Grand Coulee – Bell 500-kV
Transmission Line Project

Final

Environmental Impact Statement

Bonneville Power Administration
December 2002

Grand Coulee – Bell 500-kV Transmission Line Project

Final Environmental Impact Statement (EIS)
(DOE/EIS-0344)

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

Cooperating Agencies: U.S. Department of Interior, Bureau of Reclamation.

States Involved: Washington

Abstract: BPA is proposing to construct a 500-kilovolt (kV) transmission line that would extend approximately 84 miles between the Grand Coulee 500-kV Switchyard, near Grand Coulee Dam, and the Bell Substation, in Mead just north of Spokane. The new line would cross portions of Douglas, Grant, Lincoln, and Spokane counties. In addition to the transmission line, new equipment would be installed at the substations at each end of the new line and at other facilities. The proposed action would remove an existing 115-kV transmission line and replace it with the new 500-kV line on existing right-of-way for most of its length. Additional right-of-way would be needed in the first 3.5 miles out of the Grand Coulee Switchyard to connect to the existing 115-kV right-of-way. Since the mid-1990s, the transmission path west of Spokane, called the West of Hatwai transmission pathway, has grown increasingly constrained. To date, BPA has been able to manage operation of the path through available operating practices, and customer needs have been met while maintaining the reliability of the path. However, in early 2001, operations showed that the amount of electricity that needs to flow from east to west along this path creates severe transmission congestion. Under these conditions, the system is at risk of overloads and violation of industry safety and reliability standards. The problem is particularly acute in the spring and summer months because of the large amount of power generated by dams east of the path. Large amounts of water cannot be spilled during that time in order for BPA to fulfill its obligations to deliver power and maintain reliability standards that minimize risks to public safety and to equipment. BPA is considering two construction alternatives, the Agency Proposed Action and the Alternative Action. The Alternative Action would include all the components of the Proposed Action except a double-circuit line would be constructed in the Spokane area between a point about 2 miles west of the Spokane River and Bell Substation, a distance of about 9 miles. BPA is also considering the No Action Alternative.

This abbreviated final EIS consists of an introduction to the document, changes to the draft EIS, copies of all the comments received on the draft EIS, and Bonneville's written responses to the comments. The final EIS should be used as a companion document to the draft EIS (dated August 2002), which contains the full text of the affected environment, environmental analysis, and appendices.

Bonneville expects to issue a Record of Decision on the proposed project in January of 2003.

To receive additional copies of the Final EIS and/or Draft EIS:

Call BPA's document request line at 1-800-622-4520; record your name, address, and which document you would like.

You may access a Summary of the Draft EIS on BPA's web site at http://www.bpa.gov/; look for environmental analysis, Active Projects; or

Write to: Bonneville Power Administration
Communications Office - DM-7
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For information on DOE National Environmental Policy Act (NEPA) activities, please contact:

Carol Borgstrom, Director, Office of NEPA Policy and Compliance, EH-42, U.S. Department of Energy, 1000 Independence Avenue SW, Washington D.C. 20585, 1-800-472-2756; or visit the DOE NEPA web site at http://www.eh.doe.gov/nepa.

Table of Contents

LIST OF FIGURES

LIST OF TABLES

Chapter 1
Introduction

This is the Final Environmental Impact Statement (EIS) for Bonneville Power Administration's (BPA) proposed Grand Coulee – Bell 500-kV Transmission Line Project. This document has been prepared as an "abbreviated" Final EIS pursuant to the Council on Environmental Quality's (CEQ) National Environmental Policy Act (NEPA) regulations because there have been no substantial changes to the proposed action, alternatives, or environmental analysis presented in the Draft EIS for this project. Consistent with 40 C.F.R. 1503.4(c), this abbreviated Final EIS provides comments received on the Draft EIS, agency responses to these comments, and changes made to the text of the Draft EIS. This Final EIS should be used as a companion document to the Draft EIS (dated August 2002), which contains the full text of the affected environment, environmental analyses, and appendices. For readers of this Final EIS who do not already have a copy of the Draft EIS, copies of the Draft EIS may be obtained by:

- Calling BPA's document request line at 1-800-622-4520; or
- Sending an e-mail to Inez Graetzer at isgraetzer@bpa.gov; or
- You may access a Summary of the Draft EIS on BPA's web site at http://www.bpa.gov/; look for environmental analysis, Active Projects.

The remainder of this Introduction provides an overview of the proposed action and alternatives, the lead and cooperating agencies, the comment period for the Draft EIS, and key changes to the Draft EIS. Chapter 2 of this Final EIS identifies the specific changes that have been made to the text of the Draft EIS, and Chapter 3 identifies changes to Draft EIS tables and figures. Chapter 4 presents comments received on the Draft EIS (organized by the chapters and sections of the Draft EIS), as well as agency responses to these comments. Chapter 5 includes copies of comment letters, e-mails, telephone logs, and meeting summaries received on the Draft EIS.

Summary of the Proposed Action

BPA proposes to construct a new 500-kilovolt (kV) transmission line between the Grand Coulee 500-kV Switchyard near Grand Coulee, Washington, and Bell Substation near Spokane, a distance of 84 miles (see Figure 2-2). The proposed action involves removing an existing 115-kV transmission line (Grand Coulee – Bell No. 1 line) and replacing it with a 500-kV transmission line. BPA would construct a single-circuit 500-kV transmission line over most of the route between the end points or terminations. A double-circuit transmission line would be constructed for short distances (slightly less than one mile) where the right-of-way is constrained.

The new transmission line would be located primarily in an existing BPA corridor. The existing corridor, over most of its length, has five transmission lines on four sets of structures. To make room for the new transmission line, BPA would remove its Grand Coulee-Bell No. 1 115-kV wood pole transmission line and replace it with the 500-kV line on new lattice steel towers.

A new single-circuit tower design for the lattice steel towers would be used for the project. The typical height of the towers would be 125 to 150 feet although the height of each tower would vary with location and surrounding landforms. In most cases, the towers would be placed adjacent to existing double-circuit 230-kV steel towers in the corridor. The double-circuit 500-kV towers to be used for the short sections where the corridor is constrained would typically be 175 feet tall. About five structures per mile would be used to match the spans of the existing 230-kV steel towers in the right-of-way. About 420 towers would be needed.

At Bell Substation, BPA would expand the existing fenced yard by about 11.7 acres to make room for new line termination facilities and other equipment. Existing BPA property would be used. The Grand Coulee Switchyard would also need to be expanded, but only slightly, because there is insufficient space within the existing yard. To accommodate a new bay with two circuit breakers, a shunt reactor and breaker, and associated equipment, the fence would be extended out approximately 10 feet across the existing service road on the east and south sides.

Construction is scheduled to begin in January 2003 and be completed by November 2004. Temporary staging areas (four at about 2 acres each) would be needed along or near the proposed transmission line to store materials and trucks. Access to tower sites for construction and maintenance would take place mainly within the right-of-way. It would consist of making improvements to existing roads, and constructing new roads and spurs to individual tower sites. A total of about 24 miles of new permanent access roads or road improvements would be needed.

After construction, maintenance crews would be responsible for managing vegetation. No tall-growing vegetation would be allowed to grow inside the right-of-way except for vegetation in deep canyons where it will not interfere with the much higher conductor. BPA would develop maintenance criteria consistent with its Transmission System Vegetation Management Program.

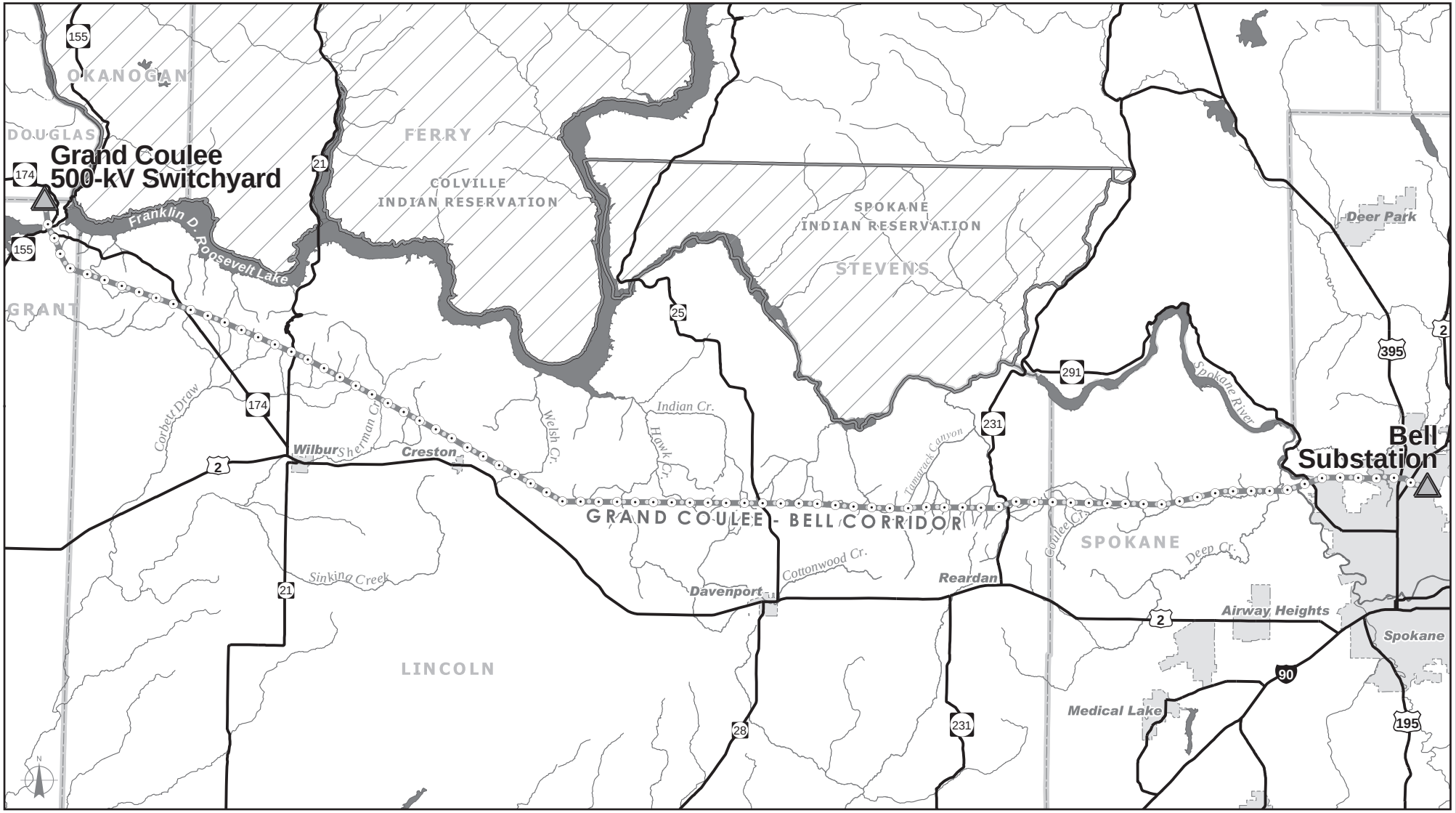
Summary of Alternatives

Alternative Action

BPA has considered a second construction alternative. It would include all the components of the Proposed Action except a double-circuit line would be constructed in the Spokane area between a point about 2 miles west of the Spokane River and Bell Substation, a distance of about 9 miles. The purpose of this alternative would be to anticipate and provide for potential unknown future transmission needs without needing to find a new route out of the Bell

GRAND COULEE - BELL 500-kV TRANSMISSION LINE PROJECT

LOCATION MAP



Map Location

Grand Coulee-Bell Corridor

Mile Marker

Substation or Switchyard

Major Road

COUNTY BOUNDARY

Indian Reservation

City or Town

0 2 4 8 12 16 Miles

0 3 6 12 18 Kilometers

SCALE 1:485,000

Data Source: U.S.G.S Digital Line Graphs,
Bonneville Power Administration Regional GIS Database.

