn wages averaging $30-$75.00/hour. A construction project of this size would likely be completed in 6-8 weeks.

Depending on where the transmission line workers reside, and whether construction would involve a five or six-day workweek, the construction crews would typically stay in the area until the project is completed. Construction workers would either stay in temporary housing (motels/hotels) or bring their own accommodations (camper/trailer) and stay in RV parks or campgrounds. Because of the large number of RV parks/campgrounds/motels in the Coos Bay/North Bend/Charleston areas (27), limited number of workers (10-12), and the short duration of the construction project (6-8 weeks), the impact to the commercial lodging industry in the area would be minor. Overall, the short-term construction impacts would be considered beneficial to the local economy. The proposed project would create an increase in employment and spending in the local economy over the short term.

Long-term Impacts – Neither alternative would create any long-term impacts on population because the alternatives would not induce growth and should not cause in-migration. Neither alternative would create any long-term impacts on housing. Operation and maintenance of the line would continue to be under the purview of BPA. Normal maintenance would involve brush clearing by a BPA contractor, ordinarily performed every 5 years in areas west of the Cascade Range. This employment impact would be low because it would not contribute to a significant increase of employment in the county.

The Proposed Action would have a low impact on timberlands in the county due to the amount of timberland that would be affected (44-68 acres), as well as the class of timberlands that would be removed from production (FC). Landowners would be compensated for stumpage value of the timber.

Property Impacts – Any new transmission line or access road easement would be appraised, and landowners would be offered fair market value for these land rights. Some short-term adverse impacts on property value and salability along the proposed new right-of-way may occur on an individual basis. However, these impacts are highly variable, individualized, and unpredictable. Neither alternative is expected to cause overall long-term adverse effects on property values along the existing right-of-way. For a more detailed discussion of Property Impacts, see Appendix A.

Property Taxes – The Proposed Action would affect the amount of taxes received by the local taxing authority, i.e., the Coos County Assessors office, although the amount would be insignificant. While no property would be removed from the assessor's rolls, some timberlands within the right-of-way would be reclassified from FC ($490/acre) to FX ($0/acre). The Proposed Action would remove 44-68 acres of timberland from the tax rolls. Given that property taxes are based on 20 percent of the value assigned to the class, and given that the current tax rate in the area is $8/1000 (Wallace, December 17, 1998), the impact to the county from timberlands would be less than $50/year (in 1998 dollars).

Constructing the Alternative Action could also have implications on the amount of taxes collected by the local taxing authority, depending on whether the encroachments that are within BPA's right-of-way could be moved or would need to be demolished. This impact is also expected to be low.

In conclusion, the socioeconomic impacts of both alternatives would be considered low. Some timberlands would be lost with the Proposed Action; however, landowners would be compensated both for the value of the timber removed. Impacts to the county would be minor. The construction impacts of either alternative would be considered beneficial to the local economy.

3.3.3 Potential Impacts of the No Action Alternative

The No Action Alternative assumes that no new transmission facilities would be built. Not replacing these facilities would likely result in more outages to BPA customers and potentially increased maintenance costs (in both time and materials) to keep the existing line in operation. BPA may also face additional risks of liability if homes or other types of property are damaged from deteriorating poles and conductor.

3.3.4 Cumulative Impacts

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet, and would also require new right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities would likely consider constructing any necessary future transmission lines parallel to the existing lines. Paralleling existing lines and increasing the width of the right-of-way could cause impacts to residential areas and timberland. Removal of residential lands and timberlands from production would be an incremental increase in lands lost to previous development and to future development that were not necessarily intended for utility facilities. Continued loss of residential lands to utility use could result in the taking of the entire piece of property, depending on the size and configuration of the property,

potentially causing some landowners to relocate. Continued loss of timberlands could reduce tax revenues for the county.

3.3.5 Mitigation for the Proposed and Alternative Actions

- Compensate landowners for timber removal.

3.4 Visual Resources

3.4.1 Affected Environment

The Bureau of Land Management's Visual Resource Management Program (VRMP) was used to depict visual resource qualities along the proposed right-of-way in each alternative (U.S. Department of Agriculture, 1980). Four visual resource categories are included within the VRMP (see Map 2):

- VRM Class I - Preserve the existing character of the landscape;
- VRM Class II - Retain the existing character of the landscape;
- VRM Class III - Partially retain the existing character of the landscape; and
- VRM Class IV - Allow major modifications of existing landscape character.

These classifications are applied to landscapes based on form, line, color, texture and the scale of predominant natural features and the landscape. Disturbed landscapes tend to be rated lower. The proximity of the existing and proposed new right-of-way to private residences and public highways are considered in the classification of lands along the right-of-way.

Proposed Action – Visual resources are mostly classified Class III and IV (see Map 2). A small Class II segment occurs within the first mile of the new right-of-way (to the south). New right-of-way to the north is classified VRM Class III.

Forty-four man-made structures were inventoried within 500-feet of the new right-of-way. The greatest concentration of structures occurs just before the new right-of-way heads northeast (near Eastside Sumner Road).

Alternative Action – The majority of the existing right-of-way crosses landscapes classified as VRM Class III and IV (see Map 2). The crossings of Isthmus Slough/Highway 101 and the existing right-of-way that passes through Libby are categorized as VRM Class II because of the visual sensitivity of these areas.

No VRM Class I areas occur along the right-of-way in either alternative. The number of structures along the existing right-of-way in the Alternative Action were not inventoried but a review of the aerial photography reveals a greater number of structures along the right-of-way in the Alternative Action than the Proposed Action.

3.4.2 Potential Impacts of the Proposed Action

A 1/2-mile section of VRM II occurs within the first mile of the new right-of-way (to the south, see Map 2). A moderate impact was assigned to this area due to the sensitivity of residential viewers in the area. The section of new right-of-way to the north is classified VRM Class III. As the line would reduce the visual landscape quality in this area and impact a number of residential/rural viewers, visual impacts in this area are moderate. The remainder of the proposal crosses visually less sensitive areas and would have low or minimal visual impacts.

The Proposed Action crosses land between Isthmus and Catching Sloughs. Isthmus Slough seems to be a transportation barrier possibly causing properties east of Isthmus Slough to be less intensively settled than lands along the right-of-way in the Alternative Action. While there are locations where the Proposed Action is visible from Highway 101 and developed properties to the west, the line is sufficiently distant (more than 1 mile away) that viewers presently are not adversely impacted. Along the new right-of-way to the north, trees and distance will buffer distant views from the west.

If the existing line is removed, vistas would improve for those landowners within the viewshed of the existing line. If the line remains in place, existing visual impacts would remain the same.

3.4.3 Potential Impacts of the Alternative Action

Moderate impacts would occur at two locations where the line crosses Highway 101 and Isthmus Slough. Both areas possess floodplain/wetland landscapes bordered by forested hills. The existing right-of-way has impacted views and a reconstructed line would not significantly change the visual impact already caused by the existing line. It may be possible to improve visual conditions if this alternative is chosen. (See Section 3.4.6, Mitigation.)

A moderate impact was also assigned to the portion of existing right-of-way that passes through Libby. The existing line already causes visual impacts but its single pole design helps reduce the height and visibility of the line.

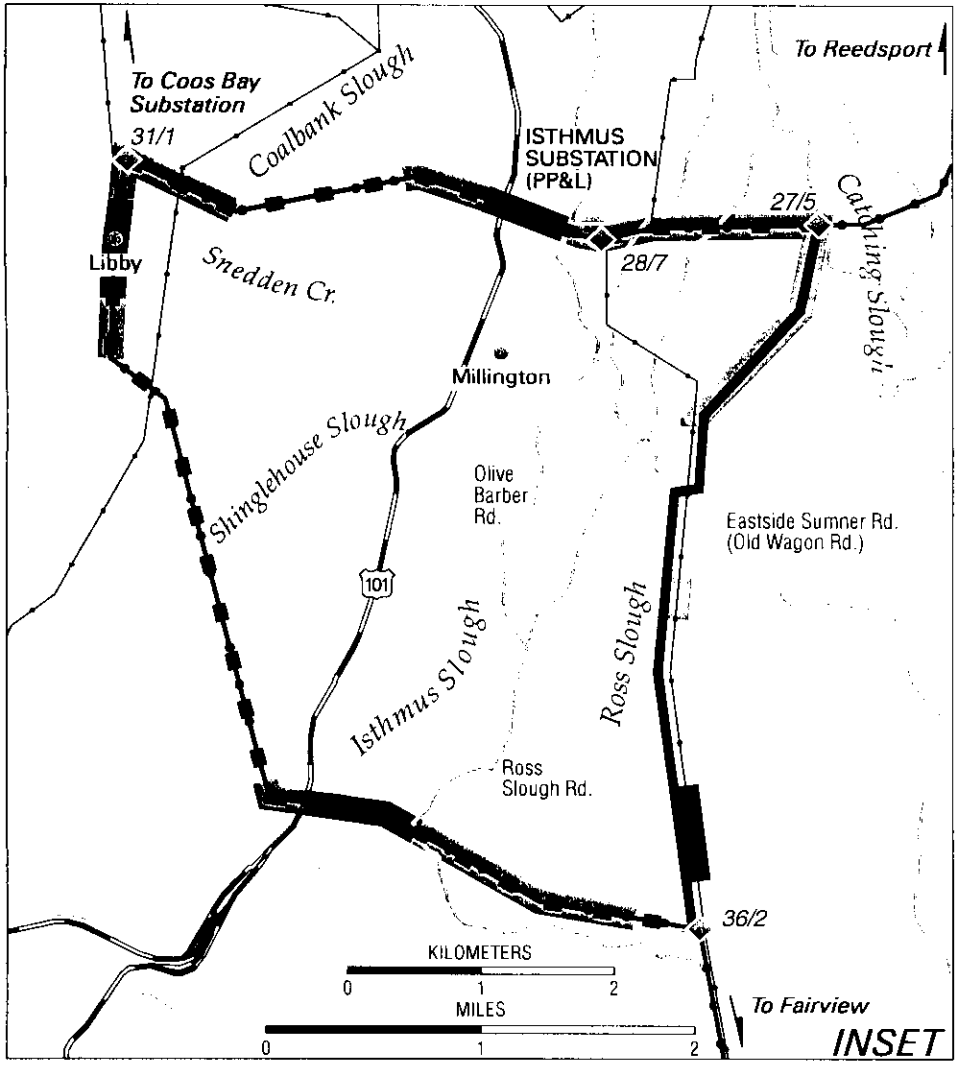
3.4.4 Potential Impacts of the No Action Alternative

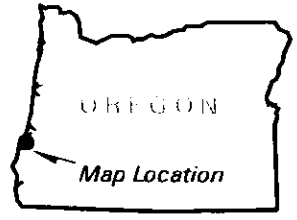
No visual impacts are expected to occur beyond those already incurred from the existing line.

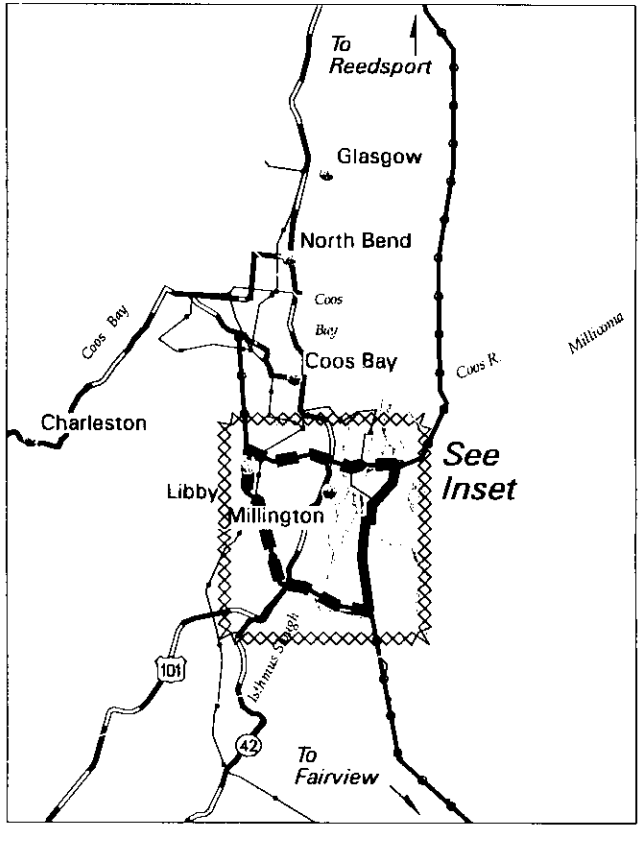
3.4.5 Cumulative Impacts

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet, and would also require new right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast

REEDSPORT–FAIRVIEW TRANSMISSION PROJECT VISUAL RESOURCES







BPA Transmission Line
PP&L Transmission Line
Road
Highway

Substation
Existing Structure Number
Proposed
Alternative

Visual Resource Classes
Class 2
Class 3
Class 4

BONNEVILLE POWER ADMINISTRATION
GIS
GEOGRAPHIC INFORMATION SYSTEM

N

Map 2

Map 2

Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities would likely consider constructing any necessary future transmission lines parallel to the existing lines. Expanding the right-of-way and adding another taller transmission line could increase visual impacts in the area to residential viewers.

3.4.6 Mitigation for the Proposed and Alternative Actions

Proposed Action – Visual impact mitigation is recommended, especially along the portion of new right-of-way to the northeast where a visual change would occur to existing residential/rural properties.

- In this area, minimize the height of new structures and the width of new right-of-way to minimize clearing and reduce visual impact.
- Use dark wood poles and non-specular conductors and dark colored insulators to help reduce visual contrast with existing visual resource qualities in the area.

Alternative Action –

- Careful location of the transmission line structures and use of dark colors would blend with the colors of the forested hills that are a backdrop for transmission line views.
- Consider a small route relocation around Libby (parallel to the PacifiCorp line). If this is impossible, use a single pole design (dark poles) with dark colored stand-off post insulators. This design is very simple and is more compatible with a residential area.

3.5 Recreation

3.5.1 Affected Environment

No developed recreation sites exist next to the existing and new right-of-way. Dispersed recreation, such as hiking, hunting, backpacking, and wildlife viewing and hunting are the types of recreation that might occur.

The Alternative Action crosses more intensively developed lands. Public exposure to the line is high at the crossings of Isthmus Slough and Highway 101, and in the portion of the line that passes through Libby. Vegetation has grown quite close to the line in many locations and danger trees would likely need to be removed. This would increase line visibility. Access road improvements would also disturb natural vegetation that has grown within the right-of-way. This alternative would alter the semi-natural quality that now exists along the line, and would resemble a new right-of-way when construction is complete.

While hikers, hunters, backpackers, or wildlife viewers may be more numerous along the right-of-way for the Proposed Action, since it is less intensively developed, no known developed recreational sites exist.

3.5.2 Potential Impacts of the Proposed Action

Building a new line parallel to the existing line would cause a slight negative modification of the viewshed for dispersed recreation activities that focus on natural resources and a natural setting. There would be little or no recreational impact.

The last mile of new line would create a new non-natural visual element to the viewsheds of recreational users. But, given that only dispersed recreational uses could occur in the area, recreational impacts for this portion of the Proposed Action would be low.

3.5.3 Potential Impacts of the Alternative Action

This alternative, considering the visual change that would result from right-of-way clearing and access road development, would have an overall low impact on dispersed recreation activities. The existing line visually impacts recreational viewers on Highway 101, boaters on Isthmus Slough, and residential properties in Libby. If the Proposed Action is chosen and this section of line is removed, a low, but positive, recreational impact would occur.

3.5.4 Potential Impacts of the No Action Alternative

No impacts to recreation are expected to occur beyond those already incurred from the existing line.

3.5.5 Cumulative Impacts

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet, and would also require new right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities would likely consider constructing any necessary future transmission lines parallel to the existing lines. Expanding the right-of-way and adding another taller transmission line could increase visual impacts in the area to recreational users. A larger right-of-way could also encourage access and recreational use where previously there was none.

3.5.6 Mitigation for the Proposed and Alternative Actions

- Dark-colored materials should be used for new or rebuilt transmission structures. Dark wood poles, steel cross-arms treated to appear weathered, and brown or black insulators would better match the background colors of this largely forested area. See also Section 3.4.6, Mitigation.

3.6 Soils and Geology

3.6.1 Affected Environment

The project is on the west side of the Coast Range located within the Pacific Border physiographic province. The project area is characterized by low hills with rounded ridgetops and moderate, uniform side slopes. Nearly level floodplains associated with estuarine sloughs separate the ridges. Elevations in the project vicinity range from near sea level, at Coalbank Slough and Isthmus Slough, to about 500 feet near the southern extent of the two alternatives. Bedrock is exposed on steeper slopes and consists of weakly consolidated and easily weathered sandstone and siltstone.

Soils on floodplains have developed in **alluvium** and are associated with sloughs and creeks. These soils can flood frequently, and the water table is often at or near the surface for much of the year. Soils on hillslopes have developed in place from material derived from sedimentary rocks.

3.6.2 Potential Impacts of the Proposed Action

Soils denuded of vegetation or disturbed by construction activities are more susceptible to erosion and **mass movement**. An increase in erosion can reduce soil productivity and degrade water quality. The amount of soil erosion caused by construction is a function of soil properties, slope, vegetation, rainfall patterns, and construction practices. The hazard of water erosion is low on the nearly level bottom lands. On slopes the erosion hazard is predominately moderate, but it can range to high on the steepest slopes in the surrounding hills (U. S. Department of Agriculture, Soil Conservation Service, 1989). Landslides can occur where new road construction undercuts unstable slopes or excessive fill is placed at the top of susceptible slopes. In addition, increases in the quantity of water that flows onto or infiltrates a susceptible slope can increase the landslide risk.

Impacts would be primarily related to disturbances associated with structure construction, conductor stringing operations, clearing, and road improvements. Impacts would include localized increases in erosion and runoff rates at construction sites. Heavy equipment could also compact soils, reducing soil productivity. Impacts would be highest during and immediately after construction until the disturbed sites are stabilized and revegetated. Revegetation would reduce runoff and erosion rates to near pre-construction levels. Localized changes in runoff and erosion patterns at structure sites or where access roads have been built or modified are possible long-term impacts.

No new access would be required for the Proposed Action where it parallels PacifiCorp's 230-kV transmission line. Impacts along this 2.6 mile section of line would be limited to surface disturbances around the new structures and from clearing of vegetation where needed. These activities would cause temporary localized increases in runoff and erosion. Impacts would be greatest where new right-of-way and access are required for 1 mile of line at the northern end of this alternative. Overall, this alternative would require approximately 44-68 acres of right-of-way clearing in addition to clearing for construction of new access roads. Removal of vegetation and road construction would cause localized increases in runoff and erosion. Soils are susceptible to compaction and rutting, and unsurfaced roads may be impassable when wet.

3.6.3 Potential Impacts of the Alternative Action

Selected clearing of danger trees, establishing access to structures, and removing existing encroachments would be needed along the right-of-way to accommodate the new line. Removal of the existing line and construction of the new line would cause ground disturbance and limited vegetation removal causing localized increases in runoff and erosion. These impacts would be low and would decrease in intensity with stabilization and restoration of disturbed sites.

3.6.4 Potential Impacts of No Action

No impacts to soils and geology are expected to occur beyond those already incurred from the existing line.

3.6.5 Cumulative Impacts

Although minor, localized increases in erosion, runoff, and sedimentation would be expected from construction and maintenance of a new line, these increases would have a low impact on the area's soil resources and water quality and would not impair any water body.

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet, and would also require new right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities would likely consider constructing any necessary future transmission lines parallel to the existing lines. Expanding the right-of-way and adding another transmission line could impact the soils and water quality of the area during construction and maintenance.

3.6.6 Mitigation for the Proposed and Alternative Actions

Minimizing disturbance and erosion is a concern at all transmission structure erection sites, construction staging areas, and where access roads would be modified or improved. By following best management practices, impacts would be reduced or eliminated at all sites. Best management practices include these mitigation measures:

- Proper design of road drainage systems and culvert placement helps to control runoff and erosion. An integrated system of collection, control, and dispersion of concentrated runoff would be installed to prevent erosion on fill slopes, road surfaces, and natural slopes below cross drains and culverts.
- Cuts and fills are susceptible to erosion and should be reseeded promptly following construction.
- Seeding, mulching, benching, and compacting the soil can reduce erosion on cuts and fills. To minimize erosion, disturbed areas should be returned to their original contour and promptly seeded with a herbaceous seed mixture suited to the site.
- Sediment barriers and other suitable erosion and runoff control devices would be installed where needed to minimize off-site movement of sediment.
- When practical, construction activities would be avoided when soil is wet to reduce soil compaction, rutting, and resulting loss in soil productivity.

Also see Section 3.10, Water Quality for related impacts and mitigation.

3.7 Vegetation

3.7.1 Affected Environment

The vegetation in the Pacific Northwest has been characterized on the basis of physiographic provinces and vegetation zones. According to this system of classification, the project area is located within the Pacific Border physiographic province and the *Picea sitchensis* (Sitka spruce) vegetation zone described by Franklin and Dyrness (Franklin and Dyrness, 1969). The *Picea sitchensis* zone is considered a variant of the *Tsuga heterophylla* (western hemlock) zone that is characterized by the occurrence of Sitka spruce, frequent summer fog, and proximity to the Pacific Ocean.

Vegetation in the upland hills is composed mainly of conifers such as Sitka spruce, Douglas fir, and western hemlock. Other species include western red cedar and red alder. Understory generally is comprised of elderberry, vine maple, huckleberry, thimbleberry, swordfern, brackenfern, blackberry, and salal. Scot's broom and gorse are prevalent in disturbed areas including along the transmission line right-of-way.

Valley bottoms in Coalbank and Isthmus Sloughs support mainly sedges, rushes, forbs, and grasses. Where altered by diking, filling, and agricultural activities, these valley bottoms are used for pasture and support grass species capable of enduring long

periods of inundation by water. Tidelands, where they are covered by average high tides and in surge channels, are frequently barren.

3.7.2 Potential Impacts of the Proposed Action

Construction, operation and maintenance of transmission facilities can directly affect vegetation resources. Short-term impacts can occur during construction and usually have minimal lasting impacts on vegetation. Other impacts are long term, such as ongoing maintenance practices that can permanently alter plant species composition and communities. Overstory would be removed for right-of-way clearing or to eliminate danger trees. Ground disturbance from construction and stringing operations can remove or damage existing vegetation and can cause invasion and spread of undesirable plant species, or adversely impact sensitive or protected plants. Vegetation management activities can also alter and influence the types of plants occurring within the right-of-way.

The Proposed Action would parallel existing right-of-way for 2.6 miles. The northernmost 1-mile would require new right-of-way. Where required, trees would be removed for line construction and to insure reliability and safety. Approximately 1.3 miles of this alternative have been recently clearcut (Jones and Stokes Associates, Inc., November 12, 1998). Right-of-way clearing would remove about 44-68 acres of conifers and alders. Development of new access would remove additional forest cover. Impacts would be low since most of the affected habitat is very common and much of the right-of-way has been recently clearcut.

Noxious Weeds and Other Undesirable Vegetation – Noxious weeds, which are formally designated at the county level by Noxious WeedControl Boards, and also at the federal level, typically include species that pose a major threat of spreading or interfering with agriculture or natural plant communities. Scot's broom and gorse are some of the most pervasive weed species in the project area, and commonly occur along existing rights-of-way in the project area. Several other species of noxious or undesirable vegetation also occur. Weeds can spread quickly along the linear length of a transmission line right-of-way and this is especially true for new right-of-way where weeds may not have been previously.

3.7.3 Potential Impacts of the Alternative Action

Impacts to vegetation would be primarily the result of selective clearing along the right-of-way and ground disturbance associated with line construction and access road upgrades. Since this alternative would use established right-of-way and access throughout much of its length, impacts to vegetation would be low. Maintenance-related impacts would be similar to those currently affecting the right-of-way. See also the discussion of Noxious Weeds and Other Undesirable Vegetation above.

3.7.4 Potential Impacts of the No Action Alternative

No impacts to vegetation are excepted to occur beyond those already incurred from the existing line.

3.7.5 Threatened and Endangered Species

A letter issued by the U.S. Fish and Wildlife Service, (January 19, 1999), indicated that the Western lily (*Lilium occidentale*), listed endangered, may occur in the project area. The Western lily is a perennial plant that grows up to 1.5 m (5 feet) tall and flowers from June through July. It has crimson red flowers with yellow and green at the base. The plant has an extremely restricted distribution within 2 miles of the coast, and is found on the periphery of sphagnum bogs and in forest or thicket openings along the margins of ephemeral ponds and small channels. It is also found in coastal prairie and scrub near the ocean from Coos to Humboldt counties. Urban development and plant collecting are considered the primary causes of the population decline of this species.

There are no areas of potential habitat for the Western lily along the right-of-way for the Proposed Action that BPA would impact during construction.

Along the Alternative Action route, an emergent/scrub-shrub wetland between structures 31/8 and 31/9 is hydrologically connected to Coalbank Slough. The transmission line would span this area and no construction activities would occur in or along the edge of the wetland, therefore no impacts would occur to the plant species if present. The area would be flagged for avoidance during construction.

3.7.6 Cumulative Impacts

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet, and would also require new right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities would likely consider constructing any necessary future transmission lines parallel to the existing lines. Expanding the right-of-way and adding another transmission line could impact the vegetation of the area during construction and maintenance. The plant community would be altered by clearing and construction and noxious weeds could invade the area. This could have a continuing impact to vegetation.

3.7.7 Mitigation for the Proposed and Alternative Actions

To minimize impacts, the following mitigation measures should be implemented.

- Minimize clearing and blading to the fullest extent possible.

- Restrict vehicles to access roads only.
- Immediately after construction, revegetate any areas where low-growing vegetation is severely damaged.
- To reduce noxious weed infestation, wash vehicles and all earth-moving equipment at established wash stations before entering and leaving project sites to avoid spreading noxious weeds.
- An emergent/scrub-shrub wetland between structures 31/8 and 31/9 would be flagged for avoidance during construction.

3.8 Wetlands

3.8.1 Affected Environment

Wetlands are areas of transition between aquatic and terrestrial systems, where water is the dominant factor determining the development of soil characteristics and associated biological communities. They are important communities that have declined over the years due to an increase in agriculture practices and urban development. Because of these losses, federal, state, and local laws protect wetlands. Jurisdictional wetlands, or wetlands that are regulated, are defined as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (U.S. Department of Army, 1987). Wetlands in the project area were identified using USFWS National Wetland Inventory Maps, transmission line maintenance videos, aerial photos, field study, and a report produced by Jones & Stokes Associates, Inc. for the Southern Oregon Coast Reinforcement Project.

Wetlands within the project area are varied and numerous and primarily associated with sloughs of the Coos Bay estuary. Over the years these estuary tidal wetlands have been altered by diking, filling and agricultural activities that have severely diminished their functions. The Proposed Action would cross and span a forested wetland associated with Ross Slough and composed primarily of red alder. The Alternative Action crosses 6 wetlands associated with Coalbank, Isthmus, and Ross sloughs. Most of these wetlands are spanned by the existing line except for a marsh adjacent to Coalbank Slough, which has an existing structure (31/6) just inside the wetland boundary, and the northernmost crossing of Isthmus Slough, which has a lattice steel structure (29/1) in the center of the slough. These wetland types are **palustrine emergent** and **estuarine** emergent respectively, and are predominately composed of rushes, sedges and grasses.

3.8.2 Potential Impacts of the Proposed Action

Along each alternative, the transmission line corridor would cross wetlands. Wetlands play a crucial role in the survival of many plants and animals within the wetlands, as well as those adjacent to it. Plant cover is important not only as a measure of

protection for animals, but also as a high-energy food source for grazers. Discharge, fill material, or clearing can adversely affect wetlands. Clearing can damage and destroy habitat, reducing the biological productivity of a wetland ecosystem. Discharge or fill can also degrade water quality and reduce or eliminate nutrient exchange.

Executive Order 11990 requires federal agencies to avoid development in wetlands wherever practicable and prepare an assessment of the impacts of the project alternatives on floodplains and wetlands. (See Section 4.5.1.) The following discussion fulfills the requirements of the Order.

The Proposed Action would span one forested wetland located south of Eastside Sumner Road in Section 7, Township 26S, Range 12W. Although spanned, 100 feet of additional right-of-way could require that some red alders need to be removed in the wetland to avoid presenting a hazard to the new line by growing or falling into it. Indirect impacts to wetlands could occur from clearing, including a reduction in water quality, sedimentation, invasion of noxious weeds or changes in wetland hydrology due to soil excavation. Rerouting the line to avoid any possible disturbance in the wetland is not practicable since this would increase costs.

Since no wetlands occur in the last mile of new right-of-way, no impacts would occur to wetlands from access road or structure construction.

3.8.3 Potential Impacts of the Alternative Action

There are more wetlands located along the right-of-way for the Alternative Action than the Proposed Action though most would be spanned. Currently, only two structures are located in wetlands. One structure, 3/16, could be removed by cutting and leaving the poles in place until summer when the ground is dry and vehicle traffic would not cause rutting. The new pole should be relocated outside of the wetland to avoid further impacts. The other structure, 29/1, is located in Isthmus Slough and would remain in place thus avoiding impacts to the wetland.

Because the existing right-of-way varies in width, additional clearing and access road construction could be needed. Clearing should not impact any wetland vegetation because most of the wetlands are composed of low-growing plant species. Overall impacts to wetlands would be low.

3.8.4 Potential Impacts of the No Action Alternative

Because this alternative would not require any construction, clearing, or new access, no impacts to wetland resources would occur beyond those already incurred from the existing line.

3.8.5 Cumulative Impacts

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet, and would also require new

right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities would likely consider constructing any necessary future transmission lines parallel to the existing lines. Expanding the right-of-way and adding another taller transmission line could increase wetland impacts to the forested wetland described above.

3.8.6 Mitigation for the Proposed and Alternative Actions

The following mitigation could apply to either alternative where applicable:

- Locate structures and spur roads in upland.
- The new structure that would replace structure 3/16 in the Alternative Action should be located outside of the wetland.
- Alders that may need to be cut down in a forested wetland (Proposed Action) could be left on the ground for wildlife habitat as long as they did not impede the flow of water in the wetland.
- Use erosion control devices when constructing in areas adjacent to or uphill from a wetland to ensure soil is not washed downhill during storm events.
- Disturbed areas should be reseeded promptly upon completion of construction.
- Clearing should be kept to a minimum in or near wetlands.
- Limit disturbance to the minimum necessary when working in and immediately adjacent to wetlands.
- Locate staging areas outside of wetlands.
- Delineate wetlands before final design and flag for avoidance during construction.
- If excavation occurs in a wetland, stockpile wetland topsoil and redeposit soil in place for restoration following construction.

3.9 Floodplains

3.9.1 Affected Environment

According to the Federal Emergency Management Agency (FEMA) flood hazard maps, the Proposed Action would cross the 100-year floodplain of Ross Slough and the Alternative Action would cross the 100-year floodplains of Isthmus and Coalbank Sloughs. A 100-year flood is one that has a one-percent chance of happening in any given year.

3.9.2 Potential Impacts of the Proposed Action

Disturbance within a floodplain can have potential adverse effects not only near the disturbance but also in the stream channel and floodplain great distances downstream. Adverse impacts include the potential for flood damage to structures placed within the floodplain and increased flooding due to displacement of water from the normal floodplain by construction activities. Impacts can also occur when resources are degraded (i.e., vegetation is removed and soils are compacted) enough to lessen the ability of the floodplain to store excess water, which increases the chance that flooding can occur. They also can increase the potential for erosion near construction sites. Under Executive Order 11988, Floodplain Management, federal agencies must avoid adverse impacts whenever there is a practical alternative, or minimize impacts where there are no practical alternatives.

The Ross Slough floodplain would be spanned, avoiding impacts from the Proposed Action. No construction activities, including new or improved access roads, would occur in the floodplain. Floodplain characteristics would not be altered, nor would the potential be greater for loss of property or life during flooding, either within or downstream from the project.

3.9.3 Potential Impacts of the Alternative Action

The Alternative Action would cross the 100-year floodplain of Isthmus Slough twice. An existing lattice steel structure (29/1), located in an estuarine marsh at the northernmost crossing of Isthmus Slough, is within the floodplain boundary. However, this structure would remain in place and would be used to carry the new conductor. The structures at the southernmost crossing of Isthmus Slough are outside the floodplain boundary. Therefore, there would be no impacts to the Isthmus Slough floodplain at either crossing.

The Alternative Action would cross the contiguous 100-year floodplains of Coalbank Slough and Snedden Creek twice. At the northernmost crossing, a structure (30/6) is located on an elevated road about 5-6 feet above the floodplain but within the floodplain boundary. At the southernmost crossing, two structures (31/14 and 31/15) are located within the 100-year floodplain boundary and are on elevated fill adjacent to roads bordering a pasture. Temporary impacts would occur to the floodplains when the structures are removed and replaced. A temporary spur road might be needed to install the new structures. Minor short-term disturbances could occur to surrounding soils and vegetation if spur roads are needed.

3.9.4 Potential Impacts of No Action

No impacts to floodplains are expected to occur beyond those already incurred from the existing line.