FIGURE 2-2

Back of Figure 2-2 page [left intentionally blank]

Substation for another 500-kV line at a later date if the need should arise. Both sides of the towers would be strung with conductors and connected to operate as a single-circuit line; it would be available for a second circuit at some unknown future date.

No Action Alternative

Under the No Action Alternative, the proposed project would not be built. This alternative assumes the following scenario:

- BPA would not build a new transmission line to solve the transmission capacity and reliability problems that have been identified and that would help it to continue to meet its statutory and contractual obligations, nor would another entity.
- The amount of power that needs to be transferred from east to west would not diminish and probably would increase.
- Requirements to protect ESA-listed fish would not change, so dams in Montana would continue to generate power at current levels.

Lead and Cooperating Agencies

BPA is the lead federal agency on this project and supervises the preparation of the EIS. The proposed project crosses land managed by the U.S. Department of Interior, Bureau of Reclamation (BOR) at Grand Coulee Dam, and the western end of the proposed line terminates at BOR's Grand Coulee Switchyard. BOR thus has agreed to cooperate in the EIS process.

Draft EIS Comment Period

The Draft EIS was issued on August 9, 2002. BPA notified 1,100 interested or affected governments, agencies, organizations, and individuals that the Draft EIS was available. In total, 284 Draft EISs and 56 EIS Summaries were distributed.

BPA also posted the Draft EIS Summary on its website, sent a news release to media in the project area announcing availability of the Draft EIS and how to request a copy, and published a notice in the monthly *BPA Journal* that is mailed to customers and others interested in the agency's work.

Four open house-style meetings were held in September 2002 at the following dates and locations:

- Coulee Dam, WA – September 4
- Davenport, WA – September 5
- Spokane, WA – September 6 and 9

BPA contacted the public, property owners, local governments, various agencies and public interest groups to invite them to the public meetings and to offer opportunities for one-on-one discussion concerning the Draft EIS. BPA discussed the project with them by phone and/or met with them in person. BPA also met with local elected officials, neighborhood groups, the business community, Whitworth College, county and city planning departments, state agencies, and representatives from the environmental community whenever requested.

The comment period officially closed on September 23, 2002. Comment letters, e-mails, and forms are printed in this Final EIS.

Key Changes to the Draft EIS

The principal changes that have been made to the Draft EIS center on: (1) updated vegetation information to reflect a plant survey that was completed, a reclassification of vegetation types, and associated revisions to the text; and (2) updated public health and safety information to reflect different electrical phasing for a section of the transmission line. Please see Chapter 2 for a complete description of all changes to the Draft EIS.

Chapter 2
Changes to Draft EIS Text

Summary

Proposed Action and Alternatives

Page S-5, Line Termination Facilities, the paragraph has been modified as follows:

At Bell Substation, BPA would expand the existing fenced yard by about 11.7 acres to make room for new line termination facilities and other equipment. The expansion would include three bays with six circuit breakers, one group of series capacitors, a new control house, and associated equipment. Existing BPA property would be used. The Grand Coulee Switchyard would ~~not~~ also need to be expanded, but only slightly, because there is insufficient space within the existing fenced yard. To ~~to~~ accommodate a new bay with two circuit breakers, a shunt reactor and breaker, and associated equipment, the fence would be extended out approximately 10 feet across the existing service road on the east and south sides.

Page S-5, new text has been added after paragraph 2 as follows:

Outside of the project area, one group of series capacitors would need to be installed on an expanded site at the Dworshak 500-kV Substation, and existing series capacitors would need to be replaced within the current boundary of the Garrison 500-kV Substation.

Affected Environment, Environmental Consequences, and Mitigation

Public Health and Safety

Page S-14, bullet item 3 in Environmental Consequences has been modified as follows:

- Potential for health effects from magnetic fields in rural, residential, and business areas would be minimal ~~or~~ due to sparse population or field levels off the right-of-way that would decrease or would not change from the current condition ~~(except for 0.6-mile section where a slight increase would be expected outside of the right-of-way)~~. The overall level of impacts would be low except for the short section of the line that crosses a commercial area, where the level would be moderate to high.

2 Changes to Draft EIS Text

Page S-16, bullet item 5 has been modified as follows:

- ~~During construction, follow BPA specifications for grounding fences and other objects on and near the proposed right-of-way.~~ After construction, BPA would respond to any complaints and install or repair grounding to mitigate nuisance shocks.

Page S-11, bullet item 12 has been modified as follows:

- Consistent with land use plans and zoning~~;~~, except for double-circuit towers and those with longer spans that likely would exceed height restrictions in City of Spokane and Spokane County.

Cultural Resources

Page S-19, Affected Environment bullet item 5 has been modified as follows:

- A 2002 Survey of the substation expansion area and vicinity resulted in the identification of two historic-period cultural resources; one is within the substation expansion area. Further evaluation indicated the sites have no historical significance.

Page S-19, Environmental Consequences bullet item 3 has been modified as follows:

- ~~High potential effect on historic site~~ No effect on cultural resources at Bell Substation.

Wetlands

Page S-27, bullet item 2 has been modified as follows:

- Most of the wetlands in the corridor are in ~~excellent~~ poor to good condition. ~~and vegetated primarily with native species.~~ Many have been affected by on-going cattle grazing and trampling. They are vegetated primarily with native species, although some of these wetlands have been invaded by reed canarygrass, Canada thistle, and other weeds.

Vegetation

Page S-28 and S-29, Affected Environment, all bullets have been modified as follows:

- Four major vegetative communities were identified along the corridor using land use information: ~~(~~agricultural lands (50 percent), ~~grass/forb and lithosol (3 percent),~~ shrub-~~/~~steppe, lithosol and prairie (23~~0~~ percent), and forest/deciduous shrubland (25 percent). Other relatively non-vegetated areas (2 percent) in the project area include rocky outcrops, and disturbed areas such as gravel pits and~~,~~ open water.

- Lithosol~~Grass/forb~~ communities have stony soils and are extremely shallow to bedrock. Within much of the project area, lithosols do not cover large areas but form a patchy mosaic with shrub-steppe. These lithosol patches are often much less than an acre. ~~grow mainly within channelized scablands, where the topography is characterized by a series of small mounds, usually less than 50 feet in diameter, with intervening low lying areas, often lithosols.~~

- The shrub-~~-~~steppe community is found mainly on channelized scablands common i~~across~~ n the western portion of the corridor from the Grand Coulee Switchyard to near the town of Creston. Shrub-steppe is characterized by deep soils, a significant cover of perennial grasses, and the presence of big sagebrush.

- What is often referred to as a prairie in this region is also known as meadow steppe. Prairies have deep soils, conspicuous (but discontinuous) layers of shrubs and a high proportion of broad-leaved forbs. They also have a high diversity and cover of grasses and forbs, and lack sagebrush species.

- The forest and deciduous shrubland community ~~typically~~ occupies long stretches of forested areas in the eastern third of the corridor, and~~occurs as~~ scattered patches within agricultural areas, along drainages and in canyons. Most trees have been removed from within the transmission line corridor.

- USFWS ~~has~~ identified three federally l~~-~~isted threatened species, Ute l~~L~~adies'-tresses (*Spiranthes diluvialis*), Spalding's silene~~catchfly~~ (*Silene spa~~ap~~ldingii*), and h~~H~~owellia (*Howellia aquatilis*) as having potential habitat present within the project corridor. A survey of the corridor identified potential habitat for ~~Ute ladies'-tresses and Spalding's catchfly~~ all three federally listed species. Some of the wetlands within the project area are potential habitat for Ute ladies'-tresses and howellia. Potential Spalding's silene~~catchfly~~ habitat is present within ~~some~~ portions of the ~~forest/deciduous shrub~~ prairie community, as evidenced by the presence of many of the species with which it is normally associated ~~with~~.

- Rare plant surveys were conducted in the project area in August 2002. No federally listed species were located in the project area. However, the survey documented the presence one small population of the federally threatened species Spalding's silene near, but not in the project area. It is in Lincoln County on private land within the BPA corridor. With proper mitigation and avoidance, construction and maintenance of the proposed project should not impact the Spalding's silene population.

- ~~Some w~~Weed~~s~~ species and general locations of infestations were noted in the project area during fieldwork in~~the summer of~~ 2002. ~~and a comprehensive weed survey will be conducted prior to construction. Weeds of concern within the project area~~ Noxious

weeds observed in the transmission line corridor include Canada thistle, common tansy, Ddalmatiaon toadflax, diffuse knapweed, perennial sowthistle, and common St. John's wort, rush skeletonweed, kochia, sulfur cinquefoil, puncturevine, spotted knapweed, common bugloss, jointed goatgrass, and leafy spurge. A comprehensive weed survey will be conducted prior to construction.

Page S-29, last bullet item has been modified as follows:

- A biological assessment analyzing the effects of the project on federally-listed threatened and endangered species will behas been conducted pursuant to Section 7 of the Endangered Species Act. The BA has concluded that the proposed project may affect but is not likely to affect Spalding's silene or Ute ladies'-tresses, and would have no effect on Howellia. The BA will be submitted to the U.S. Fish and Wildlife Service for their concurrence.

Page S-30, bullet item 3 has been modified as follows:

- ANative steppe diversity of native species and plant communities persist in the transmission line corridor despite the operation and maintenance of four transmission lines there. Thus, new transmission facilities within this already disturbed existing corridor would likely affect some habitat, but would not be expected to have a substantial impact on plant biodiversity.and shrub/steppe communities have declined substantially in recent years; however, such undisturbed plant communities are essentially absent from the corridor. The evidence supporting this conclusion is the presence of a diversity of native species that have persisted in the corridor despite the operation and maintenance of four transmission lines.

Page S-30 and S-31, Mitigation, bullet items 4 through 6 have been modified and additional bullets added as follows:

- Reseed or revegetate disturbed areas following construction with native vegetation. During a typical year, July may be the most favorable time for grass seed collection for revegetation purposes.

- Conduct a pre- and post-construction noxious weed inventory to gather baseline information and determine the need for develop a noxious weed control plan.

- Control noxious weed infestations by cleaning equipment traveling in and out of noxious weed-infested areas, using herbicide or biocontrol treatments, and reseeding disturbed areas with native species.

- AIf federally listed plant species are identified during the plant survey, these areas would be avoided, if possible. A Biological Assessment, as required under the

Endangered Species Act, ~~would be~~has been produced that provides detailed actions to reduce or eliminate impacts on listed species. BPA would implement any reasonable measures recommended by the U.S. Fish and Wildlife Service to reduce or avoid impacts. ~~and detailed actions to reduce or eliminate impacts on listed species would be discussed.~~

- BPA would assist and cooperate with concerned landowners and county weed boards to implement noxious weed control measures.