3.9.5 Cumulative Impacts

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet, and would also require new right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities would likely consider constructing any necessary future transmission lines parallel to the existing lines. Expanding the right-of-way and adding another transmission line could increase impacts to floodplains if a new line did not span Ross Slough.

3.9.6 Mitigation for the Proposed and Alternative Actions

- To mitigate impacts to floodplains, structures and spur roads should be located outside the floodplain where possible.
- All construction or clearing debris should be removed from within floodplain boundaries, and poles within the 100-year floodplain should be designed to withstand floodwaters and pressure from accumulated debris.

3.10 Water Quality

3.10.1 Affected Environment

The area climate is tempered by winds from the Pacific Ocean. Summers are relatively warm but hot days are rare; winters are cool, but freezing temperatures and snow are infrequent at lower elevations. The average annual precipitation at North Bend, Oregon is about 61 inches; about 80 percent falls from October through March (U. S. Department of Agriculture, Soil Conservation Service, 1989). Small perennial and intermittent streams drain most of the area into estuarine sloughs leading into Coos Bay.

Section 303(d) of the Federal Clean Water Act requires each state to develop a list of water bodies that do not meet established water quality standards. In Oregon, the Department of Environmental Quality (DEQ) is responsible for developing the standards that protect beneficial uses such as drinking water, fisheries, and recreation. Once a stream is placed on the 303(d) list, the Clean Water Act requires that the state develop a plan to reduce pollution. Parameters that DEQ typically monitors include bacteria, pH, dissolved oxygen, temperature, total dissolved gas, certain toxic and carcinogenic compounds, habitat and flow modification, and aquatic weeds or algae that affect aquatic life. Coalbank Slough and Isthmus Slough are listed as "water quality limited" on the 1998 303(d) list. The dissolved oxygen standard is exceeded in Coalbank Slough, and the fecal coliform criteria for a marine and shellfish-growing area is surpassed in Isthmus Slough. Construction activities would not make these conditions worse.

Although groundwater wells supply drinking water to some residents in the area, no Environmental Protection Agency designated or proposed sole source aquifers exist in the area. Drinking water is also supplied to landowners by small creeks, ponds, and springs in the area. These sources would not be affected by the project.

3.10.2 Potential Impacts of the Proposed Action

Impacts would be associated primarily with ground disturbance from the construction of transmission structures, road improvements, and stringing operations. Vegetation removal and soil disturbance increases erosion, runoff, and the risk of sediment reaching surface waters. Access roads are susceptible to rutting when wet, and can channel runoff and sediment into streams. The likelihood and intensity of surface water impacts depend on the amount of disturbance, slope, vegetation cover, soil characteristics, time of season, and susceptibility of disturbed areas to erosion. Sediment affects water clarity, plant and fish habitat, and water temperature and chemistry.

Overall impacts would be low and limited to localized increases in erosion and runoff. The intensity of impacts would diminish after the site is restored and erosion and runoff control measures take effect. The new line would span a small stream, located in the headwaters of the Ross Slough drainage about 0.25 miles north of structure 36/2. This drainage has been logged recently and impacts related to line construction would be low. Having an established corridor and access road system along much of this right-of-way greatly reduces impacts. Construction of spur roads for new structures and clearing would cause localized increases in runoff and erosion.

Groundwater is not likely to be affected by this project. Activities associated with the construction of transmission structures would not directly introduce nor facilitate the introduction of contaminates into wells or aquifers. This project would be designed to comply with local ordinances and laws, and state water quality programs so as not to degrade the quality of aquifers nor jeopardize their usability as a drinking water source. The project would not affect the chemical or biological characteristics of surface or groundwaters in the area.

3.10.3 Potential Impacts of the Alternative Action

The Alternative Action crosses several surface water bodies. Between existing structures 32/6 and 33/1, the new line would cross three intermittent streams in the headwaters of the Shinglehouse Slough drainage. Access roads and sufficient right-of-way exist in this area so impacts to surface waters would be minimal. This alternative crosses Isthmus Slough in two different locations between existing structures 28/8-29/2 and 34/2-34/3. Only steel lattice structure 29/1 is located in the slough and would not be replaced. Between structures 34/2-34/3 the slough is spanned completely. Line construction would not impact the water quality of the slough at either location. The existing line spans Coalbank Slough. Structure 30/6 was recently relocated from the tidal flats of Coalbank Slough to the fill comprising the roadbed. If this structure is removed and replaced, sediment controls could be required to prevent sediment from entering the

slough. Between existing structures 30/5-31/16, tributaries to Coalbank Slough, including Snedden Creek, are spanned and water quality would not be impacted. The line would completely span Ross Slough between existing structures 28/2 and 28/3 and would avoid any impacts to the small creek draining the slough.

3.10.4 Potential Impacts of the No Action Alternative

No impacts to water quality are expected to occur beyond those already incurred from the existing line.

3.10.5 Cumulative Impacts

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet, and would also require new right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities would likely consider constructing any necessary future transmission lines parallel to the existing lines. Expanding the right-of-way and adding another transmission line could impact the soils and water quality of the area during construction and maintenance.

3.10.6 Mitigation for the Proposed and Alternative Actions

Because of the interrelationship between soil erosion and surface water quality, successful implementation of runoff and erosion controls is important in protecting water quality. Standard mitigation would implement the measures best suited to each individual location to eliminate or reduce erosion and runoff and stabilize disturbed areas. A number of measures would be used alone or in combination and include but are not limited to:

- Use BPA standard erosion practices along with other measures determined necessary to eliminate or minimize water quality impacts.
- Use sediment barriers such as straw bales or silt fences where needed to prevent off-site movement of sediment.
- Seed disturbed areas immediately after construction with a seed mixture suited to the site. Areas include sites disturbed during construction of transmission structures, and areas where construction activities have affected vegetation next to streams or wetlands.
- Limit traffic across wet soils susceptible to rutting.
- Cross streams at existing crossings.

- Design and install culverts or other structures at stream crossings so that there is unobstructed stream flow and minimal change to the streamcourse.
- Time construction activities to reduce erosion by conducting operations during minimal runoff periods, if practical.
- If roads must be used during wet periods, install a stable surface and sufficient drainage to allow such use with a minimum impact. Gravel may be necessary to protect some road surfaces and reduce erosion potential.
- Use clean gravel for access road improvements near water bodies or wetlands.
- Repair any stream bank damage and stabilize the site immediately following construction.

No solid materials, including building materials, would be discharged into waters of the United States unless authorized by a Section 404 permit of the Clean Water Act.

3.11 Fish and Wildlife

3.11.1 Affected Environment

The proposed project crosses several different types of habitat: second growth conifers such as Sitka spruce, Douglas fir, western red cedar, and western hemlock mixed with deciduous trees such as red alder; shrub-grass communities; mixed brush such as blackberry, elderberry, vine maple, swordfern and salal; large expanses of Scot's broom and gorse; open sand and gravel areas; some small agricultural fields; and rural residential areas.

Many species of birds, fish, and mammals are found in the various habitat types in the area, including salmon, trout, deer, small mammals, waterfowl, various raptors such as hawks, and other bird species. None of the habitats are unique and all are widely distributed in western Oregon. The wetland habitats provide important habitat for the wildlife they support.

3.11.2 Potential Impacts of the Proposed Action

On upland sites there will be both short- and long-term impacts to the habitats and the wildlife that depend on them. Short-term impacts would be caused by noise and construction activities along the line. Noise and construction activities may cause some species of birds and larger mammals to move out of the area until the disturbance is over. Impacts would be low.

The proposed line would span an intermittent stream that drains to Ross Slough and eventually into Coos Bay. The stream has no classic riparian areas (alders and willows), only grass and blackberry banks, and the drainage has recently been logged. Although the proposed new line would cross this stream, vegetation would not be removed, and the structures themselves would not be in the floodplain of the stream. No new access roads

would be constructed in the floodplain. As no cover would be removed and no new roads constructed in this area, sediment would not be introduced into the stream and no impacts would occur to fish or wildlife in the stream or surrounding habitat.

The clearing of taller growing vegetation and removal of all vegetation from any new access roads that may be required would cause long-term impacts. Though clearing of vegetation would be necessary in some areas, many places that contain low growing species would be untouched. About 44-68 acres of tall-growing trees and shrubs would be cleared for the line. Though clearing would displace species found in those habitats, a new group of species would use the lower-growing habitat type. Second growth conifers and mixed hardwoods are found throughout western Oregon; the limited amount removed and converted would create low impacts to wildlife species.

3.11.3 Potential Impacts of the Alternative Action

For this alternative, the existing wood pole H-frame structures would be replaced with new wood pole H-frame structures (steel poles in one area) and would not require any vegetation removal. In areas where BPA may need to do selective clearing for the upgraded line and access road upgrades, some vegetation and trees would be removed. If new permanent access roads were needed in wildlife habitat, the acreage removed would no longer be useful to wildlife except for travel.

The upgraded line crosses several bodies of water twice, including Isthmus Slough, Coalbank Slough and Snedden Creek. Coho salmon and steelhead use Isthmus and Coalbank sloughs. These species are not found in Snedden Creek. An existing steel lattice structure (29/1), located in an estuarine marsh at the northernmost crossing of Isthmus Slough, would remain in place and would be used to carry the new conductor. Isthmus Slough, at the southernmost crossing, would be spanned completely, creating no impacts for fish at either crossing. The existing line spans Coalbank Slough. Structure 30/6 was recently relocated from the tidal flats of Coalbank Slough to the fill used to create the roadbed. If this structure is removed and replaced, construction could cause increased turbidity and sedimentation in the slough and create minimal short-term impacts to fish. Between structures 30/5 and 31/16, tributaries to Coalbank Slough, including Snedden Creek, are spanned and no sediment transport that would impact fish would be expected. The upgraded line would span Ross Slough between structures 28/2 and 28/3, avoiding impacts to fish.

3.11.4 Potential Impacts of the No Action Alternative

Because no trees would be cut and no wildlife habitat would be lost, no impact to fish and wildlife are expected to occur beyond those already incurred from the existing line.

3.11.5 Threatened and Endangered Species and Critical Habitat

The U.S. Fish and Wildlife Service identified federally-listed and candidate species that may occur in the project area (U.S. Fish and Wildlife Service, January 19, 1999). See Table 3.

Table 3-Threatened and Endangered Species

Species	Status	Habitat Association
Bald eagle *(Haliaeetus leucocephalus)*	T	Associated with the coast, rivers, lakes, and marshes. Nests in dominant trees and on cliffs.
Peregrine falcon *(Falco peregrinus)*	E	Associated with wetlands or other bodies of water where shorebirds or ducks are their main source of prey. Suitable nest sites, usually cliffs, are the critical habitat factor for peregrine.
Western snowy plover *(Charadrius alexandrinus)*	T	A shorebird that occurs year-round along the coast. It nests on sand spits near river outlets and on level sandy beaches.
Marbled murrelet *(Brachyramphus marmoratus)*	T	Nests in older mixed conifer forests, or younger forests with adequate nest structures. Typically depresses moss or conifer needles on thick limbs or mistletoe brooms for nesting.
Northern spotted owl *(Strix occidentalis)*	T	Breeds in late-successional coniferous forests, usually dominated by Douglas fir. It prefers large continuous stands with closed canopies. Nests are in the hollows of trees or on large limbs.
Brown pelican *(Pelecanus occidentalis)*	E	A coastal breeder south of Oregon. Can be common farther north during summer.
Aleutian Canada Goose (*Branta canadensis leucopareia*)	T	Nests on treeless islands in areas densely vegetated by grasses, sedges, and ferns, often where there is no source of fresh water.
Coho salmon (Oregon Coast) (*Oncorhynchus kisutch*)	T	Coastal streams between Cape Blanco and the Columbia River. Juveniles spend one winter and one summer in fresh water.
Sea-run cutthroat trout (*Oncorhynchus clarki clarki*)	CF	Northern California to Alaska. Spend time in tidal rivers and low-gradient estuarine sloughs and tributaries during spawning and feeding migrations.
Steelhead (Oregon Coast) (*Oncorhynchus mykiss*)	CF	Coastal streams between Cape Blanco and the Columbia River.

Notes: T = Federally threatened; E = Federally endangered; CF = Candidate Species

Sources: U.S. Fish and Wildlife Service, January 19, 1999; Jones and Stokes Associates, Inc., November 12, 1998

Based on a review of aerial photographs, aerial video, topographic maps, site visits and a review of the latest federal threatened and endangered species lists as well as those species' habitat requirements, it is BPA's opinion that the Proposed Action and Alternative Action would not affect the bald eagle, peregrine falcon, western snowy plover, marbled murrelet, brown pelican, Aleutian Canada goose or the northern spotted owl. These alternatives are not in an area proposed as critical habitat for these species, nor is the project area typically associated with any of these species or their prey.

Bald Eagle - No known bald eagle nests, roosting sites, territories, nor critical habitat units would be affected because none are present in the project area. The nearest documented bald eagle nest is more than one mile away from the Proposed and Alternative Actions.

Marbled Murrelets - No known occupied marbled murrelet sites, territories or critical habitat units would be impacted because there are none in the project area.

Northern Spotted Owl - No northern spotted owl nests, territories, nor critical habitat units would be affected because none are present in the project area.

Western Snowy Plover - The closest nesting area for this threatened species is the North Spit of Coos Bay (U.S. Department of Interior, Bureau of Land Management, 1994). Because they inhabit the sandy beaches and dunes of the immediate coast, this species is assumed absent from the project area.

Aleutian Canada Goose – These birds may feed in flood-irrigated pastures composed primarily of grasses and clover, harvested corn fields, and planted newly emerging growths of winter wheat, oats, and barley. However, nesting sites occur primarily on Canadian Islands and are assumed absent from the project area.

Brown Pelican – Although the brown pelican may forage in and around coastal bays during the summer, they rarely come inland. They are unlikely breeders north of California. Breeding sites are assumed absent from the project area.

Peregrine Falcon – No known peregrine falcon nests or territories would be impacted because none are in the project area.

A Biological Assessment was prepared to evaluate the potential to adversely affect the coho salmon, cutthroat trout, and steelhead. This biological assessment was sent to NMFS for concurrence with BPA's determination of effect on listed and candidate species. Based on a review of habitat requirements and use and a review of the latest federal threatened and endangered species lists, it is BPA's opinion that the Proposed Action may affect but is not likely to adversely affect coho salmon. Concurrence with this determination was received from NMFS on April 22, 1999.

Coho Salmon – Coho salmon do not use the intermittent stream that the transmission line would span. Coho salmon do use Ross Slough at a point over 1 mile downstream of this area. No construction work will be done in Ross Slough or on the banks or floodplain of Ross Slough. Though there is a low potential that the waters of Ross Slough may become more turbid from construction, BPA will use best management

practices and other measures to reduce the potential for erosion and sedimentation in Ross Slough.

Sea-run Cutthroat Trout – Sea-run cutthroat trout do not use the intermittent stream that the transmission line would span. They do use Ross Slough. No construction work will be done in Ross Slough or on the banks or floodplain of Ross Slough. Though there is a low potential that the waters of Ross Slough may become more turbid from construction, BPA will use best management practices and other measures to reduce the potential for erosion and sedimentation in Ross Slough.

Steelhead – Steelhead do not use the intermittent stream the transmission line would span. Steelhead do use Ross Slough at a point over 1 mile downstream of this area. No construction work will be done in Ross Slough or on the banks or floodplain of Ross Slough. Though there is a low potential that the waters of Ross Slough may become more turbid from construction, BPA will use best management practices and other measures to reduce the potential for erosion and sedimentation in Ross Slough.

3.11.6 Cumulative Impacts

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet, and would also require new right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities would likely consider constructing any necessary future transmission lines parallel to the existing lines. Expanding the right-of-way and adding another transmission line could impact fish and wildlife habitats.

3.11.7 Mitigation for the Proposed and Alternative Actions

- Sediment controls should be used to prevent sediment from moving into the Coalbank Slough if structure 30/6 is replaced.

3.12 Cultural Resources

3.12.1 Affected Environment

Evidence of prehistoric people in southwestern Oregon extends back to the Paleoindian Period prior to 8000 B.P. (before present) (Aikens 1993; Beckham et al. 1981; White et al. 1994). Groups in the study area and vicinity at the time of European contact included Penutian language speakers, the Siuslaw, the Lower Umpqua (or Kalawatset), the Yoncalla, and the Coos (Hanis and Miluk), as well as Athapaskan speakers, the Upper Coquille and the Upper Umpqua. All of these groups followed a

seasonal round pattern of subsistence pursuing available food and materials during the warmer months and returning to winter villages during the colder months. European contact began as early as the late 18th century. First came the Hudson's Bay Company fur trappers, then the U.S. military. Settlers, including miners, began arriving in the second half of the nineteenth century. Commercial fishing, logging, stock raising, mining, and agricultural activities became the mainstay of the regional economy. Though early historic sites and other cultural resources are most likely lost, later resources including historic roads and trails, structures, and early logging-related features exist in the area (Archeological and Historical Services, Eastern Washington University, October 1998).

A cultural resources survey of the Proposed and Alternative Action was completed in January 1999. No confirmed cultural resource sites were located during the survey. Two areas with a high potential for cultural resources were identified (Heritage Research Associates, Inc., February 1, 1999). One area is immediately west of Olive Barber Road, west of Isthmus Substation. The second area is near the east end of Coos City Bridge where the transmission line crosses Isthmus Slough.

3.12.2 Potential Impacts of the Proposed Action

Some portions of the new right-of-way were not surveyed due to landowner denial to enter property. Of the portions that were surveyed, no cultural resources were observed. Also, a background literature search did not identify any previously recorded prehistoric and historic sites within the vicinity of the right-of-way. Cultural resources may be present in the unsurveyed sections of the new right-of-way. These sections would be surveyed after BPA was able to obtain landowners' permission to enter property.

Based on existing evidence, BPA has made a determination that the Proposed Action would not affect archaeological or historic resources. The Oregon State Historical Preservation Officer (SHPO) has concurred with this determination.

3.12.3 Potential Impacts of the Alternative Action

The two areas identified as having a potential for cultural resources are at the crossings of Isthmus Slough. BPA would avoid disturbing these areas wherever possible. Changing placement of structure locations and access roads (requiring archaeological survey of alternate locations) can result in avoidance of significant resources. Should avoidance prove impossible, further fieldwork including test excavation would be done to determine if any evidence of prehistoric or historic occupation is present. A plan would then be developed to mitigate impacts to significant sites (i.e., sites potentially eligible to the NRHP, in compliance with Section 106 of the National Historic Preservation Act). This plan would be developed by BPA and reviewed by the Oregon SHPO and the Advisory Council on Historic Preservation once the effect on the resources of project-related activities is determined.

3.12.4 Potential Impacts of the No Action Alternative

If a new transmission line were not constructed, no new disturbance of potential cultural resources would occur.

3.12.5 Cumulative Impacts

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet, and would also require new right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities would likely consider constructing any necessary future transmission lines parallel to the existing lines. Expanding the right-of-way and adding another transmission line could impact any cultural resources in the area during construction and maintenance. Additional surveys would be conducted to determine if cultural resources exist along any new right-of-way.

3.12.6 Mitigation for the Proposed and Alternative Actions

In the unlikely event that cultural resources are uncovered during construction, work in the immediate vicinity of the project would be halted, and BPA would consult with the Oregon State Historic Preservation Officer and a qualified archeologist.

3.13 Public Health and Safety

3.13.1 Safety Precautions

Power lines, like electrical wiring, can cause serious electric shocks if certain precautions are not taken. These precautions include building the lines to minimize the shock hazard. All BPA lines are designed and constructed in accordance with the National Electrical Safety Code (NESC). NESC specifies the minimum allowable distances between the lines and the ground or other objects. These requirements basically determine the edge of the right-of-way and the height of the line, i.e., the closest point that houses, other buildings, and vehicles are allowed to the line, to limit electric field effects to acceptable levels.

People must also take certain precautions when working or playing near power lines. It is extremely important that a person not bring anything, such as a TV antenna or irrigation pipe, too close to the lines. BPA provides a free booklet that describes safety precautions for people who live or work near transmission lines entitled *Living and Working Around High Voltage Power Lines.*

Power lines can also induce voltage into objects near the lines. This effect can lead to nuisance shock if a voltage is induced on something like wire fencing that is on wood posts and, therefore, insulated from ground. Usually, this becomes a problem only with lines of voltages above 230-kV; it is extremely unlikely to occur from this project. Should problems develop with either high- or low-voltage lines, they can be corrected by simple grounding techniques.

3.13.2 Electric and Magnetic Fields

Everything electrical, including power lines, household wiring and appliances, produce electric and magnetic fields (EMF). Movement of electrons in a wire (current) produces magnetic fields and electrical pressure (voltage) produces electric fields. Both fields are reduced in strength with increasing distance.

General Exposure –

Electric Fields – Average domestic electric fields are highly variable and typically range from 0.005 kilovolt per meter (kV/m) to 0.02 kV/m (Bracken, 1998). Electric fields near household appliances are usually less than 0.1 kV/m at 30 cm (1 ft.)(U. S. Department of Energy, 1995). Electric fields at the edge of a typical 115-kV right-of-way are 0.5 kV/m (U. S. Department of Energy, 1995). Though electric fields are stronger near power lines than in typical residential settings, they are easily weakened by vehicles, trees and buildings.

Magnetic Fields - Magnetic fields from power lines fluctuate with changing loads; the greater the load, the greater the EMF. Transmission line magnetic field strength also depends on the number of lines, line design and line configuration (relative phasing of the conductors). A typical 115-kV line can be associated with a 6.5 milligauss (mG) magnetic field at the edge of the right-of-way (U. S. Department of Energy, 1995). (See Table 4 for typical electric and magnetic field strengths for some BPA transmission lines.)

Magnetic fields close to appliances are often stronger than those beneath power lines; however, appliance-generated fields drop off much more rapidly than those from power lines. Researchers recently completed a large study of daily personal EMF exposure in the U.S. (Zaffanella and Kalton, 1998) that concluded that the average 24-hour EMF exposure for the randomly-selected participants was 1.24 mG.

3.13.3 Regulations

There are no national standards for low level electric or magnetic fields, however six states have established electric field standards for transmission lines. Only New York and Florida have established magnetic field standards. Oregon is one of the states with an electric field standard (9 kV/m within the right-of-way). BPA has also set a maximum allowable electric field of 5 kV/m at the edge of its rights-of way and at road crossings. Additionally, BPA has set maximum allowable electric field strengths of 3.5 kV/m and 2.5 kV/m at shopping center parking lots and commercial/industrial lots, respectively.

These levels are set to eliminate nuisance shocks. The Proposed Action and the Alternative Action would meet both Oregon's and BPA's electric field standards.

Table 4-Typical Electric and Magnetic Field Strengths from BPA Transmission Lines

Transmission Lines	Electric Fields (kV/m)	Magnetic Field (mG)	
		Maximum[3]	Average[4]
115-kV			
Maximum on right-of-way	1.0	62.7	27.9
Edge of right-of-way	0.5	13.5	6.5
61 m (200 ft.) from center	0.01	0.9	0.4
230-kV			
Maximum on right-of-way	2.0	118	58
Edge of right-of-way	1.5	40	20
61 m (200 ft.) from center	0.05	4	2
500-kV			
Maximum on right-of-way	7.0	183	87
Edge of right-of-way	3.0	62	30
61 m (200 ft.) from center	0.3	7	3

1. kV/m=kilovolt per meter
2. mG=milligauss
3. Under annual peak load conditions (occur less than 1 percent of the time)
4. Under annual average loading conditions

Note: Information on magnetic fields obtained from BPA study to characterize nearly 400 transmission lines in the Pacific Northwest.

3.13.4 Health Effects

Electric Fields – Alternating current electric fields such as those emitted from power lines can create induced electric currents in people, however these effects are typically associated with high voltage lines (230-kV or higher) and are generally considered a nuisance. Electric fields are not associated with cancer. Induced current is extremely unlikely to occur at the edge of this project's right-of-way.

Magnetic Fields – Many studies have been conducted over the last 30 years in an effort to determine whether EMF is a carcinogen or has other detrimental effects on health. Recently, two different groups of scientists reviewed all existing EMF research to determine what conclusions, if any, could be drawn about EMF and human health. The National Academy of Sciences (NAS) reviewed EMF research completed by 1995 for the National Research Council (NRC); and the National Institute of Environmental Health Sciences (NIEHS) reviewed EMF research completed by 1998 as part of the Department of Energy Research and Public Information Dissemination Program.

- The NAS committee concluded that: "The data at different biological complexities taken in total do not provide convincing evidence that electric and magnetic fields experienced in residential environments are carcinogenic." (NRC 1997). The committee also identified weakness in the research and suggested that more research is needed.
- The NIEHS working group concluded that EMF was a "possible carcinogen," which means that they considered there to be "limited or inadequate evidence for carcinogenicity." (NIEHS, 1998).

Though these statements appear contradictory, both groups reached similar conclusions: the NAS concluded that the probability was less than one that EMF exposure represents a health hazard, and the NIEHS working group concluded that the probability is greater than zero. Neither panel excluded the possibility that EMF exposure could represent a public health risk.

Magnetic Field Analysis and Exposure Assessments for the Proposed Action, Alternative Action, and the No Action Alternative – Because the state of the scientific evidence relating to EMF has not yet established a cause-and-effect relationship between electric or magnetic fields and adverse health effects, BPA is unable to predict specific health risks, or specific potential level of disease, related to exposure to EMF. BPA is, however, able to conduct *exposure assessments* of magnetic fields from transmission lines. Exposure assessments are estimates of the field levels to which people are potentially exposed.

An EMF exposure assessment is done by first estimating what future EMF levels would be without the new project. This analysis serves as a baseline measurement. Engineers then estimate the possible change in field levels assuming the proposed project is in place. An increase in public exposure is defined as a situation where field levels with the new project will increase and buildings exist nearby.

Figures 2 through 5 show the magnetic field levels with and without the proposed project. Figures 2 and 3 show the Proposed Action. Figures 4 and 5 show the Alternative Action. All calculations were based on estimated annual peak loading (electricity usage) for the year 2002. Average loads would result in about half the EMF as peak estimates predict.

Figure 2 shows that EMF would increase west of the existing 230-kV line under the Proposed Action. This increase is due to the construction of the new line (wood pole H-frame) west of the existing PacifiCorp lines. BPA took this potential increase into account when BPA proposed to widen the existing right-of-way. Peak EMF resulting

from this alternative is estimated to be 2 mG at the edge of the new, expanded right-of-way. Peak EMF levels would actually be lower at the edge of the new right-of-way than they were at the edge of the old right-of-way.

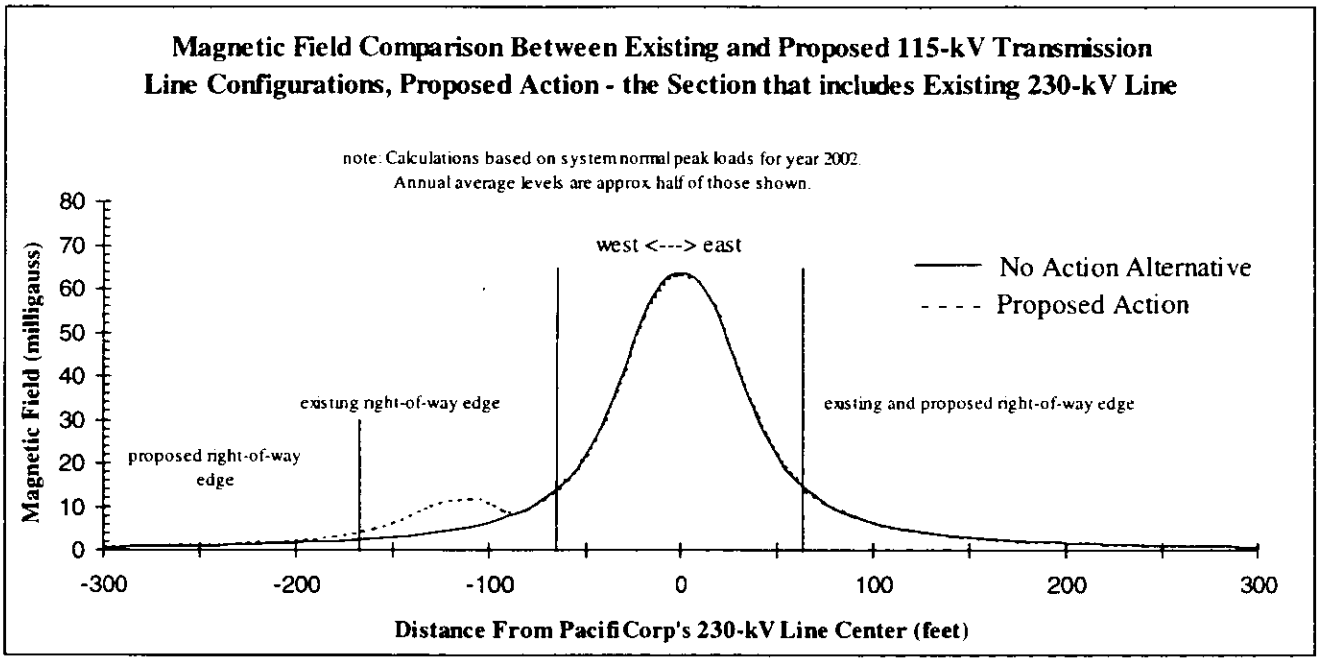


Figure 2-Proposed Action

Figure 3 shows that under peak loads, EMF from the new section of right-of-way is 2.5 mG (edge of right-of-way). This is less than half the average for 115-kV lines. See Table 4.

Figure 4 is a plot of magnetic fields for the one-mile section near the Libby area. These fields are lower relative to other areas because of the way the conductors are placed on the structure in what is known as a wishbone or delta design. The Alternative Action would increase EMF levels by less than 1 mG on the west side of the line in the one-mile section near Libby. The estimated peak EMF level for this section of line (after rebuild) at the edge of the right-of-way is 3.5 mG. This level is less than half the average level for 115-kV lines (see Table 4).

Magnetic Field Comparison Between Existing and Proposed 115-kV Transmission Line Configurations, Proposed Action - the Section where No Lines Currently Exist

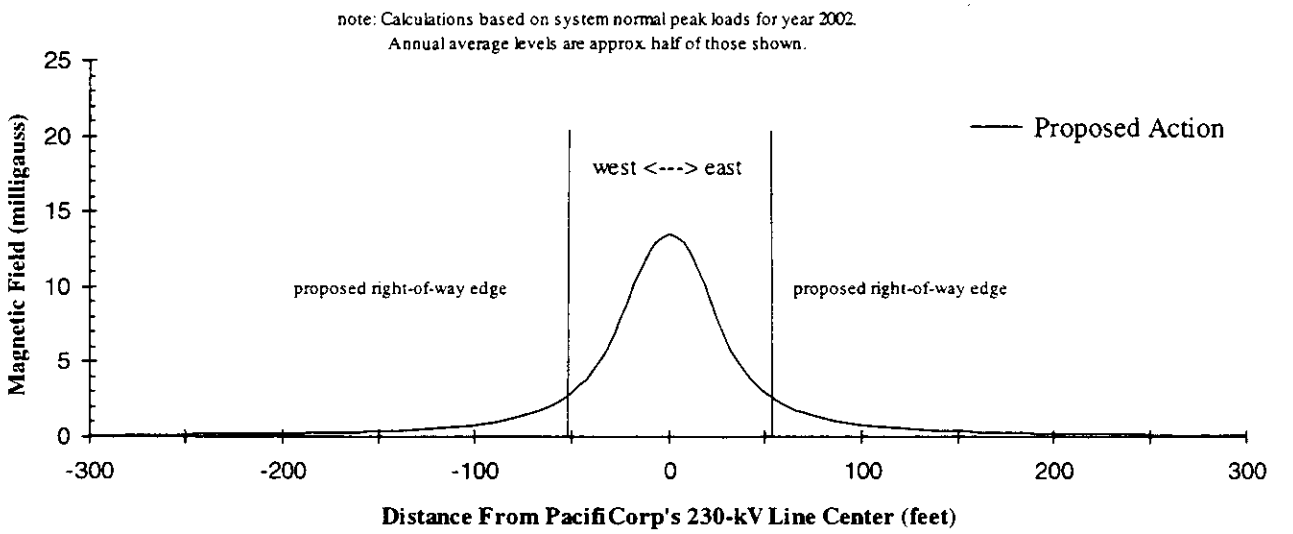


Figure 3-Proposed Action

Magnetic Field Comparison between the Existing and Proposed 115-kV Transmission Line Configurations, Alternative Action - the One Mile Section near Libby

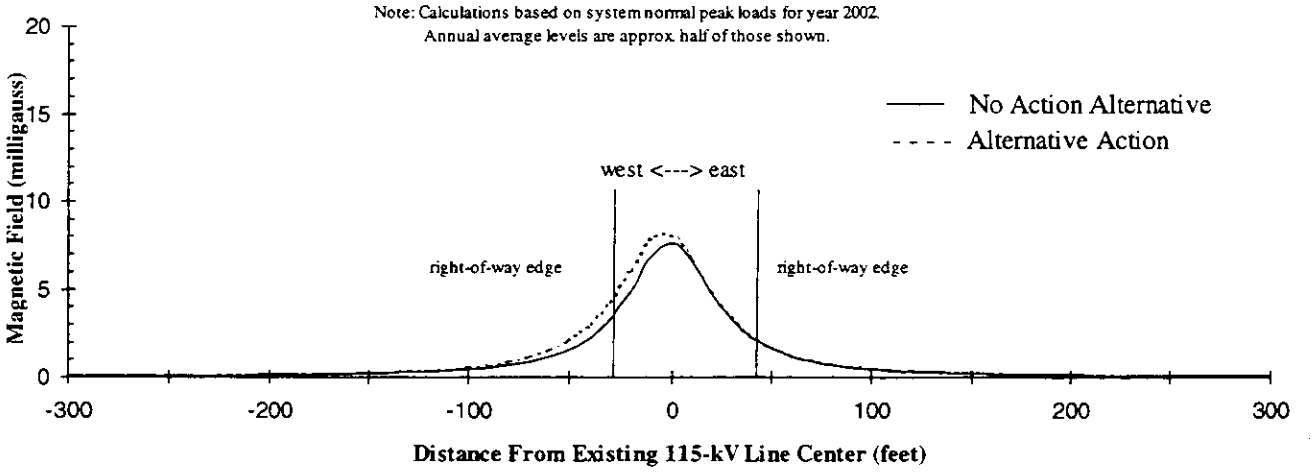


Figure 4-Alternative Action, near Libby Area

Figure 5 shows that the Alternative Action results in no real change to EMF levels at the edge of the right-of-way.