- The Spalding's silene population adjacent to the project area will be staked prior to any construction activity within the project area to protect it from unforeseen casual impact. The stakes will include a buffer area and will indicate the presence of a sensitive area.

- BPA will limit construction activities in the high quality plant communities between corridor miles 32 and 36 to the times of year that cause the least amount of damage, whenever practicable. This would be during winter when the ground is frozen or late fall when the plants are senescent and the ground is dry.

- The potential population of the state sensitive species Nuttall's pussy-toes in Riverside State Park will be verified during a follow-up survey in May or June 2003.

- Information on rare plant occurrences will be given to BPA maintenance personnel to be considered during the planning and implementation of future maintenance activities. The location of rare plant occurrences will be placed on BPA maps and documents so that maintenance personnel are aware of their location. A written description of restrictions, precautions or special procedures within rare plant habitat will be attached to maps and documents for that area.

- Within the buffer area for rare plant populations, the procedures used to control weeds will be restricted to those that minimize harm to rare plant species, such as hand-pulling weeds. Specific control methods to protect rare plant populations will be included in vegetation management planning for the corridor.

- Because the transmission line corridor passes through several miles of high potential habitat for Spalding's silene, a new rare plant survey conducted at the appropriate time during the growing season will precede any future ground-disturbing activities in the corridor.

2 Changes to Draft EIS Text

Page S-31, Environmental Consequences, add third bullet as follows:

- A biological assessment analyzing the effects of the project on federally-listed threatened and endangered species has been conducted pursuant to Section 7 of the Endangered Species Act. The BA has concluded that the proposed project would have no effect on bull trout nor would it result in the destruction or adverse modification of proposed critical habitat. The BA will be submitted to the U.S. Fish and Wildlife Service for its concurrence.

Page S-33, Wildlife, sixth bullet item is modified as follows:

- USFWS has identified ~~two~~ one federally-listed species as potentially occurring in the area: bald eagles, listed as threatened. ~~, and the pygmy rabbit, listed as endangered.~~ No habitat for bald eagles exists in the corridor. The pygmy rabbit was listed as endangered on a one-year emergency listing that expired in July 2002. The USFWS is currently reviewing the proposed listing of the Columbia Basin Distinct Population Segment of the pygmy rabbit as an endangered species. Although portions of the corridor are comprised of the shrub--steppe habitat preferred by pygmy rabbits, no known populations exist within the corridor. The USF&WS informed BPA that this area is well outside the historic range of the pygmy rabbit and, therefore, would fall outside the area of consideration for listing of the species (Warren, 2002). The closest historic population range of the pygmy rabbit in Lincoln County is in the southwestern corner of the county. The Washington ground squirrel and the western sage grouse are also proposed for listing. The distributions of these species do not overlap with the project area.

Page S-34, add bullet after bullet item 3:

- A biological assessment analyzing the effects of the project on federally-listed threatened and endangered species has been conducted pursuant to Section 7 of the Endangered Species Act. The BA has concluded that the proposed project may affect, but is not likely to affect, bald eagles and would not jeopardize pygmy rabbits, Washington ground squirrels, or western sage grouse. The BA will be submitted to the U.S. Fish and Wildlife Service for its concurrence.

Page S-35, add bullet after bullet item 2:

- A biological assessment, as required under the Endangered Species Act, has been produced that provides detailed actions to reduce or eliminate impacts on listed species. BPA would implement any reasonable measures recommended by the U.S. Fish and Wildlife Service to reduce or avoid impacts.

Proposed Action and Alternatives

Line Termination Facilities

Page 2-5, fourth paragraph has been modified as follows:

A substation contains different kinds of equipment to carry out electrical operations and maintenance, and to minimize risks to workers. At Bell Substation, BPA would expand the existing fenced yard to make room for the new line termination facilities and other equipment. The expansion would encompass about 11.7 acres at the south end of the substation that would include three bays with six ***circuit breakers***, one group of ***series capacitors***, a new control house, and associated equipment. Existing BPA property would be used. ~~The Grand Coulee Switchyard would not need to be expanded because there is space within the existing fenced yard to accommodate a new bay with two circuit breakers, a ***shunt reactor*** and breaker, and associated equipment.~~ The Grand Coulee Switchyard would also need to be expanded, but only slightly, because there is insufficient space within the existing yard. To accommodate a new bay with two circuit breakers, a ***shunt reactor*** and breaker, and associated equipment, the fence would be extended out approximately 10 feet across the existing service road on the east and south sides. The following equipment would be installed at Grand Coulee Switchyard and Bell Substation:

Additional Features of the Proposed Action

Page 2-8, new text has been added after paragraph 1 as follows:

The activity would consist of replacing the current series capacitors with ones of higher amperage rating so that they can fully support the proposed project.

Construction

Page 2-12, second paragraph has been modified as follows:

The conductors would be strung from tower to tower through pulleys on the towers. After transmission towers are in place, workers would first attach a smaller steel cable to the towers; a helicopter may be used for this purpose. ~~t~~The cable would then be attached to the conductor, ~~then~~ and the workers would pull the conductor under tension through the towers. Conductors would be attached to the tower using glass, porcelain, or fiberglass insulators, as noted previously. As the lines are strung, the ground surface would be disturbed at the tensioning sites, and noise and dust would be generated by equipment. Tensioning sites would occupy approximately 1 acre and would be needed approximately every 2.5 miles. There would be at least 34 tensioning sites for a total of 34 acres.

Page 2-22, new text has been added after paragraph 3 as follows:

Agency Preferred and Environmentally Preferred Alternatives

The BPA preferred and environmentally preferred alternatives are as follows:

- The BPA preferred alternative is the Agency Proposed Action of removing an existing 115-kV transmission line (Grand Coulee-Bell No. 1 line) and replacing it with a 500-kV transmission line. BPA would construct a single-circuit 500-kV transmission line over most of the route between the terminal at the Bureau of Reclamations' existing Grand Coulee Switchyard and BPA's existing Bell Substation. A double-circuit transmission line would be constructed for short distances where the right-of-way is constrained between corridor mile 73/1 (mile 73, structure 1) and corridor mile 73/4, and between corridor mile 83/1 and corridor mile 83/6 just northwest of Hawthorne Road in the north Spokane area. Combined, the two double-circuit segments amount to slightly less than one mile of transmission line. Outside of the project area, one group of series capacitors would be installed on an expanded site at BPA's Dworshak 500-kV Substation, and existing series capacitors would be replaced within the current boundary of BPA's Garrison 500-kV Substation.

- The No Action Alternative (not to construct the proposed line) is the environmentally preferred alternative.

Affected Environment, Environmental Consequences, and Mitigation

Land Use

Page 3-6, new text has been added after paragraph 2 as follows:

In addition, there are possible plans to develop a mixed use center north of the corridor between Corridor mile 83/1 and 83/3.

Public Health and Safety

Page 3-28 and 3-29, Impact Levels section has been modified as follows:

Impact levels are dependent on public and occupational use of the land. The potential for public health and safety impacts increases in areas where human activities take place. The level of impact is dependent on the number of persons affected and on the following:

· A **High Impact** would occur if the new line precludes the use of the ROW or nearby areas for pre-existing activities.

· A **Moderate Impact** would occur if the new line alters pre-existing ROW activities on or near the ROW.

· A **Low Impact** would occur if the new line would not produce a change in ROW activities on or near the ROW.

Page 3-29, last paragraph has been modified as follows:

Short-term effects and the levels of electric and magnetic fields near the proposed transmission lines are discussed below and in detail in Appendix B-1, *Electrical Effects*. A review of recent studies and their implications for health-related effects is provided in a separate technical report, Appendix B-2, *Assessment of Research Regarding EMF and Health and Environmental Effects*. In addition, the Department of Energy provides a booklet on this topic (Questions and Answers about EMF published in ~~1995~~2002 [http://www.niehs.nih.gov/emfrapid/booklet/home.htm]).

Page 3-31, bullet item 3 has been modified as follows:

- **Configuration 3:** About 75 miles of the right-of-way are represented in Configuration 3 (see Figure 3-7). This configuration would be located from the plateau south of the City of Grand Coulee to a point about 600 feet west of Indian Trail Road in Spokane, Washington (corridor mile 3/8 to 78/6). ~~This~~ Most of this segment of line is sparsely populated. For this configuration, the proposed single-circuit line would be entirely within the existing Grand Coulee-Bell right-of-way. This configuration has three sections with different electrical phasing for the proposed line.

Page 3-34, third and fourth paragraphs have been modified as follows:

For Configurations 3 through 10, the addition of the proposed line would reduce or not significantly change the electric field at the edge of the right-of-way of the Grand Coulee – Bell corridor compared to the electric field from the existing lines. However, for these configurations, the peak electric fields on the right-of-way would increase from the levels associated with 115-kV lines (1.4 kV/m) and 230-kV lines (2.9 – 3.4 kV/m) to those associated with the proposed 500-kV line (7.4 – 8.9 kV/m).

For Configurations 3 through 10, the addition of the proposed line would reduce or not significantly change the magnetic field at the edge of the right-of-way with ~~three~~ four exceptions. There would be a maximum increase of 9 mG at the south edge of the right-of-way in Configuration 3-West (22 miles), a maximum increase of 15 mG at the south edge of

Configuration 3-Middle (24 miles), a maximum increase of 9 mG at the south edge of Configuration 4 (0.68 miles), and a maximum increase of 5 mG at the north edge of the right-of-way in Configuration 10. For these configurations, peak magnetic fields on the ROW would increase or decrease depending on the configuration. Peak fields for the proposed action single-circuit configurations tend to be higher than those for the no-action alternative, while peak fields for the alternative action double-circuit configurations are lower than those for the no action alternative. Plots of magnetic field versus distance from the line for the configurations in the proposed action are shown in Figures 3-7 to 3-11. Magnetic fields from the alternative action configurations with double-circuit structures (Configurations 5, 7, and 9) are shown in Figures 3-12 to 3-14.

Page 3-39, Summary chart Configuration 3 heading has been modified as follows:

3 a,b,c

Page 3-41, eleventh bulleted item has been modified as follows:

- ~~During construction, follow BPA specifications for grounding fences and other objects on and near the proposed right-of-way.~~ After construction, BPA would respond to any complaints and, if necessary, provide assistance to install or repair grounding to mitigate nuisance shocks.

Socioeconomics

Page 3-84, Property Taxes, new text has been added after paragraph 1 as follows:

Sales of privately owned property to BPA for transmission line or access road right-of-ways would not be subject to real estate tax. This is based on WAC 458-61-420 (1) (c), which states that excise tax does not apply to "Transfers to the United States, the state of Washington or any political subdivision thereof, or a municipal corporation, either under threat of eminent domain or as a result of the actual exercise of eminent domain."

Wetlands

Page 3-111, last paragraph, and page 3-112, first and second paragraphs, have been modified as follows:

Some wetlands in this area are locally important because they function as a source of water in an arid environment. Isolated wetlands are particularly valuable to waterfowl and migratory birds and also provide habitat for resident birds, amphibians, and reptiles. Two large wetland complexes (Wetlands 26 and 30), located in corridor mile 40, are permanently flooded wetlands, providing important wildlife habitat. Dominant vegetation in these wetlands

includes tule, spike-rush, western blue flag iris, Wood's ~~Nootka~~ rose, snowberry, and quaking aspen.