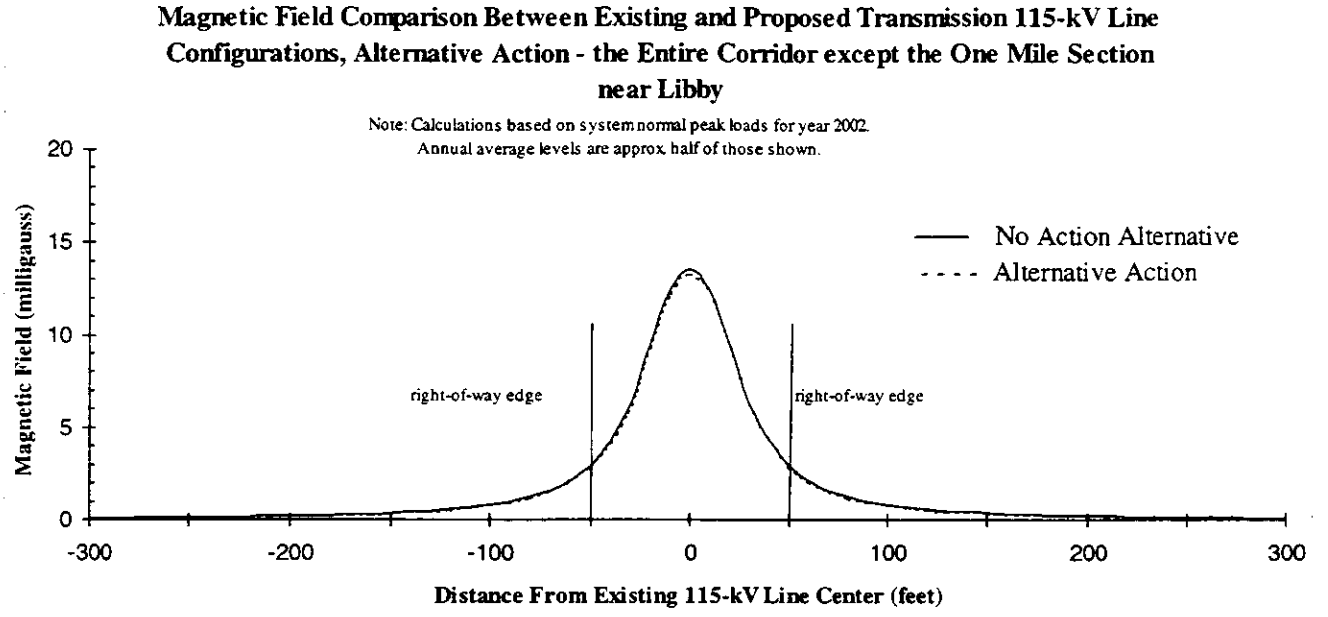


Figure 5-Alternative Action

3.13.5 Noise and Radio/TV Interference

Audible Noise – Noise impacts result from construction activities and from the operation of the transmission facilities. Construction noise is short-term and typically does not result in any serious disturbances to residents.

Noise produced by transmission line corona is a hissing, popping, or crackling sound. It is primarily associated with lines of 345-kV and above. A 120-Hertz (Hz) "hum" is also occasionally super-imposed on the corona-generated noise. The sound level depends on the ambient noise level, conductor and structure geometry, operating voltage and the weather. Audible noise from transmission lines increases in wet weather.

The Noise Control Act of 1972 gives the states the responsibility for noise control. Environmental noise limits applicable to this project are regulated by Oregon Administrative Rules (OAR 340.35). Currently, noise levels associated with the existing right-of-way are below noise standards. Noise is not expected to increase for either of the action alternatives because all lines are less than 345-kV. The line would be designed to meet Oregon requirements if it is placed next to the existing PacifiCorp 230-kV line.

Radio and Television Interference – Corona occurs where high electric field strength on conductors, insulators, and hardware imparts sufficient energy to charged particles to cause ionization (molecular breakdown) of the air. Corona may interfere with

radio and television reception by generating a high-frequency noise called electromagnetic interference (EMI). EMI is the static sometimes heard over an automobile radio when driving beneath high-voltage lines. It is usually associated with higher voltage lines, i.e., 345-kV and above. Corona activity also produces audible noise. (See **Audible Noise** above.)

Federal Communications Commission (FCC) regulations require that incidental radiation devices (such as transmission lines) be operated so that radio and television reception will not be seriously degraded or repeatedly interrupted. Further, FCC regulations require that the operators of these devices mitigate such interference.

Overall, BPA receives very few radio interference (RI) or television interference (TVI) complaints. None are anticipated for this project. Complaints are satisfactorily corrected. As a result of these factors, RI/TVI impacts would be minimal.

3.13.6 Fire

Fires on or near the right-of-way can jeopardize safe and reliable operation of transmission lines. Besides physical damage from heat and flames, smoke and hot gases from a fire can cause arcing between lines, between lines and a structure, or between lines and the ground. Such occurrences can pose a threat to the safety of personnel in the vicinity, such as firefighters, and can result in line outages.

To prevent fires and other hazards, safe clearances are maintained between the tops of trees and the existing lines in the right-of-way. Electricity can arc from the conductor to a treetop. Generally, trees are not allowed to grow over 6 m (20 feet) high on the right-of-way. Trees that need to be cleared from the right-of-way or that could cause an arc are removed. BPA also prohibits storage of flammable materials on rights-of-way.

Transmission structures may be struck by lightning. Because the structures are electrically grounded, the current from the lightning strike passes directly into the ground with minimal risk of starting a fire.

3.18.7 Potential Impacts of the No Action Alternative

No impacts are expected to occur to public health and safety beyond those already incurred from the existing line.

3.13.8 Cumulative Impacts

The Proposed Action would add a new line next to the existing PacifiCorp line for 2.6 miles, increasing the right-of-way by 110 to 130 feet and would also require new right-of-way for about 1 mile in an area that does not have any existing lines. Only 100 feet of new right-of-way would be needed in this area. (See Map 1.) This alignment is also being proposed as part of the Dixonville Route in the South Oregon Coast Reinforcement Project (described in Section 1.4.1). If the Dixonville Route is chosen, it is likely that the line would parallel the Proposed Action. Also, BPA and other utilities

would likely consider constructing any necessary future transmission lines parallel to the existing lines. Expanding the right-of-way and adding another transmission line could change magnetic field exposures. New exposure assessments would need to be done to determine the exact change in magnetic field exposures. Additional noise and radio and television interference could occur.

3.13.9 Mitigation for the Proposed and Alternative Actions

- Design the Proposed and Alternative Actions to meet Oregon and BPA electric field standards.
- Maintain safe clearances between trees and transmission lines to prevent fires and other hazards.
- Bond all hardware to minimize risks including fire.
- Design the line designed to meet Oregon State requirements for noise if it is placed next to the existing PacifiCorp 230-kV line.
- Rectify any TV/radio interference caused by the proposed project.

4.0 Environmental Consultation, Review, and Permit Requirements

4.1 National Environmental Policy Act

This Environmental Assessment was prepared according to NEPA (42 USC 4321 et seq.). NEPA is a national law for protection of the environment. NEPA applies to all federal projects or projects that require federal involvement. BPA considers potential environmental consequences and would take action to protect, restore, and enhance the environment.

4.2 Threatened and Endangered Species

See Sections 3.7, Vegetation and 3.11, Fish and Wildlife for a discussion of the listed and candidate species and the potential impacts to these species.

4.3 Fish and Wildlife Conservation

The Fish and Wildlife Conservation Act of 1980 (16 USC 2901 et seq.) encourages federal agencies to conserve and promote conservation of non-game fish and wildlife species and their habitats. In addition, the Fish and Wildlife Coordination Act (16 USC 661 et seq.) requires federal agencies undertaking projects affecting water resources to consult with the USFWS and the state agency responsible for fish and wildlife resources. The analysis in Section 3.11, Fish and Wildlife, indicates that the alternatives would have no to low impacts to fish and wildlife.

4.4 State, Areawide, and Local Plan and Program Consistency

See Section 4.13, Coastal Zone Management Consistency.

4.5 Wetlands and Floodplains Protection

4.5.1 Floodplain/Wetland Assessment

Department of Energy regulations on compliance with Floodplain/Wetlands environmental review requirements (10 CFR 1022.12) and Executive Orders 11988 and 11990 require BPA to prepare an assessment of the impacts of the alternatives on floodplains and wetlands. BPA published a notice of floodplains/wetland involvement for this project in the *Federal Register* on November 19, 1998. Discussion of wetland effects is provided in Section 3.8, Wetlands. Discussion of floodplain effects is provided in Section 3.9, Floodplains.

4.6 Farmland Protection Policy Act

The Farmland Protection Policy Act (7 U.S.C. 4201 et. seq.) directs federal agencies to identify and quantify adverse impacts of federal programs on farmlands. The Act's purpose is to minimize the number of federal programs that contribute to the unnecessary and irreversible conversion of agricultural land to non-agricultural uses.

The location and extent of prime and other important farmlands designated by the Natural Resource Conservation Service (NRCS), formerly the Soil Conservation Service, were obtained from NRCS soil survey information.

According to the Soil Survey of Coos County, no designated prime, unique or other farmland of statewide importance is crossed by the Proposed Action except for a small area where the existing line crosses Eastside Sumner Road (SW1/4, SW1/4, Sec. 7, T. 26 S., R. 12 W.) and in scattered areas in Sec. 18, T. 26 S., R. 12 W. These areas are in forest or rural residential use and are not being farmed. For the Alternative Action, only in the vicinity of Coalbank Slough and Isthmus Slough would farmland subject to the Farmland Protection Act be crossed by the right-of-way.

Evaluation of the project according to criteria set forth in the Act indicates the alternatives would be in compliance with the Act and would have little or no impact on area farmlands since:

- Except for the immediate area surrounding structures, no additional nonfarmland would be created due to interference with existing land patterns.
- No additional farmland would be impacted or converted to non-agriculture uses because of the project.
- No existing substantial and well-maintained on-farm investments would be affected.
- The alternatives would not cause the agricultural use of adjacent farmlands to change, nor jeopardize the continued existence of area farm support services.

4.7 Discharge Permits under the Clean Water Act

The Clean Water Act (CWA) regulates discharges into water of the United States. The following sections of the CWA could potentially apply to this project.

4.7.1 Federal

Section 401 – The Water Quality Certification program requires that states certify compliance of federal permits and licenses with state water quality standards. A federal permit to conduct an activity that results in discharges into waters of the United States, including wetlands, is issued only after the affected state certifies that existing water quality standards would not be violated if the permit were issued. For this project, the Oregon Department of Environmental Quality would review permits for compliance with state water quality standards if permits were necessary.

Section 402 – This section authorizes stormwater discharges associated with industrial activities under the National Pollutant Discharge Elimination System (NPDES). For Oregon, the EPA has a general permit authorizing federal facilities to discharge stormwater from construction activities disturbing land of 5 or more acres into the waters of the United States, in accordance with various set conditions. BPA would comply with the appropriate conditions for this project and would prepare a Storm Water Pollution Prevention (SWPP) plan if required. The plan helps ensure that erosion control measures would be implemented and maintained during construction. It also addresses best management practices for stabilization, stormwater management, and other controls.

Section 404 – Authorization from the Corps of Engineers is required in accordance with the provisions of Section 404 when dredged or fill material is discharged into waters of the United States, including wetlands. This includes excavation activities that result in the discharge of dredged material that could destroy or degrade waters of the United States.

The construction and upgrade of access roads could potentially impact waters of the United States. Structures would be located outside wetland boundaries where possible. Field surveys would be conducted to identify wetlands and ensure compliance. If permits were necessary, authorization would be sought from the Corps and appropriate state agencies.

4.7.2 State

The Oregon Division of State Lands administers the Removal-Fill Law that requires a permit for removal, fill, or alteration involving 50 cubic yards or more of material in any water of the state, including wetlands. Appropriate permits would be applied for if necessary for this project. See Section 4.13.3, State Agency Authorities and Regulations.

4.8 Noise Control Act

See Section 3.13.5, Noise and Radio/TV Interference.

4.9 Global Warming

The Proposed Action would clear about 44-68 acres of conifers, alder, maple and noxious weeds. These trees and plants would move from being collectors of carbon to emitters of carbon in the form of carbon dioxide (a greenhouse gas) as they degrade rather than grow. The Proposed Action's contribution to global warming would be insignificant because the amount of tree clearing would be small and because low-growing vegetation would naturally revegetate cleared areas.

4.10 Executive Order on Environmental Justice

In February 1994, Executive Order 12898, entitled *Federal Actions to Address Environmental Justice in Minority and Low-income Populations*, was released to federal agencies. This order directs federal agencies to incorporate environmental justice as part of their missions. As such, federal agencies are specifically directed to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations.

In accordance with Executive Order 19898, this action has been evaluated for potential disproportionately high environmental effects on minority and low-income populations (see Section 3.3). There is not a high environmental effect on minority and low-income populations from either the Proposed Action or Alternative Action (see Section 3.5.1).

4.11 Resource Conservation and Recovery Act

No hazardous waste products would be used, discarded or produced by this project. Solid wastes would be disposed of at an approved landfill or recycled. Merchantable timber cleared from the right-of-way would be sold. Slash remaining from clearing would be scattered on the right-of-way to degrade or would be disposed of at an approved landfill.

4.12 Cultural and Historic Resources

See Section 3.12, Cultural Resources.

4.13 Coastal Zone Management Act Consistency

The Oregon Land Conservation and Development Department (LCDC) administers Oregon's Coastal Zone Management Program (CZM). BPA, as an agency of the federal government, is subject to the Coastal Zone Management Act (CZMA, 16 U.S.C. Section 1451-1464 (Act)), and is subject to the coordination and consistency requirements of the Act.

To be determined to be consistent, BPA needs to address a project's consistency with the following elements of the CZM Program:

- The Coos County Comprehensive Plan, and implementing regulations.
- The Statewide Planning Goals (OAR 660-15), as applicable.
- The standards of selected state land use and environmental laws (e.g., the state removal/fill law, state air/water quality standards and general fish and wildlife protections, etc.)

BPA finds the proposed project to be consistent with the State's CZM Program to the maximum extent practicable. Consistency is described in the following sections.

4.13.1 The Coos County Comprehensive Plan

The two alternatives impact areas designated as Agricultural, Forest, Rural-Residential and Urban-Residential, and Industrial/commercial. The Comprehensive Plan has identified a number of goals that address these applicable resource areas. They are as follows:

Agricultural Lands – Goal: *Coos County shall preserve and maintain agricultural lands for farm use consistent with existing and future needs for agricultural products, forest, and open space, except where legitimate needs for nonfarm uses are justified.*

The Alternative Action would impact land designated as agricultural lands; however, the line would be constructed so as to minimize any disturbance to these agricultural properties. BPA would avoid farm-related structures where possible, and minimize any impacts to pasturelands. With a single exception, all agricultural lands would be spanned. BPA would be replacing a single wood pole in pasturelands for the Alternative Action. The impact on the agricultural resource is expected to be minimal.