Riparian wetlands occur along Coulee Creek, the Spokane River, Spring Canyon, and along a perennial seep near Squaw Creek. Typical riparian wetlands are dominated by aspen, Wood's ~~Nootka~~ rose, and red-osier dogwood associated with various herbaceous species. The Squaw Creek spring supports a scrub/shrub wetland dominated by willow, W~~Nootka~~ood's -rose, and wax currant.

Most wetlands in the corridor are ~~undisturbed and in excellent~~ in poor to good condition. Many have been affected by on-going cattle grazing and trampling. They are vegetated primarily with native species, although some of these wetlands have been invaded by reed canarygrass, Canada thistle, and other weeds. Some wetlands were previously disturbed when the existing access roads were constructed, some of which go through the edge of wetlands. It is possible that the construction of some access roads enlarged wetlands due to the barrier that the road imposed to the flow of surface waters.

Vegetation

Page 3-119, third paragraph has been modified as follows:

The distribution of plant communities along the corridor, based on land use information, is shown in Figure 3-38. These vegetation communities include agricultural lands, ~~grass/forb, shrub/steppe~~shrub-steppe, prairie, lithosol, and forest/deciduous shrubland and are described below. Relatively non-vegetated areas in the project area include some lithosol (areas with rocky soils), rock outcrops, open water, and disturbed areas such as gravel pits. The approximate acres of the major vegetation communities within the corridor are shown in Table 3-17. Table C-2a in Appendix C has a list of plant species mentioned in the EIS text by common and scientific name. A list of plant species ~~identified~~ observed during field visits in ~~June of~~ 2002 is shown in ~~Appendix C (~~Table C-2b~~)~~.

Pages 3-120 through 3-122, subsections on *Agricultural Lands, Grass/Forbs, Lithosols, Shrub/Steppe*, and *Forest and Deciduous Shrub* have been modified as follows (please note that shrub/steppe is corrected to be shrub-steppe):

Agricultural Lands

Approximately one-half of the corridor is in agricultural production. Dryland wheat farms, fallow fields, and pasturelands compose the vegetation type from corridor miles 6/4 to 28/1, 43/4 to 52/1, and 54/9 to 66/4. Most unplowed areas adjacent to agricultural fields are vegetated primarily with non-native species such as jointed goatgrass, tumblemustard, and cheatgrass. These large tracts of cultivated land contain small remnants of generally low

quality ~~shrub/steppe~~shrub-steppe and forest/deciduous shrubland vegetation that provide important connections for plants and wildlife to native habitats outside the corridor.

~~Grass/Forbs~~

~~There are few areas without many woody species within the corridor. Because ponderosa pine were cut within the corridor, some grass and forb dominated areas within the corridor have woodlands on either side of the corridor and, therefore, are not true grasslands, i.e., areas that could not support the growth of tree species. Grass/forb communities grow mainly within channelized scablands, where the topography is characterized by a series of small mounds, usually less than 50 feet in diameter, with intervening low lying areas, often lithosols. The grass/forb community comprises about 121 acres (2 percent) of the corridor vegetation.~~

~~Dominant species within this vegetation type include cheatgrass and other weedy forbs. Other non-native species include brome, crested wheatgrass, knapweed, Russian thistle, Dalmatian toadflax, and common tumblemustard. Native species present in this community include giant wildrye, various buckwheat species, and occasional shrubs including sagebrush and wax current. The scientific name of all species mentioned in the text can be found in Table C-2 in Appendix C.~~

Lithosols

Lithosol communities are those where soils are stony and extremely shallow to bedrock (Franklin and Dyrness 1973). Within the project area, lithosols typically range from low to moderate ecological quality. The most common plant association in the lithosol is stiff sagebrush/ Sandberg's bluegrass (Daubenmire 1970). Some lithosol areas have very low to almost no cover of shrubs and are considered the lithosol phase of bluebunch wheatgrass/ Sandberg's bluegrass plant association (Daubenmire 1970). Dominant shrub species in lithosol include: stiff sagebrush, thyme buckwheat, snow buckwheat, and Hood's phlox. Dominant grasses are Sandberg's bluegrass, squirreltail grass, Thurber's needlegrass and bluebunch wheatgrass. Conspicuous native forbs on lithosols include flameflower and bitterroot. Weed species are not a prominent component of lithosol communities, with cheatgrass and Japanese brome as the most common species. Lithosol communities are often very attractive during the spring blooming period.

Lithosol communities tend to occur on topographical highpoints, which is where many towers are located. Within much of the project area, lithosols do not cover large areas but form a patchy mosaic with shrub-steppe. These lithosol patches are often much less than an acre. At many structures, there is a mix of lithosol and shrub-steppe. This mosaic gives the overall area an appearance of mound/swale topography. The plant community transition between shrub-steppe and lithosol is typically quite abrupt. ~~Lithosol communities occur in areas with rocky soil, usually in areas underlain with basalt. A distinctive plant community~~

~~develops with few shrubs and a wide diversity of forbs associated with only a few grass species, primarily bluegrass species.~~ ~~Stiff sagebrush is the dominant shrub in lithosol areas. Forbs include the species found in shrub/steppe but with more diversity and at a greater density so that these communities are very attractive during spring blooming period. Weed species are not very abundant in lithosols, with cheat grass as the most common species.~~

Other rocky areas within the corridor resemble basalt flows, because there is little to no topsoil over the basalt bedrock~~, which extends over the landscape~~. Most of t~~T~~he ~~only~~ plant life in these areas survives in cracks in the rock. ~~Very few plant species are able to survive in this harsh environment. Bitterroot is common in some areas. Stonecrop and fameflower were only observed within this plant community.~~ It is difficult to calculate the area of the corridor covered by lithosol and other rocky areas due to their generally small size~~s~~ and patchy distribution. ~~However,~~ T~~t~~his community comprises a substantial ~~only a small~~ percentage of the proposed project corridor (Table 3-17).

~~Shrub/Steppe~~Shrub-steppe

The ~~shrub/steppe~~shrub-steppe community covers about 807 acres (20 percent) of the of the project area. ~~Shrub/steppe~~Shrub-steppe communities are scattered throughout the project area, although most of them ~~occur~~ occur i~~across~~ n the western h~~portion~~ alf of the corridor from the Grand Coulee Switchyard to the corridor section near the town of Creston. This vegetation community is found mainly within the~~on~~ channelized scablands ~~and is dominated by shrubs, primarily sagebrush, with a grass and forb understory~~. Channelized scablands, as described under Soils and Geology, are a unique geologic feature in the Columbia River Basin that supports unique plant communities.

Shrub-steppe is characterized by deep soils, a significant cover of perennial grasses, and the presence of sagebrush; typically big sagebrush. The most common shrub-steppe plant association in the project area is big sagebrush/ bluebunch wheatgrass. Dominant shrub species include: big sagebrush, gray rabbitbrush, serviceberry, bitterbrush and Wyeth's buckwheat. Dominant grass species include: bluebunch wheatgrass, Sandberg's bluegrass, western needlegrass, and Idaho fescue. Within shrub-steppe, areas dominated by deciduous shrubs like, serviceberry, snowberry, mockorange and wax currant tend to occur in moister areas, such as along waterways, near wetlands, and on north-facing slopes.

Within the project area, shrub-steppe varies from very low to moderate quality. Much of it has been degraded by on-going livestock grazing and trampling. In many places, the deep-soiled mounds of shrub-steppe are interspersed with lithosol patches forming a mosaic. These deep-soiled mounds are often very weedy with common St. John's-wort, tumblemustard, cheatgrass and Japanese brome. Other common shrub-steppe weeds are diffuse knapweed, common tansy and bulbous bluegrass.
~~The dominant sage species along the corridor are stiff sagebrush, with lesser amounts of big sagebrush. Other shrubs are present in some areas, such as bitterbrush and a variety of~~

~~deciduous shrubs, such as snowberry and wax currant. Within shrub/steppe, areas dominated by deciduous shrubs tend to occur in moister areas, such as along waterways, near wetlands, and on north-facing slopes.~~

~~A variety of grasses and forbs are found in shrub/steppe. Generally, the diversity of native species is high and the abundance of weed species is low. Native forbs include puccoon, wild onion, various buckwheat species, yarrow, phlox, flax, lupine, penstemon, arnica, various species of biscuit root, daisy, Oregon sunshine, and a variety of other species. Idaho fescue is the dominant native grass in this community although bluebunch wheatgrass and some bluegrass species are also found. Weedy forbs and grasses include diffuse knapweed, St. John's wort, cheat grass, and bulbous bluegrass.~~

Shrub-steppe and lithosol ~~This vegetation type~~ have~~s~~ not been affected very much by corridor maintenance activities, evidenced by the fact that~~e shrub/steppe community~~ within the corridor, these communities are ~~is~~ similar to those~~at~~ located outside the corridor.

Prairie

What is often referred to as a prairie in this region is actually a type of meadow steppe. Prairies have deep soils, conspicuous (but discontinuous) layers of shrubs and a high proportion of broad-leaved forbs (Franklin and Dyrness 1973). They also have a high diversity and cover of grasses and forbs, and lack sagebrush species. The following plant associations occur within prairie areas in the project area: Idaho fescue / common snowberry herbaceous shrub vegetation and Wyeth's buckwheat/ Idaho fescue shrub herbaceous vegetation. In both cases the native bunchgrass Idaho fescue is an important element of the plant association. Most of the native prairie in eastern Washington has been destroyed or degraded by a number of factors including grazing, agricultural conversion and fire suppression. Weeds in prairie areas are similar to those within the shrub-steppe.

The highest quality prairie in the project area is at Bachelor Prairie between Line Mile 32 and Line Mile 36. There are other prairie areas in an adjacent segment to the east, however most of these have been degraded by on-going cattle grazing and trampling. Often lithosol areas and Ponderosa pine parkland are interspersed with these areas. The ecotone between prairie and shrub-steppe is often gradual. The federally threatened plant species Spalding's silene occurs in prairie plant associations. ~~Some shrub/steppe areas have been converted to grasslands for grazing. Although cheat grass is fairly uniformly distributed throughout shrub/steppe, the other weedy species found in this community tend to occur more frequently along roadways.~~

Forest and Deciduous Shrubland

The forest and deciduous shrubland community covers about 1009 acres (25 percent) of the ~~of the~~ project area~~, although most trees have been removed within the corridor~~. In addition to

long stretches of forested areas in the eastern third of the corridor, this vegetation type also occurs as scattered patches within agricultural areas, along drainages and in canyons. Where the transmission line corridor crosses forest and deciduous shrubland communities, most trees have been removed.

Ponderosa pine is the dominant tree species within forested areas, although Douglas fir is present at moister sites. The canopy cover of the forest ranges from open to closed forest. Sometimes the forest is referred to as a parkland, which is characterized by widely scattered clumps of trees with intervening open areas, rather than the dense tree cover characteristic of a forest. Forested areas have an understory that consist of various shrubs, grasses, and forbs depending on light, moisture, slope and aspect. Dominant shrubs include: mockorange, common snowberry, mallowleaf ninebark, and Wood's rose. Common grasses include: bluebunch wheatgrass, western needlegrass, Idaho fescue, and pinegrass. Typical native forbs in this plant community include spreading dogbane, lupine species, arrowleaf balsamroot, puccoon, cinquefoil species, and pussytoes species.

Where the transmission line corridor traverses forested areas is a deciduous shrublands cover type that is characterized by low to medium height shrub thickets. The shrub species that are present are typically the same as those in the adjacent forest. Trees and tall shrubs within the corridor are periodically cleared and kept low growing to allow access to transmission facilities. The deciduous shrublands often have tree seedlings and saplings, mixed with shrubs, grasses and forbs. In the deciduous shrublands within the transmission line corridor, weed cover is prominent and is often greater than 90%. Particularly within close proximity to Spokane, weed cover is almost complete. The following noxious weeds are dense and widespread in many places in the corridor: leafy spurge, common bugloss, spotted knapweed, diffuse knapweed, Dalmatian toadflax, common St. John's-wort, common tansy, and rush skeletonweed. The deciduous shrublands are almost all of low quality, although some areas have good shrub diversity.

Where the forest is comprised of widely scattered clusters of trees or parkland, shrub-steppe or prairie often occurs in the intervening areas instead of deciduous shrublands. Plant community changes are typically gradual in these areas.

Segments of Natural Vegetation in the Project Area

The proposed line is divided into seven segments, which are between agricultural areas and have never been under cultivation. Noxious weed infestations were typically larger and denser within the transmission line corridor (including two steel structure lines and two wood pole lines) than in surrounding habitat. Most weed infestations are quite large and numerous. The brief description of each of the segments discussed below is meant to reflect the overall ecological condition of the area.

Corridor Mile 3 – 6: A shrub-steppe/lithosol mosaic with scattered vernal pools lies along this segment. The area is over-grazed and trampled and is generally of low quality. It has a number of scattered and somewhat degraded vernal pools. Common weeds include: cheatgrass, Japanese brome, tumblemustard, and bulbous bluegrass.

Corridor Mile 14 – 18: Very low quality shrub-steppe with fallow agricultural areas interspersed. Native species often with less than 15% cover. Common weeds include: bulbous bluegrass, cheatgrass, Japanese brome, flixweed, tumblemustard, and prickly sowthistle.

Corridor Mile 28 – 30: This segment is generally low to occasionally of moderate quality shrub-steppe/lithosol mosaic that is grazed and trampled. Some fallow agricultural areas are present. There are occasional patches of the noxious weeds diffuse knapweed and common St. John's-wort, in addition to the widespread weed species: cheatgrass, Japanese brome, and tumblemustard.

Corridor Mile 32 – 36: Medium to high quality prairie or meadow steppe, with high cover and high diversity of native forbs and native grasses. Areas of patchy ponderosa pine parklands and a few vernal pools and wetlands are present here. This area has occasional scattered patches of diffuse knapweed, spotted knapweed, Dalmatian toadflax, Canada thistle, and common St. John's-wort. Cheatgrass, Japanese brome, and tumblemustard are common.

Corridor Mile 37 – 43: This segment has low to occasionally moderate quality grazed and trampled prairie and shrub-steppe/lithosol mosaic. It has very scattered to open ponderosa pine forest and many wetlands. It is lower quality and has much lower diversity than the previous section because of on-going grazing. There are a number of vernal pools and wetlands in this segment. Spotted knapweed, diffuse knapweed, Dalmatian toadflax, common St. John's-wort, and common tansy are increasingly common and in larger patches. Several patches of rush skeletonweed were observed. Cheatgrass, Japanese brome, bulbous bluegrass, mullein, and tumblemustard are common.

Corridor Mile 52 – 54: Ponderosa pine and Douglas fir forest adjacent much of the corridor. Much of this short segment is of moderate quality with good shrub diversity. This section has very little sagebrush present. Spotted knapweed, diffuse knapweed, Dalmatian toadflax, common St. John's-wort, rush skeletonweed, common tansy, and Canada thistle are common and widespread within the ROW.

Corridor Mile 66 – 82: Ponderosa pine parklands to open Ponderosa pine/Douglas-fir forest, almost all of low quality. Weed cover is often greater than 90%. Especially closer to Spokane, weed cover is almost complete. This segment has scattered wetlands and some fallow agricultural areas. The noxious weeds leafy spurge, common bugloss, spotted knapweed, diffuse knapweed, Dalmatian toadflax, common St. John's-wort, common tansy,

and rush skeletonweed are dense and widespread within the transmission line corridor. A variety of other weeds are also present. Some of the habitat within the 2-mile long Riverside State Park segment is of moderate quality.
~~Although this vegetation type is referred to as "forest" it appears more as a woodland in the project area, with scattered clumps of trees with intervening open areas, rather than the dense tree cover characteristic of a forest. Areas of shrub/steppe and lithosols occur within forested areas.~~

~~In most areas, ponderosa pine is the most abundant tree species. In other areas, some Douglas-fir and aspen trees are associated with ponderosa pine. Although snowberry is the most common shrub species, a large diversity of native shrubs occur within this vegetation type, including rose, red-stem ceanothus, elderberry, wax and golden currant, serviceberry, thimbleberry, chokecherry, and oceanspray. Native forbs in this plant community include sticky geranium, old man's beard, cinquefoil species, pussytoes, desert paintbrush and a diversity of other species. Some open slopes covered with balsamroot and lupine occur within this vegetation type. Dalmatian toadflax and bulbous bluegrass are the main weedy species.~~

Page 3-122, fifth paragraph, last sentence has been modified as follows:

Although the Natural Heritage Database did not identify any federally-listed plant species as occurring within one-eighth mile of the corridor area, the USFWS has identified three federally-listed threatened species, Ute ladies'-tresses (*Spiranthes diluvialis*), Spalding's ~~catchfly~~ silene (*Silene s~~a~~paldingii*), and ~~H~~howellia (*Howellia aquatilis*) as having potential habitat present within the project corridor.

Page 3-123, second paragraph has been modified as follows:

Spalding's ~~catchfly~~silene is a federally -listed threatened species and state threatened species that usually occurs in open grasslands with a minor shrub component, most commonly in the Idaho fescue/ common snowberry plant association. ~~with the snowberry/Idaho fescue dominated plant communities.~~ It is a regional endemic to eastern Washington, northeast Oregon, Idaho and western Montana. Spalding's ~~catchfly~~silene occurs in native grasslands that are in reasonably good ecological condition, although populations have persisted in areas that have had moderate grazing pressure. Populations tend to be quite small and are currently quite fragmented, raising questions about their long-term viability. The species begins to flower in mid- to late July, with some individuals still flowering by early September. Most other forbs within its habitat have finished blooming when Spalding's silene is hitting its peak (WNHP 1997). ~~Some of these~~ Known sites often occur in a mosaic of -prairie, grassland, and ponderosa pine parkland~~forest~~.

2 Changes to Draft EIS Text

Page 3-123, fourth, fifth, and sixth paragraphs have been modified as follows:

InDuring early June 2002, a survey of the corridor identified potential habitat for Ute ladies'-tresses, hHowellia, and Spalding's catchflysilene. Some of the wetlands within the project area are potential habitat for Ute ladies'-tresses and howellia. Potential Spalding's catchflysilene habitat is present within psome ortions of the prairie forest/deciduous shrub community, as evidenced by the presence of the species it is normally associated with.

Rare plant surveys were conducted in the project area between August 3 and 8, 2002. Federally listed plant species were searched for in appropriate habitat in the entire project area. The survey documented the presence one small population of the Federally Threatened species Spalding's silene (*Silene spaldingii*). It is near but not in the project area, in Lincoln County on private land within the transmission line corridor.

The small population is located in a generally high quality section of meadow steppe or prairie. The plant association at the site is Wyeth's buckwheat/ Idaho fescue shrub herbaceous vegetation. The population consisted of 14 plants in a small area. This population may not have high viability because it is small and isolated. Although the area has evidence of current light grazing, weed cover is quite low. While no other populations of Spalding's silene were located in or adjacent to the project area, the transmission line corridor passes through several miles of potential habitat for it. Many of the proposed structure sites within the high quality prairie area had lithosol plant communities, which is unsuitable habitat for Spalding's silene. With proper mitigation and avoidance, construction and maintenance of the proposed project should not impact the population.

Although wetlands in the project area with appropriate habitat were searched for howellia and Ute ladies'-tresses, no occurrences of these species were located.

On the two-mile stretch of state-owned lands in Riverside State Park, state listed species (endangered, threatened and sensitive) were searched for in addition to the federally-listed species. Several patches of senescent plants that have the potential to be the state sensitive species Nuttall's pussy-toes (*Antennaria parvifolia*) were located in the project corridor. Nuttall's pussy-toes is very difficult to positively identify unless it is blooming, which typically occurs in May and June. It is very similar to rosy pussy-toes (*Antennaria rosea*), a commonly occurring species in the area. Typical Nuttall's pussy-toes habitat includes dry, open areas with sandy or gravelly soil along rivers or lakeshores, usually in ponderosa pine forests (WHNP 1999). The potential population of the state sensitive species Nuttall's pussy-toes in Riverside State Park will be verified during a follow-up survey in May or June 2003. A rare plant survey will be conducted in the summer of 2002 in areas identified as potential habitat in order to determine if these species are present in the corridor. If any waterways or wetlands would be impacted, those areas will be surveyed for Ute ladies'-tresses and Howellia.

Noxious Weeds

Weeds are plant species designated as such by federal or state law. Past land uses in the project area, such as grazing and road building, has disturbed the native plant community, and favored the establishment of some weed species. Present land uses, such as the use of vehicles along dirt roads or off-road and the expansion of agriculture continue to contribute to the spread of weed species. Some weeds do not require disturbance and are able to invade natural areas quickly. Disturbed areas may become infested with noxious plant species without proper vegetation management.

Page 3-124, last two paragraphs have been modified as follows:

Not all undesirable plant species are officially designated as state weeds. For example, although land managers are concerned about the spread of non-native grass species such as medusa-head and cheatgrass, these species are not on state weed lists. These weedy grass species are fairly widespread and have undesirable effects on plant communities, particularly in the ~~shrub/steppe~~shrub-steppe. Table 3-18 lists Class A, B, and C noxious weeds with the highest potential to occur in the project area.

Weed species and general locations of infestations were noted in the project area during fieldwork in 2002. Some areas within the project area have large infestations of multiple noxious weeds. Infestations of the following noxious weeds were observed within the transmission line corridor: Canada thistle, common tansy, Dalmatian toadflax, diffuse knapweed, perennial sowthistle, common St. John's wort, rush skeletonweed, kochia, sulfur cinquefoil, puncturevine, spotted knapweed, common bugloss, jointed goatgrass, and leafy spurge. A comprehensive weed survey will be conducted prior to construction. ~~Some weeds were noted in the project area during the summer of 2002 and a comprehensive weed survey will be conducted prior to construction. The following weeds occur within the transmission line corridor:~~

Page 3-128, first paragraph, last two sentences have been modified as follows:

Although the vegetative communities within the proposed new road segments would be impacted due to the removal of vegetation and soil compaction, these impacts could be mitigated by the revegetation ~~and eventual natural recolonization~~ of the abandoned segments ~~by plant species~~. Therefore, low to moderate impacts could be expected from the realignment of access roads within the corridor~~, unless a federally-listed species is present~~.