Forestlands – Goal: *Coos County shall conserve those resources designated as "Forestlands" on the Comprehensive Plan Map by regulating uses and activities through requirements stipulated in the Forest Zone.*

Construction of the Proposed Action could impact forestlands because some forestlands would be removed from production for the life of the line. Though some forestlands would be lost, the loss would be the minimum necessary to provide the safe electrical clearances as required by the National Electric Safety Code.

Section 4.8.300 (F.) of the County's Zoning Ordinance allows for new electric transmission lines with right-of-way widths of up to 100 feet as an administrative conditional use in the Forest zone. BPA would require from 100 to 130 feet of additional right-of-way along the new right-of-way. BPA studied ways to reduce the right-of-way to 100 feet but was prevented from doing so in some areas by National Electric Safety Code (NESC) requirements.

Construction of the Alternative Action would have no impact on the forestlands of Coos County.

Industrial (and Commercial lands) – Goal: *Coos County shall strive to diversify and improve its regional economy.*

Construction of the Proposed Action and the Alternative Action would help sustain the high voltage transmission system in the local area. Providing a reliable and dependable level of electric service to the local area is a critical element in assisting the county in achieving this goal with respect to the regional economy.

Because the Proposed Action appears to be in compliance and supportive of the adopted goals as outlined in the Coos County Comprehensive Plan, the Proposed Action

is determined to be consistent with the Coos Bay Comprehensive Plan, the official land use management plan of Coos County, Oregon.

Local land Use Regulations – Except for the deviation required by the NESC discussed above under Forestlands, BPA has complied with all substantive local land use regulations. Unless Congress dictates otherwise, BPA is prevented from waiving the sovereign immunity of the United States under the Federal Supremacy Clause of the U.S. Constitution by applying for local land use permits. Similarly, the CZMA does not require federal agencies undergoing development projects in a coastal zone to undertake the comprehensive plan amendment processes necessary to create an exception for this project.

4.13.2 Statewide Planning Goals

The following Statewide Planning goals are applicable to the proposed project: Goal 1, Citizen Involvement; Goal 2, Land Use Planning; Goal 3, Agricultural Lands; Goal 4, Forestlands; Goal 11, Public Facilities and Services; Goal 16 Estuarine Resources; and Goal 17, Coastal Shorelands.

Goal 1, Citizen Involvement – *To develop a citizen involvement program that assures the opportunity to be involved in all phases of the planning process.*

As a federal government agency, BPA must comply with the National Environmental Policy Act (NEPA) of 1969, as amended, the basic national charter for protection of the environment. NEPA procedures ensure that environmental information is available to public officials and citizens before actions are taken. To comply with NEPA, BPA has prepared this environmental assessment (EA) and issued the document for a 14-day public and agency review. The EA is set forth in a simplified, understandable form. The public and agencies had an opportunity to comment and comments were considered by the decisionmaker.

Goal 2, Land Use Planning – *To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to ensure an adequate factual base for such decisions and actions.* In addition, Goal 2 states that city, county, state and federal actions shall be consistent with comprehensive plans adopted under ORS Chapter 268.

The Coos County Board of Commissioners adopted the Coos County Comprehensive Plan (Plan) in 1982. This Plan is the official policy document that affects land development in Coos County. For an explanation of how the Proposed Action would be consistent with the Plan, please see Section 4.13.1.

Goal 3, Agricultural Lands – *To preserve and maintain agricultural lands.*

The Proposed Action would have no effect on the agricultural lands in the area. No cultivated crops would be affected. The Alternative Action would place new structures in pasturelands.

Goal 4, Forest Lands – *To conserve forest lands by maintaining the forest land base and to protect the state's forest economy by making possible economically efficient forest practices that assure the continuous growing and harvesting of forest tree species as the leading use on forest land consistent with sound management of soil, air, water, and fish and wildlife resources and to provide for recreational opportunities and agriculture.*

The Proposed Action would remove some forest lands from production. Goal 4 states that before forestland is changed to another use, the productive capacity of the land should be considered and evaluated. BPA has evaluated the forest lands that would be removed from production. They are classified as FC, and are midway between the highest value forest lands (FA) and the lowest value forest lands (FG). The Proposed Action would remove less than 70 acres from production; the Alternative Action would have no effect on forestlands in the area.

Goal 4 and associated state rules limit non-forestry uses on forest lands. Transmission lines are conditional uses on forest lands, and the state rule restricts the size of a transmission line right-of-way to no more than 100 feet. As discussed in Section 4.13.1, BPA requires from 100 to 130 feet of additional right-of-way along the new right-of-way. BPA studied ways to reduce the right-of-way to 100 feet but was prevented from doing so in some areas by National Electric Safety Code requirements.

Goal 11, Public Facilities and Services – *To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.*

BPA, as the federal power marketing agency in the Pacific Northwest, markets power to investor owned utilities (IOUs), Public Utility Districts (PUDs), and large consumers of bulk power, such as aluminum plants. In Coos County, BPA sells wholesale electric power to Coos-Curry Electric Coop, and to Pacific Power & Light (PP&L), who in turn sell power to their customers in the marketplace.

The Proposed Action and Alternative Action would replace a section of transmission line that was constructed in the early 1920s, has been in service beyond its economic life, and needs to be replaced. The availability of electric power is a basic requirement of urban and rural development, and replacing essential transmission facilities would reinforce the necessary framework required by urban and rural development.

Goal 16, Estuarine Resources – *To recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands; and to protect, maintain, where appropriate develop, and where appropriate restore the long-term environmental, economic, and social values, diversity and benefits of Oregon's estuaries.*

The Proposed Action would have no effect on the estuaries in the area. Though the Alternative Action would cross both Isthmus and Coalbank sloughs, the contractor would undertake appropriate erosion control measures to ensure that no sediments would be allowed to reach surface waters in the area. Therefore, the estuarine and wetland values of the local area would be protected.

Goal 17, Coastal Shorelands – *To conserve, protect, where appropriate, develop, and, where appropriate, restore the resources and benefits of all coastal shorelands, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources, and recreation and aesthetics. The management of these shoreland areas shall be compatible with the characteristics of the adjacent coastal waters, and to reduce the hazard to human life and property, and the adverse effects upon water quality and fish and wildlife habitat, resulting from the use and enjoyment of Oregon's coastal shorelands.*

The proposed project would have no adverse effect on Oregon's coastal shorelands (see resource impact discussions in Chapter 3). Any coastal shorelands would be spanned by the Proposed Alternative and Alternative Action. See also Goal 16, Estuarine Resources, above.

4.13.3 State Agency Authorities and Regulations

The State Removal/fill law (ORS 196.810) – The Removal/fill law requires that a permit be obtained from the Division of State Lands for either placing 50 cubic yards (or more) of fill into or removed from waters of the U.S. The applicant would state the nature and quantity of fill or material to be removed, together with the location, time and method to be used. With respect to the proposed project, BPA would not know if it would be necessary to remove or place fill in waters of the U.S. until project design is completed. Since BPA is prepared to comply with all applicable sections of the Clean Water Act, once design is complete, its actions will be consistent with the CZM program.

The Forest Practices Act (ORS 527) – The Forest Practices Act establishes policies and standards for forest management and harvest. The Act requires landowners to notify the State Forester prior to any operation relating to the growing or harvesting of trees. The Act also establishes standards for forest practices that would ensure the continuous growing and harvesting of forest trees, while maintaining air quality, water quality, soil productivity and fish and wildlife habitat. BPA will comply with the state law to the extent practicable.

State Air and Water Quality Standards – The proposed project would not affect the chemical or biological characteristics of waters in the area. It would be designed to comply with local ordinances, laws, and state water quality programs so as not to degrade the quality of shoreline areas or adjacent surface waters. (See also Section 3.10, Water Quality.)

The proposed project's contribution to global warming would be minor due to the small amount of tree clearing that would be required, and the cleared areas would be revegetated with low-growing plants.

4.14 Permits for Structures in Navigable Waterways

Authorization from the Corps is also required under Section 10 of the Rivers and Harbors Act for work or placement of structures below the ordinary high water mark of,

or affecting, navigable water of the United States. The Corps considers Isthmus and Coalbank Sloughs, which will be spanned by the Alternative Action, navigable waters of the U.S. BPA would need to modify existing permits.

4.15 Federal Insecticide, Fungicide and Rodenticide Act

Herbicides would not be used during project construction; however, herbicides may be used to maintain the right-of-way. BPA is in the process of re-examining and re-evaluating its entire vegetation management program to ensure that it is up-to-date; the BPA Vegetation Management Program draft environmental impact statement will be available for public review in late spring 1999.

4.16 Safe Drinking Water Act

The Safe Drinking Water Act (42 U.S.C. sec 300f et. seq.) is designed to protect the quality of public drinking water and its sources. BPA would comply with state and local public drinking water regulations. None of the project alternatives would affect any sole-source aquifers or other critical aquifers or adversely affect any surface water supplies.

4.17 Review, Consultation and Permit Requirements not Applicable to this Project

4.17.1 Permits for Rights-of-Way on Public Lands

The project would not cross land administered by another federal agency; therefore, no permits for right-of-way on public lands are needed.

4.17.2 Clean Air Act

There are no air quality regulations applicable to the project. Cleared trees or slash would not be burned.

4.17.3 Toxic Substances Control Act

No toxic substances would be manufactured or used on this project.

4.17.4 Energy Conservation at Federal Facilities.

Energy conservation practices are not relevant to the construction, operation, or maintenance of a transmission line.

5.0 Persons and Agencies Consulted

5.1 Federal Agencies

United States Fish and Wildlife Service

United States Army Corps of Engineers

5.2 State Agencies

Oregon Department of Fish and Wildlife

Oregon Department of Land Conservation and Development

Energy Facility Siting Council, Oregon Department of Energy

Oregon Department of Environmental Quality

Oregon Division of State Lands

Oregon Department of Transportation

Governor's Watershed Enhancement Board

5.3 Local Agencies

County of Coos

Coos County Board of Commissioners

City of Coos Bay

5.4 Tribes

Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians

Coquille Indian Tribe

5.5 Interest Groups

1000 Friends of Oregon

National Wildlife Federation

Native Plant Society of Oregon

Northwestern University Center for Urban Affairs & Policy Research

Oregon Natural Resources Council

Oregon Shores Conservation Coalition

Sierra Club

Wetlands Conservancy

5.6 Utilities

Central Lincoln PUD

Coos Curry Electric Coop Inc.

PacifiCorp

5.7 Public Officials

Federal Congressionals

Peter DeFazio

Gordon Smith

Ron Wyden

Governor

John Kitzhaber

State Senator and Representative

Veral Tarno

Mike Lehman

5.8 Media

Coos Bay World

5.9 Landowners

There are over 100 landowners on the mail list.

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7.0 Glossary

Alluvium - Material such as sand, silt, or clay which has been deposited on land by running water of streams and rivers.

Angle Structures – A heavy structure designed for use where the transmission line loads the tower primarily in tension (pull) rather than compression (downward push), such as in turning large angles along a line or bringing a line into a substation.

Emergent - Plants that are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens.

Estuarine - Wetland type as defined by Cowardin, 1979, which consists of deepwater tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land.

Floodplain - That portion of a river valley adjacent to the stream channel which is covered with water when the stream overflows its banks during flood stage.

Mass movement - Dislodgment and downslope transport of soil and rock material, as a unit, under direct gravitational stress. The process includes slow displacements such as creep and solifluction, and rapid movements such as landslides, rock slides, and falls, earthflows, debris flows, and avalanches.

Noxious weeds - Plants that are injurious to public health, crops, livestock, land or other property.

Palustrine - Wetland type as defined by Cowardin, 1979, which groups the vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie, which are found throughout the United States.

Tangent Structures - A structure designed to support conductors strung along a virtually straight line with only small turning or descending or ascending angles. Approximately five suspension structures are used to a mile; tangent structures have no turn angle; angle structures have light or heavy turning abilities.

Wetlands - An area where the soil experiences anaerobic conditions because of inundation of water during the growing season. Indicators of a wetland include types of plants, soil characteristics and hydrology of the area.

Appendix A - Property Impacts

Property Impacts

The **Proposed Action** would construct 5.8 km (3.6 miles) of new 115-kV transmission line right-of-way from structure 27/5 to structure 36/2 of BPA's 115-kV Reedsport-Fairview No.1 transmission line, located in Coos County, Oregon. The new right-of-way would be from 100 to 130 feet wide; about 4.2 km (2.6 miles) would parallel PacifiCorp's existing 230-kV transmission line. Easements would need to be acquired for the new right-of-way as well as for the access rights to the new line.

The **Alternative Action** would rebuild the existing 13.9 km (8.7 miles) section of the Reedsport-Fairview No. 1, 115-kV transmission line right-of-way from structures 27/5 to 36/2, using the existing right-of-way and access road system. However, it is anticipated that the final design of the transmission line will indicate that some additional access roads may be needed along portions of the transmission line right-of-way and that some of the existing roads may need to be improved.

Landowners would be offered fair market value, established through the appraisal process, for the new easements. The appraisal process takes all factors affecting value into consideration including the impact of transmission lines on property value. It may also reference studies conducted on similar properties to add support to valuation considerations. The strength of any appraisal is dependent on the individual analysis of the property, using neighborhood and specific market data to estimate fair market value.

Impacts to property for existing and new rights-of-way for transmission lines and access roads are discussed below.

Existing transmission line right-of-way: The Alternative Action would rebuild BPA's existing transmission line. Land types along the existing transmission line right-of-way include residential, rural residential, agricultural, pasture, small woodlot, wood product industrial land as well as recreational land in Coos County, Oregon. The existing transmission line right-of-way has already imposed land use limitations on the land uses along the right-of-way by the physical presence of the lines and structures, as well as by use limitations imposed by the original easements.

New transmission line right-of-way: The Proposed Action would require the acquisition of easements for the new transmission line right-of-way and access roads. Land types along the proposed new right-of-way include rural residential, agricultural, pasture, small woodlot, and recreational land in Coos County, Oregon.

For forestland, fair market value would be paid for all timber to be cut on the new right-of-way, as well as for any trees off the right-of-way that need to be cut for construction purposes or that pose a danger of falling into the line or across the access roads. A line crossing forestland may leave limited residual value to the property for its intended use; therefore, fair market compensation for a transmission line easement across forestland may be closer to fee value than for other land use types.

For nonforest property, the impact of introducing a new right-of-way for transmission structures and lines can vary dramatically, depending on the placement of

the right-of-way in relation to the property's size, shape, utility and location of existing improvements. BPA's easement documents specify "the present and future right to clear the right-of-way and to keep the same clear of all structures, trees, brush, vegetation, and fire hazards, provided, however, that vegetation and fire hazards shall not include agricultural crops." Therefore, the easement would limit the ability to build structures, as well as the ability to grow ornamental trees and shrubbery (height limitations) within the transmission line right-of-way. A transmission line might also diminish the utility of a portion of property if the line were effectively to sever this area from the remaining property (severance damage). Whether a transmission line introduces a negative visual impact depends on the placement of the line across a property, as well as on each individual landowner's perception of what is visually acceptable or unacceptable. If the transmission line were to cross a portion of the property in agricultural use such as pasture or cropland, little utility would be lost between the structures, but 100 percent of the utility would be lost within the base of the structure. Structures may also present an obstacle to operating farm equipment and controlling weeds. These factors, as well as any other elements unique to the property, are taken into consideration to determine the loss in value within the easement area, as well as outside the easement area in case of severance.

Access Roads: If BPA acquires rights on existing access roads and the landowner has equal benefit and need of the access road, fair market compensation is generally around 50 percent of fee value, or something less than 50 percent if other landowners share use of the access road. If the landowner has little or no use for the access road, fair market compensation is generally close to fee value.

Property Impact Studies: Several studies have been conducted throughout the United States and Canada since the mid-1960s to identify the impact of overhead high voltage transmission lines on property values. A 1992 study (Kroll and Priestley) reviews and summarizes several research projects conducted over the previous 15-year period. Three of the studies were done in the BPA region. One was a 1985 study of western Montana suburban and rural residential property (both improved and unimproved) in relation to a 230-kV transmission line and a proposed 500-kV transmission line. It concluded that no adjustment to market price was necessary for properties encumbered by or in view of the line. A 1990 study involving a 500-kV line in western Montana analyzed interviews with 400 suburban and rural-residential property owners. It found that 50 percent of the residents living within almost 1 mile of a 500-kV transmission line felt there was a negative effect on property values, while only 5 percent of the residents living 1 to 3 miles from the line felt there was a negative effect on property value. A 1983 study along the Oregon/Idaho border of a 500-kV line through agricultural grazing land concluded that property values were only affected by the amount of land removed by towers and roads.