Page 3-128, third and fourth paragraphs have been modified as follows:

~~Within a portion of corridor mile 36, a new access road is proposed within the corridor. Native forb and shrub vegetation within the proposed new road segments would be impacted through vegetation removal and soil compaction. Revegetating the abandoned segments~~

~~would partially mitigate these impacts. Moderate to high impacts would be expected from the construction of the realignment of access roads within the corridor because this is an area vegetated primarily with native species, with few weed species, and has been identified as potential habitat for a federally-listed plant species.~~

Construction of spur roads would have direct and indirect impacts to vegetation. Direct and indirect impacts are similar to those described above for compaction. The total area disturbed ~~as~~ from~~a result in~~ construction of approximately 2 miles permanent spur roads would be about 6.3 acres, with about 3.2 acres in forested habitat and 2.5 acres in ~~shrub/steppe~~shrub-steppe habitat. Within a portion of corridor mile 36, a new access road is proposed to be routed within the corridor along the north side of the 230-kV tower. This new road would avoid the area of high quality prairie, which is potential habitat for a federally-listed plant. Native forb and shrub vegetation within the proposed new road segments would be impacted through vegetation removal and soil compaction. The impact level would be moderate ~~to high~~ because this is an area vegetated primarily with native species, with few weed species.

Page 3-128, last paragraph, last sentence has been modified as follows:

Based on observation and preliminary information, the impact level would be low to moderate~~, unless a federally-listed species is present~~.

Page 3-129, first paragraph, last sentence has been modified as follows:

Based on observation and preliminary information on the extent of the areas that would need to be widened, the impact level would be low to moderate ~~unless federally-listed species are present~~.

Page 3-129, third paragraph, last sentence has been modified as follows:

Based on observation and preliminary information, the impact level would be low to moderate~~, unless a federally-listed species is present~~.

Page 3-130, fourth and fifth paragraphs have been modified as follows:

~~A survey of potential habitat for listed species identified during the June surveys will be conducted in late July or early August 2002 to determine if these species occur within the corridor. Preliminary assessment of corridor vegetation indicates that although areas have been disturbed, suitable habitat for listed species exists within the corridor.~~Rare plant surveys for federally-listed species were conducted in the project area in August 2002. The survey documented the presence of one small population of the federally threatened species Spalding's silene (*Silene spaldingii*). It is near but not in the project area, in Lincoln County on private land within the transmission line corridor. The small population is located in a

generally high quality section of prairie. With proper mitigation and avoidance, construction and maintenance of the proposed project should not impact the population.

A ~~lthough full impacts cannot be addressed until a survey is done of all potential habitat areas that would be impacted by project activities, a~~ Biological Assessment analyzing the effects of the project on this and other federally ~~listed~~ threatened and endangered species ~~will be~~has been conducted pursuant to Section 7 of the Endangered Species Act. The BA has concluded that the proposed project may affect but is not likely to affect Spalding's silene or Ute ladies'-tresses, and would have no effect on Howellia. The BA will be submitted to the U.S. Fish and Wildlife Service for its concurrence.

Page 3-131, second and third paragraphs have been modified as follows:

~~Impacts to rare plant species could occur due to land use such as grazing, but it is likely that federal agencies will prioritize the protection of rare species habitats. Federal agencies are addressing the needs of rare plant species and staff members are assigned to deal with rare plant issues on federal lands.~~ Regarding rare plant species, it is expected that federal and state endangered species laws would continue to help protect habitats of listed rare plant species on federal and state lands. However, rare plant species in private areas receive little or no protection under federal and state rare and endangered species legislation. Rare species on private lands are likely to ~~would be~~ continue~~d~~ to be impacted by a variety of non-project related land uses typical of private lands, including farming, and ranching and development.

Many people believe that the invasion by weed species represents the most significant threat to biodiversity within the western United States. S~~Native steppe and shrub/steppe~~hrub-steppe and prairie communities have been eliminated and ~~declined~~ substantially degraded in recent years, and ~~such~~ undisturbed plant communities are essentially absent from the corridor. However, ~~The evidence supporting this conclusion is the presence of~~ a diversity of native species and plant communities ~~that have~~ persist~~ed~~ in the transmission line corridor despite the operation and maintenance of four transmission lines. Therefore, new transmission facilities within an already disturbed existing corridor are~~would~~ likely to affect some habitat, but are~~is~~ not expected to have a substantial impact on plant biodiversity.

Pages 3-131 and 3-132, Mitigation, have been modified as follow:

Efforts to avoid and minimize negative impacts to vegetation in the project area include the following measures:

- Locate~~ing~~ the proposed project within the existing corridor, where possible.
- Use~~ing~~ the existing access road system, with minimal development of new roads.

- Locat~~e~~ing staging areas and conduction tensioning sites outside of good quality native habitat areas, where possible.

- Restrict~~ing~~ travel to one area where spur roads would traverse lithosols to prevent damage to sensitive plant communities.

- Keep~~ing~~ vegetation clearing to the minimum needed to access construction areas and maintain safety and operational standards.

- Reseed~~ing~~ or revegetat~~e~~ing disturbed areas following construction with native vegetation. During a typical year, July may be the most favorable time for grass seed collection for revegetation purposes.

- For revegetation in areas with a high cover of noxious weed species (especially forested areas within Spokane County), consider planting native shrubs in the right-of-way. In areas that are heavily infested with weeds, shrubs may be more successful in outcompeting noxious weeds than native grasses or forbs.

- Control~~ling~~ noxious weed infestations by cleaning equipment traveling in and out of noxious weed-infested areas, using herbicide or biocontrol treatments, and reseeding disturbed areas with native species.

- Conduct~~ing~~ a pre-construction noxious weed inventory to gather baseline information and develop a noxious weed control plan.

- BPA would assist and cooperate with concerned landowners and county weed boards, to implement noxious weed control procedures.

- ~~If federally-listed plant species are identified during the plant survey, these areas would be avoided, if possible.~~ A Biological Assessment, as required under the Endangered Species Act, ~~would be~~has been prepared that provides detailed actions to reduce or eliminate impacts on listed species. The ~~and~~ BPA would implement any reasonable measures recommended by the U.S. Fish and Wildlife Service to reduce or avoid impacts.

- The Spalding's silene population adjacent to the project area will be staked prior to any construction activity within the project area to protect it from unforeseen casual impact. The stakes will include a buffer area and will indicate the presence of a sensitive area.

- BPA will limit construction activities in the high quality plant communities between corridor miles 32 and 36 to the times of year that cause the least amount of damage, whenever practicable. This would be during winter when the ground is frozen or late fall when the plants are senescent and the ground is dry.

- The potential population of the state sensitive species Nuttall's pussy-toes in Riverside State Park will be verified during a follow-up survey in May or June 2003. If present, protective measures such as protective flagging would be initiated.

- Information on rare plant occurrences will be given to BPA maintenance personnel to be considered during the planning and implementation of future maintenance activities. The location of rare plant occurrences will be placed on BPA maps and documents so that maintenance personnel are aware of their location. A written description of restrictions, precautions or special procedures within rare plant habitat will be attached to maps and documents for that area.

- Within the vicinity of rare plant populations, the procedures used to control weeds will be restricted to those that minimize harm to rare plant species, such as hand-pulling weeds. Specific control methods to protect rare plant populations will be included in vegetation management planning for the corridor.

- Because the transmission line corridor passes through several miles of high potential habitat for Spalding's silene, a new rare plant survey conducted at the appropriate time during the growing season should precede any future ground-disturbing activities in areas not included in the corridor.

Fish

Page 3-138, first paragraph, add at end of paragraph as follows:

A biological assessment analyzing the effects of the project on federally-listed threatened and endangered species has been conducted pursuant to Section 7 of the Endangered Species Act. The BA has concluded that the proposed project would have no effect on bull trout nor would it result in the destruction or adverse modification of proposed critical habitat. The BA will be submitted to the U.S. Fish and Wildlife Service for its concurrence.

Wildlife

Page 3-143, first paragraph has been modified as follows:

> The bald eagle ~~and pygmy rabbit are~~is the only federally-listed threatened and endangered species that may occur in the project area. The emergency listing for the pygmy rabbit population expired in July 2002. Therefore, the pygmy rabbit is no longer listed as endangered. It is now in the process of being proposed for listing.

Page 3-143, third paragraph about *Pygmy rabbit* has been deleted.

Page 3-149, last paragraph, first sentence has been modified as follows:

Presence of the ~~Federally-endangered~~ pygmy rabbit has not been documented in the vicinity of the corridor, although their historic range once occupied Douglas, Grant, Lincoln, Adams, and Benton counties.

Page 3-150, paragraph 2 has been modified as follows:

A Biological Assessment (BA) analyzing the effects of the project on federally-listed threatened and endangered species ~~will be conducted~~has been prepared pursuant to Section 7 of the Endangered Species Act. The BA concludes that because of the potential for adverse effects on bald eagles due to removing large trees, the project may affect, but is not likely to adversely affect, bald eagles or their habitat. The BA also addressed the pygmy rabbit, Washington ground squirrel, and the western sage grouse, which are proposed for listing. The BA has concluded that the proposed project would not jeopardize pygmy rabbits, Washington ground squirrels, or western sage grouse. The BA will be submitted to the U.S. Fish and Wildlife Service for its concurrence.

Page 3-151, bullet item 4 has been modified as follows:

- A Biological Assessment, as required under the Endangered Species Act, ~~would be~~has been prepared that provides detailed actions to reduce or eliminate impacts on listed species, and BPA would implement any reasonable measures recommended by the U.S. Fish and Wildlife Service to reduce or avoid impacts.

Environmental Consultation, Review, and Permit Requirements

Permit for Structures in Navigable Waters

Page 4-17, discussion has been modified as follows:

Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) regulates all work done in or structures placed below the ordinary high water mark of navigable waters of the U.S. No work associated with the proposed project would occur in or over such water bodies. ~~However,~~ Although the conductors would span ~~the navigable waters of~~ the Spokane River, it is not designated as a navigable water in this location. ~~; overhead utility lines constructed over Section 10 waters require a Section 10 permit.~~

Page 4-17, discussion of Section 401 has been modified as follows:

Section 401 – A Federal permit to conduct an activity that causes discharges into navigable waters. ~~is issued only after the affected state certifies~~ The Washington Department of Ecology issues the 401 Water Quality Certifications for the State of Washington after certifying that existing water quality standards would not be violated if the permit were issued. ~~The state of Washington would review permits for compliance.~~

References

Pages 7-1 and 7-2, add references as follows:

Cowger, J. R. et. al. 1996. Transmission Line Impact on Residential Property Values: A Study of Three Pacific Northwest Metropolitan Areas. September/October 1996, *Right of Way Magazine.*

Cowger, J. R. et. al. 2000. Impact on Residential Property Values along Transmission Lines: An Update Study of the Three Pacific Northwest Metropolitan Areas. July/August 2000, *Right of Way Magazine.*

EPRI, Palo Alto, CA. and Bonneville Power Administration: 1999. Non-PCB Capacitor Fluids Used in the Power Industry: Chemical Composition and Dissolution Characteristic. TR-113974.

Jayne, Doug. 2002. Personal communication regarding metals in the Spokane River. Washington Department of Ecology. 11/04/02.

Warren, Christopher. 2002. Personal communication regarding Pygmy rabbit habitat and status change for ESA listing. USF&WS, Upper Columbia Fish & Wildlife Office. 10/02/02.