A 1995 study prepared for BPA (Cowger, et al.), analyzed sales in three urban areas in the Pacific Northwest: Portland, Oregon and Vancouver and Seattle, Washington. All three urban areas were included in the study of 1990 and 1991 residential sales (subjects) adjoining 16 BPA high voltage transmission lines. The sales prices of 281 homes were compared to other residential sales with similar property and home attributes that were

not adjacent to transmission lines (comps). Subjects in Vancouver and Seattle were worth approximately 1 percent less than their matched comps, while the Portland subjects were worth almost 1.5 percent more than their comps. BPA is in the process of updating this 1990-91 data with 1994-95 residential housing sales.

Summary: Any new transmission line or access road easement would be appraised, and the landowners would be offered the fair market value for these land rights. Some short-term adverse impacts on property value and salability along the proposed new right-of-way may occur on an individual basis. However, these impacts are highly variable, individualized, and unpredictable. The project is not expected to cause overall long-term adverse effects on property values along the existing right-of-way.

Appendix B – Public Comments/Responses

BPA Public Involvement

From: Driessen, Laurens C. - TNF [lcdriessen@bpa.gov]
Sent: Tuesday, February 23, 1999 4:19 PM
To: 'Webster Excavating'; 'comment@bpa.gov'
Subject: RE: Reedsport-Fairview Project

Please note page 7 for the discussion of double circuiting with the PacifiCorp line. This option was explored and eliminated for the noted reasons.

Lou

-----Original Message-----
From: Webster Excavating [mailto:webster6@gte.net]
Sent: Tuesday, February 23, 1999 3:47 PM
To: 'comment@bpa.gov'
Cc: 'lcdriessen@bpa.gov'
Subject: Reedsport-Fairview Project

BPA Project Manager L.C.Driessen

I have received your correspondence detailing your proposed project to upgrade the R/F line. I noticed your proposal does not address the suggestion I made to replace the PP&L line with a combined line of PP&L and R/F in the existing right-of-way. Of course, this would please everyone and that would be too easy. The time has come for government agencies to stop gobbling up private property when other alternatives are available.] 8-1

I am very concerned about this issue of land grabbing for this project and future projects.] 8-2

Jenny Webster

Cc: Governor Kitzhaber

Kuehn, Virginia (Ginny) -KC-7

From: Wittpenn, Nancy A. - KECN
Sent: Friday, March 12, 1999 8:38 AM
To: Kuehn, Virginia (Ginny) -KC-7
Subject: FW: E-Mail From Telephones and E-Mail Lookup

—Original Message—
From: robertldoc@harborside.com [mailto:robertldoc@harborside.com]
Sent: Thursday, March 11, 1999 4:49 PM
To: Nancy A Wittpenn
Subject: E-Mail From Telephones and E-Mail Lookup

name: Robert Kent Levy, MD
e-mail: robertldoc@harborside.com
url of web page: http://www.bpa.gov/cgi-scripts/Postit/DOE_staff.asp?page=telephones&Last_Name=wittpenn&FirstMI_Name=
message: I understand that you are in charge of the environmental impact of the Reedsport-Fairview Reinforcement Project. I have problems with the environmental impact of this project with regard to my farm.. It will cross the watershed and stream of the inflow of my trout pond. This will cause the pond to silt in and destroy my fish. I would like to see the line moved to a place that will not cause this to happen, although my first choice is to have the line stay where it is. I have a suggestion for moving the line. 9-1

My problem is that I have to leave the country at 5:05 in the AM 3/12/99. I will return 4/1/99, and would be happy to discuss it at that time.
Thank you for your consideration,
Robert Kent Levy, MD, FACP

The following information is from the web server:
1. Logon: IUSR_GRANITE
2. Remote Host: 204.214.112.208
3. Remote IP Address: 204.214.112.208
4. Form URL: http://www.bpa.gov/cgi-bin/form_mailer.pl?mailto=yes&to=Nancy+A+Wittpenn+<nawittpenn@bpa.gov>&subject=E-Mail+From+Telephones+and+E-Mail+Lookup
5. Browser Client: Mozilla/4.0 (compatible; MSIE 4.01; Windows 98)

Richard Liles
1645 Ln Catching St. Rd.
Coos Bay, Ore 97420

March, 16, 1999

Bonneville Power Administration
Public Affairs Office - A C
P.O. Box 12999
Portland, Oregon 97212

In answer to B P A's proposed project of a 3.6 mile Transmission Line that on new our properties.

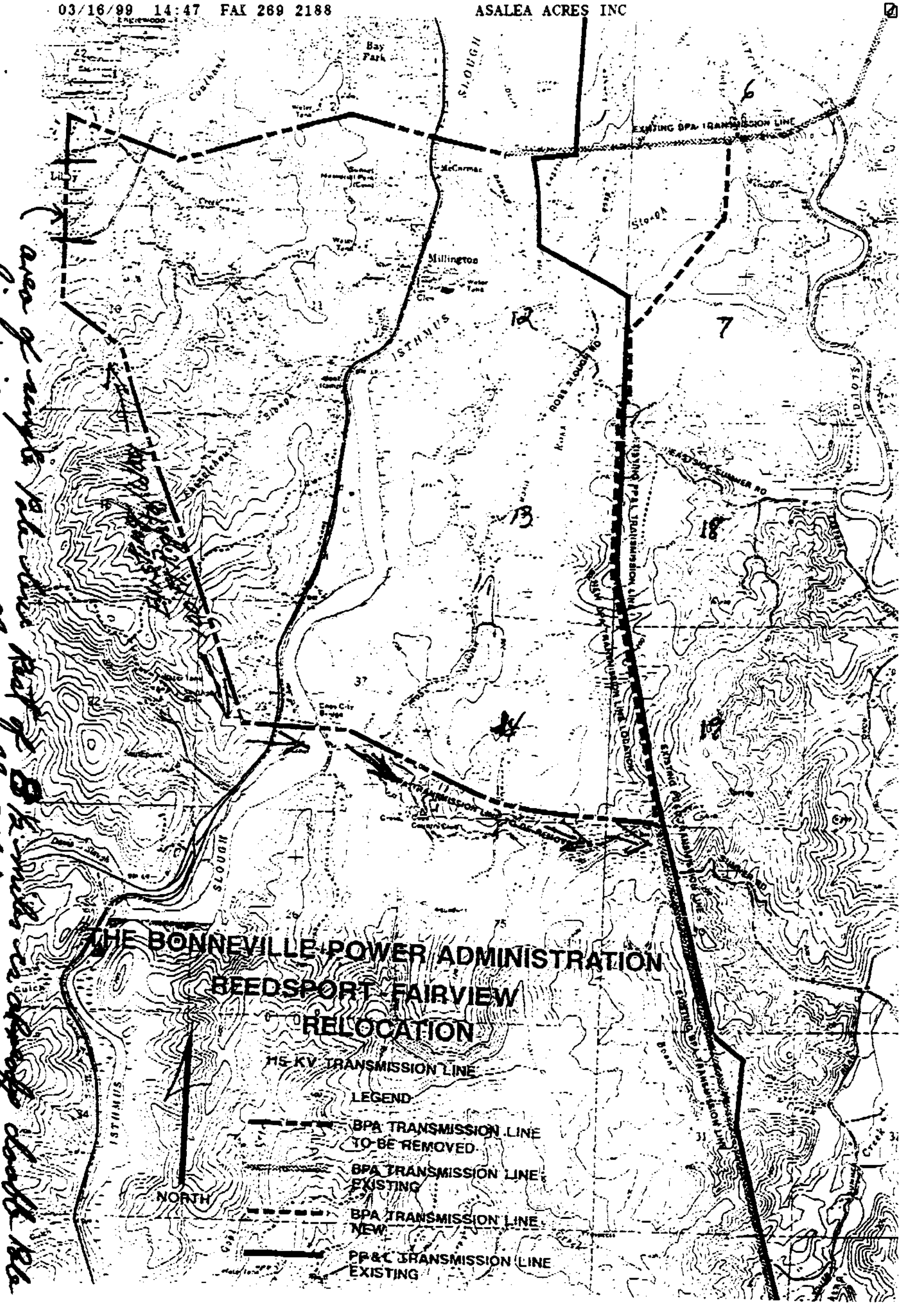
10-1 As Landowners and adjoing Property owners, we do not see where any consideration to alternative routes has been considered. As you have a route that you claim has been in use for 80 years, but is closer to 45 years and has been a realiable route all this time, as you have right of way and access to this line, which is a double pole line except for about 5 poles beside a county road, which is what you propose to build in your new route.

10-2 As you have let this line go into disrepair, we do not find this to be an adequate reason to claim more right of way for this new proposed line and condemn private property, which you may find easier to build on.

10-3 We do not feel you have even considered an environmental impact on the route and Timberland you are trying to condemn. This area has been hit hard by the amount of timberland base that has been taken away and feel that every consideration should be made to use the existing right of-way you have already.

10-4 Sincerely, the undersigned Property Owners

Richard Liles
Nancy Wright
Ann Morris
Arabelle Cavanaugh
Milton Cavanaugh
Virginia Kindrick
Greg O. Jackson


THE BONNEVILLE POWER ADMINISTRATION
REEDSPORT - FAIRVIEW
RELOCATION
115-KV TRANSMISSION LINE
LEGEND
BPA TRANSMISSION LINE TO BE REMOVED
BPA TRANSMISSION LINE EXISTING
BPA TRANSMISSION LINE NEW
PP&C TRANSMISSION LINE EXISTING
NORTH
EXISTING BPA TRANSMISSION LINE
ISTHMUS
SLOUGH
Millington
Bay Park
McCormac
ROSS SLOUGH RD
EAST SIDE SUMNER RD
TRANSMISSION LINE TO BE REMOVED

Richard J. Liles
1645 W. Catching Sl.Rd.
Coos Bay,Ore 97420

March 16, '99

Dept.of Energy
Bonneville Power Administration
P.O.Box 3621
Portland, Ore 97208-3621

10-5 I see in your Preliminary Environmental Assessment that no consideration is given to Farming or Crops on your new proposed route of 3.6 miles. Where in Timber in the next 50 year rotation would produce approximately two million feet of Timber or loss of Revenue of 1.8 million dollars, to the land owners, but as you so state it would be easier for you to maintain with little upkeep, and you could care less. This would be very expensive to reimburse us for our loss just to make it more convenient for your access.

10-6 We own 650 acres of forest land with BPA and PPand L crossing over our land approximately 30 acres in various places. We have just returned from our Bandon Property which you cross for ½ mile at 200 feet width with an entry Right of Way of 20 feet. You did not notify me you were going to be there and the entry was cut 25-35feet with a large brush cutter, trees were destroyed, my road impassible in places due to the middle of winter operation.
You mowed some brush and have some flags on the edges of Right of Way, cut approximately 500 trees some 30 ft. outside of the Right of Way. Some trees cut in the middle and will not make log lengths, with no compensation; this should be paid on trees outside of Right of Way, then they leave this mess for me to clean up. I have grown these trees for 35 years with no returns yet.

10-7 I let you enter my property at home to survey, you are very nice, you sign a paper to not cut trees claiming that you can turn corners and whatever with your line. On entering the property you surveyed where you wanted, cut holes through fir trees to see with the transit. I asked at the meeting about trees and you said with a chuckle we're going to take them anyway.In your Pre-enviromental Impactstatement you claimed you were refused entry to property, I wonder why. You have total disregard for Property Ownership. I can see the some thing here as at the Bandon Property.

10-8 Coho, Stellhead and Cutthroat Fish all use Ross Inlet, your proposed new line crosses a flood plain, small creeks and drainage go into Ross Inlet. Small fish are in ditches under proposed line, which is in the center of proposed 3.6 line, and will be within 300 ft of Ross Inlet. Fish go a mileand ½ above this point.Your line will be over at least 10 water scorces inuse at this time for Household use.

10-9 As the cost of the new Right of Way or repair of Existing Right of Way is about the same with zero impact to the enviroment, it seems money well spent to repair existiong right of way. I don't beleive the power would travel more than one second longer and should be no great loss of revenuc to BPA, if you had maintaned your lines with proper repair, you would not this sorry excuse of needed repairs, it seems strange that in approximately 48 miles of line, the bad repairs are only in 8.3 miles you wish to eleminate which was all installedabout 1950 or later, not 1920.as so stated. You would have thought improvements would have beed made since 1920.

Phone; 541-267-6448
Fax- 541-269-2188

Richard Liles

Richard Liles

ROSEBURG
RESOURCES CO.

Communications
Bonneville Power Administration – ACS-7
P.O. Box 12999
Portland, OR 97212

March 15, 1999

To Whom It May Concern:

Bonneville Power Administration's proposed Reedsport – Fairview power transmission line would pass through Roseburg Forest Products Co. lands in Section 19, T26S, R12W. In this location the proposed line would parallel the existing PacifiCorp line. As proposed the 230-kV line would require that an additional ten (10) acres be removed from the growing of trees. This is an unacceptable use of the forest land base in Oregon. 11-1

A power line is a very disruptive intrusion upon the landscape. It results in a danger zone to humans and wildlife, loss of habitat, loss of forest resource, poor quality roads that contribute to erosion and sedimentation, and restrictive use on adjacent forest management activities. **To plan to double the area already committed under powerlines is an unacceptable use of private forestland.** The reasons BPA has provided for not using the existing power lines with upgrades as needed are not adequately addressed or defined. 11-2 If BPA is not able to met cooperative agreements with other utilities, adjacent landowners should not be penalized. If BPA intends to make decisions which result in the elimination of forestland from future management then an environmental impact statement is required. 11-3 An EIS should be expected before any landowner is asked to give up their lands.

Roseburg Forest Products Co. is opposed to the planned Reedsport-Fairview transmission project as stated in the Preliminary Environmental Assessment. We believe that this creates an unnecessary confiscation of private property with flimsy justification. We strongly encourage BPA to find another solution.

Regards,

Peter Van Sickle

Peter Van Sickle
Chief Forester
Smith River District

P.O. BOX 1088
ROSEBURG, OR 97470
TEL. 541-679-3311
FAX 541-679-2798

711 PORT DOCK ROAD
REEDSPORT, OR 97467
TEL. 541-271-6200
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P.O. BOX 218
COQUILLE, OR 97423
TEL. 541-396-2131
FAX 541-396-4712

P.O. BOX 398
VENETA, OR 97487
TEL. 541-935-1653
FAX 541-935-1753

Richard and Betty Liles
1645 W. Catching Sl. Rd.
Coos Bay, Ore. 97420

March 24, 1999

Reference #TNF-3

Bonneville Power Administration
P.O.Box 3621
Portland, Ore 97208-3621

Mr. Lou Driessen

Inanswer to your letter asking permission to enter out property for further surveying and environmental analysis purposes we are protesting any further rights to cross our property.

We have learned the paper we signed to let in the surveyors, who damaged property, is the writted permission you are still using, and any previous permission now is declined, null and void.

Richard and I have purchased this property over many years until we have 280 acres in land and timber inthis unit. The children and us have planted timber for years,when areas needed. It is our childrens heritage. Then a government agency wants to take our Land, our Rights away for their own greed.

12-1 [We, people in this 3/6 mile line proposal have great concerns for our household water sources. You intend to clear cut, put in access roads,thru and over peoples water supplies. Evidently you have no concers for rural peoples household uses. Also this
12-2 [line is not a necessity.

Sincerely,

Richard Liles
Robert Liles
Betty Liles
Betty Liles

Steven and Wesa Liles
HC83, Box 2990
Coquille, Ore 97423

March 24, 1999

Reference #TNF-3

Bonneville Power Administration
P.O.Bos 3621
Portland, Ore 97208-3621

Mr. Lou Driessen

Your permission to enter our property is declined. My Father and I planted the timber on this property to watch it grow and harvest in later years. We certainly do not want a government agency taking any part of this land. 13-1

Also I'm concerned for my Father's health and well being if this happens. He loves the land he owrked so hard to own.

Sincerely.

Steven Liles
Wesa Liles

Edgar W. Seville
1586 Ross Inlet Rd
Coos Bay Oregon

March 16, 1999

Refering to [redacted]

Bonneville Power Administration
P. O. Box 3621
Portland Oregon 97208-3621

Dear Sir

Refering to your letter of March 12 about permission to enter our property for further survey and environmental purposes I must protest any further rights to cross our property at this time.

Also I would mention that we have several water supplies that your survey crosses that may be used for household uses. 14-1

Respectfully
Edgar W. Seville

Responses

8-1

Please see Section 2.4.1 in the EA for a discussion of double-circuiting with the PacifiCorp line. This alternative was considered but eliminated from detailed consideration for the noted reasons.

8-2

For each new project, BPA studies alternatives for their technical feasibility, environmental impacts, and overall costs. BPA is legally obligated to meet the needs of its customers, while minimizing costs and environmental impacts.