Electrical Effects from the Proposed Grand Coulee – Bell 500-kV Transmission Line Project (Appendix B-1)

Cover of Report has been modified to add (Revised October 2002) under the June 2002 date.

Page B-1/4, Item 3 of Section 2.2 has been modified as follows:

3. the proposed line on single-circuit structures parallel to four existing BPA lines in the Grand Coulee – Bell corridor (This configuration has three sections with different electrical phasing for the proposed line.);

Page B-1/ 10, fourth paragraph has been modified as follows:

The magnetic field at the edge of the right-of-way depends on the width of the right-of-way, which varies considerably for the proposed line. For maximum current conditions, the calculated magnetic field at the edge of the right-of-way is 83 mG for Configuration 2 (where the proposed line is at the edge of the right-of-way). For Configurations 3 to 10 (where the proposed line does not abut the edge of the right-of-way), the magnetic fields at the edge of the right-of-way are generally comparable to or less than the existing fields there. Magnetic fields would increase somewhat at the south edge of the ROW in the West and Middle sections of Configuration 3. The absence of an increase in edge-of-right-of-way fields is due to the distance of the proposed line from the edge of the right-of-way and to the reduction in currents in the existing lines that would occur with the introduction of the proposed line.

Page B-1/ 14, second paragraph has been modified as follows:

Induced currents are always present in electric fields under transmission lines and will be present near the proposed line. ~~However, during initial construction, BPA routinely grounds metal objects that are located on or near the right-of-way. The g~~Grounding eliminates metal objects as sources of induced current and voltage shocks. Multiple grounding points are used to provide redundant paths for induced current flow. After construction, BPA would respond to any complaints and, if necessary, provide assistance to install or repair grounding to mitigate nuisance shocks.

Page B-1/ 25, third paragraph in Section 10 has been modified as follows:

Under maximum current conditions, the maximum magnetic fields under the proposed line would be 333 mG; at the edge of the right-of-way of the proposed line the maximum magnetic field would be 83 mG. However, along the multi-line Grand Coulee – Bell corridor, the magnetic field at the edges of the right-of-way would generally be comparable with, or less than, existing levels and would range from 3 to 4~~1~~7 mG.

Page B-1/ 26, second paragraph has been modified as follows:

Short-term effects from transmission-line fields are well understood and can be mitigated. Nuisance shocks arising from electric-field induced currents and voltages could be perceivable on the right-of-way of the proposed line. ~~It is common practice to g~~Grounding permanent conducting objects during and after construction mitigates against such occurrences.

Chapter 3
Changes to Draft EIS Tables and Figures

Proposed Action and Alternatives

Comparison of Alternatives

Pages 2-25 and following have been modified as follows:

Table 2-2. Summary of Impacts and Mitigating Measures for the Proposed Action and Alternatives

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	Alternative Action		
Land Use			
▪ Imposition of a transmission line on 3.5 miles of right-of-way where none now exists; remainder of project would be in existing transmission line corridor or BPA property. ▪ Approximately 24 acres would be needed on a permanent basis for tower sites. ▪ Approximately 40 acres would be needed temporarily for staging areas and conductor pulling/tensioning sites.	▪ Impacts would be the same as for the Agency Proposed Action.	▪ Provide schedule of construction activities to all landowners along the corridor that could be affected by construction. ▪ Coordinate with the City of Grand Coulee to site towers within North Dam Park. ▪ Place gravel on existing roads within North Dam Park to reduce the spread of noxious weeds. ▪ Pre-treat areas of high weed concentrations in North Dam Park during plant emergence to reduce weed spread.	▪ No new impacts.

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Land Use (cont'd)			
▪ Approximately 22 acres would be needed for new permanent access roads and road spurs; mostly in rangeland. ▪ Approximately 52 acres would be needed for access road improvements. ▪ Approximately 12 acres of agricultural land would be removed from production permanently (about 4 acres of prime farm land); net loss would be about 3.3 acres. ▪ Up to 765 acres of cropland would be removed from production for one or two seasons. ▪ Potential interference with farming activities during construction; towers would interfere with farming during operation. ▪ Potential interference with recreational use at North Dam Park. ▪ Temporary disturbances to recreational use at Riverside State Park and nearby residential uses in the Spokane area. ▪ Commercial activities (recreational vehicle parking) in corridor near U.S. Highway 2 may be incompatible; change in land use may occur.		▪ Use Best Management Practices to limit erosion and the spread of noxious weeds. ▪ Plan and schedule construction activities, when practical, to minimize temporary disturbance, displacement of crops, and interference with farming activities. Restore compacted soil in cropland. ▪ Compensate farmers for crop damage. ▪ Place new towers parallel to existing towers, where practical, to enhance maneuverability of farm equipment. ▪ Revegetate disturbed areas with native species. ▪ Coordinate with Riverside State Park officials to locate access roads to minimize disturbance to vegetation.	

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Land Use (cont'd)			
▪ Potential disruption of traffic during construction. ▪ Potential for spread of noxious weeds by ground disturbance and vehicles. ▪ Consistent with land use plans and zoning; double-circuit towers exceed height restrictions in City of Spokane and Spokane County. ▪ Land use impact levels would be low to moderate.			
Noise			
▪ Residents at distances up to 400 to 600 feet from construction activity could experience noise levels that exceed Washington noise standards. ▪ Small increase in audible noise levels at the edge of the right-of-way during operation; median noise levels would be within standards. ▪ Noise impact levels would be low to moderate. ▪ Potential radio and television interference.	▪ Construction impacts would be the same as for the Agency Proposed Action. ▪ Audible noise levels during line operation would be 1 to 2 dBA higher than proposed action, impacts could be slightly greater.	▪ Provide sound-control devices no less effective than those provided on original equipment. ▪ Provide muffled exhaust on all construction equipment and vehicles. ▪ Limit construction activities to daytime hours. ▪ No noise-generating construction activity will be conducted within 1,000 feet of a residence between 10:00 p.m. and 7:00 a.m. ▪ Notify landowners directly impacted along the corridor prior to construction activities. ▪ Restore radio or television reception to a quality as good or better than before if interference occurs.	▪ No new impacts.

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Public Health/Safety			
▪ Potential risk of fire and injury associated with use of equipment during construction, and traffic safety issues. ▪ Potential incidence of electric field-induced nuisance shocks. Potential for health effects from magnetic fields in residential and business areas would be minor due to sparse population or field levels that would decrease or would not change from the current condition (except for 0.6-mile section in a residential and commercial area close to the right-of-way where a slight increase would be expected outside of the right-of-way). The overall level of impacts would be low except for the commercial area, where the level would be moderate to high.	▪ Fire, injury, traffic, and nuisance shock effects would be the same as for the proposed action. ▪ Potential for health effects from exposure to magnetic fields is slightly less than proposed action.	▪ Prepare and maintain a safety plan in compliance with Washington requirements. ▪ Hold crew safety meetings at the start of each workday. ▪ Secure the site to protect equipment and the general public at the end of each workday. ▪ Provide employee training in tower climbing, first aid, rescue techniques, and safety equipment inspection. ▪ Assure contractor complies with State regulations regarding on-site fire equipment. ▪ Fuel all highway-authorized vehicles off-site. ▪ When transporting project components, establish helicopter flight paths that avoid populated areas and schools. ▪ Provide notice to public of construction activities, including blasting. ▪ Take appropriate safety measures for blasting consistent with state and local codes and regulations. Remove all explosives from the work site at the end of the workday. ▪ Install implosion fittings used to connect the conductors in such a way as to minimize potential health and safety risks.	▪ No new impacts.

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Public Health/Safety (cont'd)			
		▪ Require operation and maintenance vehicles to carry fire suppression equipment. ▪ Stay on established access roads during routine operation and maintenance activities. ▪ Keep vegetation cleared according to BPA standards to avoid contact with transmission lines. ▪ Submit final tower locations and heights to the Federal Aviation Administration for review and potential marking and lighting requirements. ▪ Construct and operate the new transmission line to meet or exceed the National Electrical Safety Code. ▪ ~~Follow BPA specifications for grounding fences and other objects on and near the proposed right-of-way.~~ After construction, BPA would respond to any complaints and, if necessary, provide assistance to install or repair grounding to mitigate nuisance shocks.	
Visual Resources			
▪ Temporary viewscape changes during construction. ▪ Low to high visual impacts due to change in views for residents in the Grand Coulee and Spokane areas, and for users at North Dam Park and Riverside State Park.	▪ Impacts would be greater in the Spokane area where taller, double-circuit	▪ Use tower steel that has been treated to reduce reflectivity. ▪ Use non-specular conductors. ▪ Use non-luminous insulators (i.e., non-ceramic insulators or porcelain).	▪ No new impacts.

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Visual Resources (cont'd)			
▪ Moderate to high impacts to viewers of line where it crosses the Spokane River. ▪ Moderate to high impacts to residents of housing developments east of Nine Mile Road and in other areas between there and Bell Substation. ▪ Potentially high impact for viewshed from archaeological site near Grand Coulee.	towers would be used.	▪ Plant vegetative screens, do selective clearing/tree topping at Riverside State Park and other selected sites. ▪ Use existing topography and vegetation when ever possible to limit views of lines and structures. ▪ Locate construction staging areas out of site of potential viewers as much as possible. ▪ Require contractors to maintain a clean construction site. ▪ Maintain permanent access roads. ▪ Consult Colville Tribe on impacts to archaeological site near Grand Coulee.	▪
Air Quality			
▪ Short-term increase in pollutant levels during construction from dust and vehicles. ▪ The level of impacts during construction and operation would be low.	▪ Impacts would be the same as for the Agency Proposed Action.	▪ Use water trucks to control dust during construction ▪ Use low sulfur fuel for on-road diesel vehicles ▪ Lop and scatter, pile, mulch or chip, or take woody debris and other vegetation off-site.	▪ No new impacts.
Cultural Resources			
▪ Unless avoided by construction activities, potential for direct disturbance effects of several prehistoric and historic sites (low to high impact levels). Four of the	▪ Impacts would be the same as for the Agency Proposed Action.	▪ Avoid archaeological sites where practical including spanning them or positioning towers to separate them from cultural resources. ▪ Site new access roads to avoid cultural resources.	▪ No new impacts.

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Cultural Resources (cont'd)			
archaeological sites are considered to have traditional cultural property values. ▪ Unless avoided, possible disturbance (moderate effect) of two archaeological sites by dismantling of the existing 115-kV line in the Grand Coulee area. ▪ ~~High potential effect on historic site~~ No effect on cultural resources at Bell Substation.		▪ Limit road improvements to the existing roadbed near cultural resource sites. Avoid cultural resource sites when dismantling the portion of the 115-kV line in the Grand Coulee area. ▪ Mitigate impacts for sites that are eligible for NRHP listing and cannot be avoided. ▪ Halt work if resources are discovered during construction activities and engage cultural resource specialists to evaluate the discoveries.	
Socioeconomics			
▪ Minimal impact on housing to meet construction worker needs. ▪ Beneficial impact on employment, personal income, and local sales tax revenues. ▪ Small amount of foregone agricultural production. ▪ Low potential for trespass and vandalism of homes and businesses. ▪ Low potential for long-term adverse impacts on property values. ▪ No disproportionate impacts on low-income or minority populations.	▪ Impacts would be the same as for the Agency Proposed Action.	▪ Compensate landowners at fair market value for any new land rights required for easements for new right-of-way or for access roads. ▪ Compensate farmers for crop damage. Correct soil compaction or compensate landowners. ▪ Site towers to maintain efficient crop patterns and minimize adverse impacts to farming activities.	▪ No Action could result in lower employment and income levels, reduced levels of economic activity, and reduced tax revenues and services as a result of reduced capacity and reliability.