BPA acquired the existing Reedsport-Fairview line in the 1950s. Because of its age, many repairs have been done over the years. Concerns still remain because of the age of the conductor and the need to upgrade it. The reasons for relocating the line are described in Sections 1.1 and 1.2, and Table 2. As mentioned in Section 2.2 of the EA, reconstructing the line in place will cost $2.18 million. Relocation would cost about $1.93 million. BPA prefers to relocate the line (Proposed Action). This alternative reduces near-term costs by about $250,000 (includes compensation to landowners). In addition, there is a long-term benefit of yearly savings of about $160,000 for reduced electrical losses due to the shorter line length. Over the years, the accumulated savings of the $160,000 adds up to a considerable sum (see Table 2). The Proposed Action also reduces maintenance costs because the new line would be 5 miles shorter and does not cross highly developed residential properties.

In Sections 1.4.1 and 1.4.2, BPA briefly describes two additional transmission line projects in your area. An environmental impact statement is being done on the South Oregon Coast Reinforcement Project. Although one of the alternatives is to route the new line along the same corridor as the Proposed Action for this project, other routes are also being studied that do not go through your area. No decision on routes has been made at this time. The potential need for another 230-kV line is identified in Section 1.4.2. A future 230–kV line could not be built on the existing Reedsport-Fairview right-of-way because it crosses a very congested area, but the new right-of-way needed for the Proposed Action could more readily incorporate a future 230-kV line within the same right-of-way. Using the same right-of-way would represent estimated future savings of over $1,000,000. When this project becomes reasonably foreseeable, an environmental analysis will be done.

BPA would compensate landowners for any right-of-way or land needed for a new line(s).

9-1

While surveying the route for the preferred alternative, the design engineer was made aware of the location of your trout ponds by the surveyors. As a result, the centerline of the proposed route was relocated to the west to avoid impacts to the ponds. On April 2,

1999, BPA contacted you to schedule a meeting to discuss this issue. You declined to attend the meeting but spoke with our surveyors on-site regarding the source and location of your ponds (trout and drinking water source). No access roads will be located near your trout ponds or their source. A road already exists next to the pond which you have identified as your drinking water source. BPA plans to improve the existing road and extend it to the new right-of-way. Rocking the road and improving the culvert, if needed, would minimize any sedimentation that may be occurring in that pond presently.

Transmission structures are being designed to be taller to minimize clearing of trees and low-growing vegetation at or near the creeks that are the source for your ponds. The transmission line would span the creeks and avoid your ponds completely. The structures themselves will not be located near the creeks or ponds (greater than 250 feet at the closest point to one of the creeks). These actions will minimize or avoid impacts to the creeks and ponds.

In late May, you did agree to meet with our design engineer to discuss your continuing concerns regarding the project. At the meeting you offered several new ideas that may better meet your needs. BPA is presently considering these suggestions and others while it continues to work on the transmission line design. BPA will continue to work with you to try and meet your needs, as well as your neighbors, and BPA's own needs.

10-1

Several alternatives that involve new routes were studied in the EA. These are discussed in Sections 2.1, 2.2, 2.3, and 2.4.

10-2

To BPA's knowledge, the conductor on portions of the existing line is a 1920s vintage but BPA acquired the line from another company in the 1950s. BPA experiences high outage times (about 276 minutes/year [1997]) on this line and lack of vehicle access is one of the factors for this high number. The reason for relocating the existing line is explained in Section 1.1, Need for Action, and Section 1.2, Background.

The existing line has a combination of double pole and single pole structures. There are 15 single pole structures. BPA is not absolutely sure what line you are referring to in your comment but assumes it is the existing line.

10-3

BPA has done regular scheduled maintenance on the existing line. BPA acquired the line in the 1950s but the line had been in existence before that time. The life expectancy of a wood pole line is about 50 years. Despite maintenance, this line is experiencing natural deterioration to its poles and hardware as it reaches the end of its life expectancy. BPA's reasons for moving the line are described in Sections 1.1 and 1.2.

10-4

This letter was originally sent by landowners to BPA on June 13, 1998, well before an environmental study was started. The Environmental Assessment is now complete and includes an evaluation of impacts on timberland. See Sections 3.1.2, 3.3.1, 3.3.2, 4.13, and Appendix A.

10-5

As described in Section 3.2.2, no land currently in agricultural use would be crossed by the Proposed Action, so no impacts would occur. This has been confirmed by field visits and aerial photography.

Your estimates of 2 million board feet of timber at $1.8 million dollars translates to $900 per 1000 board feet (MBF) timber. Regardless of whether those numbers represent stumpage value, they are unobtainable in today's market. In today's market, a realistic high-end figure for stumpage value would be closer to $500 per MBF of timber. The EA assumed clearing 48-66 acres of vegetation. A portion of those acres are in forestland classified as FC, which is midway between the highest producing forestlands (FA) and the lowest producing forestlands (FG). According to published yield tables for westside Douglas-fir (DNR Report #20R, April, 1972), this classification of forestland will produce approximately 24 MBF at age 50, which translates to a range of 1,150 MBF to 1,500 MBF. Other portions of the acres to be cleared are in low growing brush species that have no merchantable value. Whatever the final figures are, fair market value would be paid to the landowner for all timber cut on new right-of-way, and for any trees off right-of-way that need to be cut for construction purposes or that pose a danger of falling into the line or across access roads.

10-6

BPA has a 212.5-foot right-of-way on the property you refer to in your comment. Brush cutting usually occurs on a 5-year cycle. Though not required by law, BPA sends a notification letter to all affected landowners as a courtesy before any brush cutting is done. Unless the letter is returned unopened, BPA can only assume that the landowner has received the notification.

Brush cutting is crucial to the safe operation of BPA's lines. All cutting crews follow BPA's transmission line and access road guidelines. After brush was cut on your property, BPA's Foreman I and Brush Inspector reviewed the work and found it to be in compliance with normal brush cutting procedures.

BPA strongly encourages landowners to contact local offices immediately if they think that maintenance activities are being done incorrectly on their property.

10-7

BPA has a responsibility to be a good neighbor to all landowners who own property under or adjacent to BPA facilities. BPA continually educates employees and contractors on the seriousness of this responsibility. BPA appreciates your willingness to allow BPA

and its contractors on your land to survey for a new transmission line. BPA had a contract survey crew perform the work that is referenced in your comment. The contract crew was given explicit written and verbal instructions by BPA about activities that were allowed on your property. Unfortunately, one of the contract employees did not follow all of those instructions. BPA banned the responsible contract employee from all BPA work and he has since left the contract company.

10-8

In the EA, BPA recognizes that the Proposed Action would span the Ross Slough floodplain and other creeks and drainages. BPA also recognizes that coho, steelhead, and cutthroat trout are present in Ross Slough. The EA recognizes that groundwater wells supply drinking water to some residents in the area. BPA is concerned about any potential impacts to surface and groundwater sources. This project will be designed and constructed to comply with local ordinances and laws and state water quality programs so as not to degrade ground or surface waters nor jeopardize their usability as a drinking water source. To insure that household water sources are protected, preventive measures and best management practices (BMPs) will be employed in the final location, construction, operation, and maintenance of the transmission line to minimize the possibility of contamination.

11-1

An expansion of the existing right-of-way would require BPA to remove more timber. Depending on the quantity, quality, and location of timber to be removed, temporary or permanent disruption to environmental resources can occur. Sometimes the disruption is very minimal. For this project, only those trees needed for the safe operation of the line would be removed. In some areas (especially your property), the right-of-way has been recently logged and the amount of timber to be removed would be less. Also, roads on your property that may be needed by BPA for right-of-way access would be improved by gravelling, and installation of culverts and waterbars. This may help if erosion and sedimentation is occurring. Impacts of timber removal are discussed in Sections 3.1.2, 3.3.1, 3.3.2, and 4.13. As discussed in Appendix A, private landowners would be compensated for timber removal.

11-2

BPA's reasons for not building a double-circuit line with the PacifiCorp line are described in Section 2.4.1. BPA is very concerned about an inability to maintain and control a small portion of a lengthy transmission line and reduced reliability. Both the existing 230-kV line and the existing 115-kV line are critical to the electrical service that serves this part of the Oregon coast. Each line acts as a backup if one of the lines were to go out of service. If both lines were to go out of service simultaneously, blackouts would occur in the local area and beyond. In addition, the double-circuit alternative is considerably more expensive. Due to the lack of control, reduced reliability, and increased costs, BPA will not consider the double-circuit alternative further.

11-3

Department of Energy National Environmental Policy Act Implementing Procedures (10 CFR Part 1021) guide BPA in determining the level of environmental coverage needed for each transmission project. Although forestlands are an important resource that is considered in an environmental analysis, it is not a criterion that determines the level of NEPA coverage required on a project.

12-1

BPA appreciates the information on household use of water in the area. None of BPA's conversations with landowners in the past raised this concern although BPA recognized that groundwater wells supply drinking water to some residents in the area (See Section 3.10.1). One landowner is concerned about a new line spanning his trout and drinking water ponds but there was no indication that the water was for household use at the time he sent his comment to BPA on March 11th. He has since raised the concern regarding his drinking water. See comment 9 and response.

BPA is concerned about any potential impacts to surface and ground water sources. This project will be designed and constructed to comply with local ordinances and laws and State water quality programs so as not to degrade ground or surface waters nor jeopardize their usability as a drinking water source. To insure that household water sources are protected, preventive measures and best management practices (BMPs) will be employed in the final location, construction, operation, and maintenance of the transmission line to minimize the possibility of contamination.

12-2

The need for the project, background, and purpose, are described in Sections 1.1, 1.2, and 1.3.

13-1

BPA does not intend to take land. As described in Appendix A, Property Impacts, a new line and access roads would require the acquisition of easements. Landowners would be offered fair market value, established through the appraisal process, for new easements. Also, fair market value would be paid for all timber cut on the new right-of-way, and for any trees off right-of-way that need to be cut for construction purposes or that pose a danger of falling into the line or across access roads.

14-1

See response 12-1. BPA met with you on your property on April 14, 1999 to discuss and locate your drinking water supply (water line and sources). Several other neighbors were in attendance. BPA wanted to confirm whether the location of the new line would impact your drinking water. Your drinking water is spring-fed and located west of the proposed line. No disturbance will occur in the immediate area although a structure will be placed up-hill approximately 700 feet from the spring. During construction, sediment control devices will be used, if needed, to prevent sediment from moving off-site into the spring. Disturbed areas will be reseeded as soon as possible after construction. These measures should minimize impacts to the spring.

At the same meeting, your neighbors drinking source was located east of the proposed line and BPA confirmed that no disturbance will occur in this area.

BPA will continue to meet with you as the transmission line design is finalized.

Appendix C – Mitigation Action Plan

Reedsport-Fairview Transmission Project
Mitigation Action Plan

This Mitigation Action Plan identifies mitigation measures that BPA has committed to for the Reedsport-Fairview Transmission Project. All measures were identified in the Environmental Assessment. They have been developed in coordination with environmental specialists, design and construction engineers, and maintenance personnel.

Most of the information contained in this plan will be included in the construction specifications for the project. Unless noted in the plan, the construction inspector or line foreman would be responsible for implementing the mitigation with help from environmental staff. Environmental staff would monitor the area for mitigation effectiveness.

Right-of-way clearing and construction could begin in fall 1999. If you have questions about the Mitigation Action Plan, please contact Nancy Wittpenn at (503) 230-3297. If you have general questions about the project, including the construction schedule, please contact Lou Driessen at (503) 230-5525.

Resource Category	Mitigation
Land Use	• Right-of-way through Edmonton's First Addition has been aligned in a north–south direction to minimize the number of lots affected by new right-of-way. • BPA would compensate landowner(s) for lots within Edmonton's First Addition acquired for new right-of-way. • BPA would enter into negotiations with landowners for new right-of-way needed. Fair market value would be paid to landowners based on the appraisal process.
Socioeconomics	• Compensate landowners for timber removal.
Visual Resources	• In the area of new right-of-way, minimize the height of new structures and the width of new right-of-way to minimize clearing and reduce visual impact. • Use non-specular conductors and dark-colored insulators to help reduce visual contrast with existing visual resource qualities in the area.
Recreation	• Dark-colored materials should be used for new transmission structures. Dark wood poles, steel cross-arms treated to appear weathered, and brown or black insulators would better match the background colors of this largely forested area.

Soils and Geology	• Minimizing disturbance and erosion is a concern at all transmission structure erection sites, construction staging areas, and where access roads would be modified or improved. By following best management practices, impacts would be reduced or eliminated at all sites. Best management practices include: • Proper design of road drainage systems and culvert placement helps to control runoff and erosion. An integrated system of collection, control, and dispersion of concentrated runoff would be installed to prevent erosion on fill slopes, road surfaces, and natural slopes below cross drains and culverts. • Cuts and fills are susceptible to erosion and should be reseeded promptly following construction. • Seeding, mulching, benching, and compacting the soil can reduce erosion on cuts and fills. To minimize erosion, disturbed areas should be returned to their original contour and promptly seeded with a herbaceous seed mixture suited to the site. • Sediment barriers and other suitable erosion and runoff control devices would be installed where needed to minimize off-site movement of sediment. • When practical, construction activities would be avoided when soil is wet to reduce soil compaction, rutting, and resulting loss in soil productivity. • If construction is done by BPA maintenance crews, environmental staff will meet with crews and engineering staff to help determine the type and best placement of suitable

	erosion and runoff control devices.
Vegetation	• Minimize clearing and blading to the fullest extent possible. • Restrict vehicles to access roads only. • Immediately after construction, revegetate any areas where low-growing vegetation is severely damaged. • To reduce noxious weed infestation, wash vehicles and all earth-moving equipment at established wash stations before entering and leaving project sites to avoid spreading noxious weeds.
Wetlands	• Locate structures and spur roads in upland. • Alders that may need to be cut down in a forested wetland could be left on the ground for wildlife habitat as long as they did not impede the flow of water in the wetland (consult BPA wetland specialist). • Use erosion control devices when constructing in areas adjacent to or uphill from a wetland to ensure soil is not washed downhill during storm events. • Disturbed areas should be reseeded promptly upon completion of construction. • Clearing should be kept to a minimum in or near wetlands. • Limit disturbance to the minimum necessary when working in and immediately adjacent to wetlands. • Locate staging areas outside of wetlands. • Delineate wetlands before final design and flag for avoidance during construction.

Wetlands continued	• If excavation occurs in a wetland, stockpile wetland topsoil and redeposit soil in place for restoration following construction.
Floodplains	• To mitigate impacts to floodplains, structures and spur roads should be located outside the floodplain where possible. • All construction or clearing debris should be removed from within floodplain boundaries.
Water Quality	Because of the interrelationship between soil erosion and surface water quality, successful implementation of runoff and erosion controls is important in protecting water quality. Standard mitigation would implement the measures best suited to each individual location to eliminate or reduce erosion and runoff and stabilize disturbed areas. A number of measures would be used alone or in combination and include but are not limited to: • Use BPA standard erosion practices along with other measures determined necessary to eliminate or minimize water quality impacts. • Use sediment barriers such as straw bales or silt fences where needed to prevent off-site movement of sediment. • Seed disturbed areas immediately after construction with a seed mixture suited to the site. Areas include sites disturbed during construction of transmission structures, and areas where construction activities have affected vegetation next to streams or wetlands.

Water Quality continued	• Limit traffic across wet soils susceptible to rutting. • Cross streams at existing crossings. • Design and install culverts or other structures at stream crossings so that there is unobstructed stream flow and minimal change to the streamcourse. • Time construction activities to reduce erosion by conducting operations during minimal runoff periods, if practical. • If roads must be used during wet periods, install a stable surface and sufficient drainage to allow such use with a minimum impact. Gravel may be necessary to protect some road surfaces and reduce erosion potential. • Use clean gravel for access road improvements near water bodies or wetlands. • Repair any stream bank damage and stabilize the site immediately following construction. • No solid materials, including building materials, would be discharged into waters of the United States unless authorized by a Section 404 permit of the Clean Water Act.
Cultural Resources	• In the unlikely event that cultural resources are uncovered during construction, work in the immediate vicinity of the project would be halted, and BPA would consult with the Oregon State Historic Preservation Officer and a qualified archeologist.
Public Health and Safety	• Design the Proposed Actions to meet Oregon and BPA electric field standards.

Public Health and Safety continued	• Maintain safe clearances between trees and transmission lines to prevent fires and other hazards. • Bond all hardware to minimize risks including fire. • Design the line to meet Oregon State requirements for noise if it is placed next to the existing PacifiCorp 230-kV line. • Rectify any TV/radio interference caused by the proposed project.

Bonneville Power Administration

PO Box 3621 Portland, Oregon 97208-3621

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