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Soils and Geology			
▪ Disturbance of soils and removal of vegetation during construction increase the risk of soil erosion and mass movement, and may change soil productivity and physical characteristics causing low to high impacts. ▪ Removal of vegetation in areas with loess soils would likely increase the rate of wind erosion.	▪ Impacts would be the same as for the Agency Proposed Action.	▪ Install runoff and erosion controls. ▪ Use environmental specialist to decide which mitigation approaches are best suited to reduce erosion and runoff, and to stabilize disturbed areas. ▪ Deposit excavated material in upland areas and stabilize. ▪ Promptly seed disturbed sites with an herbaceous seed mixture suited to the site. ▪ Use vegetative buffers and sediment barriers to prevent sediment from moving off site and into water bodies. ▪ Provide assistance to farmers and ranchers for subsoiling where agricultural and rangeland soils are compacted. ▪ Conduct follow-up inspections and maintain erosion and runoff controls and revegetation.	▪ No new impacts.
Water Quality			
▪ Temporary local increases in erosion and sedimentation during, and for a brief time after, construction would have low to moderate impacts.	▪ Impacts would be the same as for the Agency Proposed Action.	▪ Avoid construction on steep, unstable slopes if possible. ▪ Use best management practices to divert flows from exposed soils, store flows, or otherwise limit runoff and erosion on the site	▪ No new impacts.

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Water Quality (cont'd)			
▪ Potential contamination of surface water resources during project construction from accidental spills or leaks of petroleum products would have a low impact. ▪ Potential increase in wind and water erosion rates. ▪ Potential increase in surface water temperature would have a low impact. ▪ Construction activities generally would not be expected to directly or indirectly impact groundwater aquifers (no to low impact level). ▪ Low risk to groundwater resources from potential spills or leaks of petroleum products (low impact level).		▪ Use properly sized culverts ▪ Start stabilization measures soon after construction activities have ceased ▪ Place devices at all discharge locations and along the length of any outfall channel to slow velocity of water and avoid any significant change in the hydrology of waters downstream ▪ Restrict discharges of solid materials into waters of the United States ▪ Deposit excavated material not reused in an upland area and stabilize ▪ Schedule construction, when practical, during periods when precipitation and runoff possibilities are at a minimum ▪ Set back towers near water crossings from stream banks.	
Wetlands			
▪ Potential indirect impacts to several wetlands located within 100 feet of the new towers would have low to moderate impacts. ▪ Potential impacts to several wetlands located within 100 feet of access road maintenance activity would have low to moderate impacts.	▪ Impacts would be the same as for the Agency Proposed Action.	▪ Use standard best management practices to avoid or reduce indirect impacts to wetlands. ▪ Stockpile soil and replace or loosen compacted soils; revegetate disturbed areas adjacent to wetlands with native species. ▪ Avoid construction within flagged wetland and wetlands buffers and on steep unstable slopes.	▪ No new impacts.

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Wetlands (cont'd)			
▪ New corridor areas acquired for access roads or tower placements would avoid wetlands (no impact). ▪ Potential impacts to wetlands due to the possible clearing of tall wetland vegetation (trees) during operation and maintenance (low to moderate impact level).		▪ Locate structures, new roads, and staging areas so as to avoid waters of the U.S., including wetlands. ▪ Avoid mechanized land clearing within wetlands and riparian areas. ▪ Regularly inspect and maintain project facilities. ▪ Avoid refueling and/or mixing hazardous materials near wetlands. ▪ Use existing road systems. ▪ All excavated material not reused would be deposited in an upland area and stabilized. ▪ Where feasible, top trees instead of removing trees so roots and soil remain intact.	
Vegetation			
▪ Removal of vegetation from 210 acres for construction of towers would have moderate impacts. ▪ Destruction of plants by construction vehicles would have a low impact. ▪ Continued maintenance involving removal of tall trees would have a low impact level. ▪ Indirect impacts such as soil compaction, damaging root structures, and dust clogging leaf surfaces through use of	▪ Impacts would be the same as for the Agency Proposed Action.	▪ Maximize use of the existing corridor and roads for construction activities. ▪ Restrict vegetation clearing to the minimum needed to maintain safety and operational standards. ▪ Reseed or revegetate disturbed areas following construction. ▪ Implement measures to lessen the spread or introduction of noxious plants during and following construction.	▪ No new impacts.

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Vegetation (cont'd)			
access roads would have low to moderate impacts. ▪ Infestation of disturbed areas with noxious plant species would have low to moderate impacts. ▪ The BA has concluded that the proposed project may affect, but is not likely to adversely affect, Spalding's silene or Ute ladies'-tresses, and would have no effect on Howellia.		▪ Locate staging areas and conductor tensioning sites outside of good quality native habitat areas, where possible. ▪ Restrict travel to one area where spur roads would traverse lithosols to prevent damage to sensitive plant communities. ▪ ~~If federally-listed plant species are identified during the plant survey, these areas would be avoided, if possible.~~ A Biological Assessment, as required under the Endangered Species Act, ~~would be~~has been prepared that provides detailed actions to reduce or eliminate impacts on listed species. ~~, and~~ BPA would implement any reasonable measures recommended by the U.S. Fish and Wildlife Service to reduce or avoid impacts. ▪ The Spalding's silene population adjacent to the project area will be staked prior to any construction activity within the project area to protect it from unforeseen casual impact. The stakes will include a buffer area and will indicate the presence of a sensitive area.	

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	Alternative Action		
Vegetation (cont'd)			
		▪ BPA will limit construction activities in the high quality plant communities between corridor miles 32 and 36 to the times of year that cause the least amount of damage, whenever practicable. This would be during winter when the ground is frozen or late fall when the plants are senescent and the ground is dry. ▪ The potential population of the state sensitive species Nuttall's pussy-toes in Riverside State Park will be verified during a follow-up survey in May or June 2003. If present, protective measures such as protective flagging would be initiated. ▪ Information on rare plant occurrences will be given to BPA maintenance personnel to be considered during the planning and implementation of future maintenance activities. ▪ The location of rare plant occurrences will be placed on BPA maps and documents so that maintenance personnel are aware of their location. A written description of restrictions, precautions or special procedures within rare plant habitat will be attached to maps and documents for that area.	

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Vegetation (cont'd)			
		▪ Within the buffer area for rare plant populations, the procedures used to control weeds will be restricted to those that minimize harm to rare plant species, such as hand-pulling weeds. Specific control methods to protect rare plant populations will be included in vegetation management planning for the corridor. Because the transmission line corridor passes through several miles of high potential habitat for Spalding's silene, a new rare plant survey conducted at the appropriate time during the growing season will precede any future ground-disturbing activities in the corridor.	
Fish			
▪ Short-term and localized increases in turbidity and sediment in fish-bearing streams would have low impacts, except fish-bearing streams, where impacts could be low to high depending on timing of sedimentation. ▪ Avoidance of immediate work areas by fish due to increases in turbidity would have low impacts.	▪ Impacts would be the same as for the Agency Proposed Action.	▪ Implement WDFW recommendations for culvert replacements. ▪ Install silt fences and straw bales to separate construction activities from watercourses and drainages. ▪ Deposit excavated material not reused in an upland area and stabilize. Restrict deposition from environmentally sensitive areas such as streams, riparian areas, wetlands, or floodplains. ▪ Promptly seed disturbed sites with an herbaceous seed mixture suited to the site.	▪ No new impacts.

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Fish (cont'd)			
▪ Potential sediment deposition over spawning areas that could suffocate eggs and fry would have high impacts. ▪ Potential increase in water temperatures above those preferred by fish and reduced rates of wood recruitment into the stream due to removal of riparian vegetation would have moderate to high impacts. ▪ There would be no effect on bull trout or its habitat.		▪ Use vegetative buffers and sediment barriers to prevent sediment from moving off site and into water bodies. ▪ Avoid construction activities near fish-bearing streams during the April-June period of trout egg incubation to the extent possible. ▪ Minimize vegetation cutting within riparian zones to protect stream banks and maintain water temperature. ▪ Avoid mechanized land clearing within riparian areas. ▪ Avoid refueling and/or mixing hazardous materials where accidental spills could enter surface or groundwater.	
Wildlife			
▪ Potential impacts on wildlife in shrub steppe, forested, and riparian habitats during the breeding season (March to August) due to noise associated with construction activities would have a high impact.	▪ Impacts would be the same as for the Agency Proposed Action.	▪ Mark or remove the ground wire at the span crossing the Spokane River and wetlands. ▪ Limit the removal of forest habitat to only those trees that would directly interfere with transmission lines. ▪ Retain or create snags within the corridor at a density of at least 2 snags per 1 acre.	▪ No new impacts.

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Wildlife (cont'd)			
▪ Reduction in wildlife foraging areas and ground nesting habitat due to vegetation removal during construction would have low to high impacts, depending on time of year. ▪ Avian species could collide with the new transmission line (low impact level). ▪ A Biological Assessment concluded that the project may affect, but is not likely to adversely affect, bald eagles or their habitat. The BA also concluded that the proposed project would not jeopardize pygmy rabbits, Washington ground squirrels, or western sage grouse.		▪ Avoid construction activities within high-use native habitats during the breeding season (March 1 to August 15), when possible. ▪ Gate and lock access to the corridor, when practical, especially where the corridor crosses habitats heavily used by wildlife. ▪ Limit vehicular travel to access roads through sensitive habitat such as shrub/steppe. ▪ The BA has been prepared that provides detailed actions to reduce or eliminate impacts on listed species. BPA would implement any reasonable measures recommended by the U.S. Fish and Wildlife Service to reduce or avoid impacts.	
Floodplains			
▪ Construction within a floodplain would not create obstructions to floodwater and alter flow patterns and floodplain acreage (no impact level). ▪ Removal of riparian vegetation during construction is not expected to impact floodplains (no impact level).	▪ Impacts would be the same as for the Agency Proposed Action.	▪ Use erosion control measures. ▪ Leave vegetative buffers next to all water bodies where possible. ▪ Span floodplains wherever possible. ▪ Place fill used for temporary access road widening on fabric and remove it to an upland site after construction.	▪ No new impacts.

Table 2-2 (cont'd)

Potential Impact		Mitigation	No Action Potential Impact
Agency Proposed Action	**Alternative Action**		
Floodplains (cont'd)			
▪ No impact on floodplains due to operation and maintenance.		▪ Design the project to locate roads and structures to avoid floodplains or to minimize the potential for creating obstructions to floodwaters. ▪ Near floodplain areas, deposit all excavated material not reused in an upland area and stabilize it.	

Affected Environment, Environmental Consequences, and Mitigation

Public Health and Safety

Page 3-35, Figure 3-7 caption has been modified as follows:

Change existing caption to: Figure 3-7c Right-of-Way Configuration 3-East

Insert the following figures in front of Figure 3-7c:

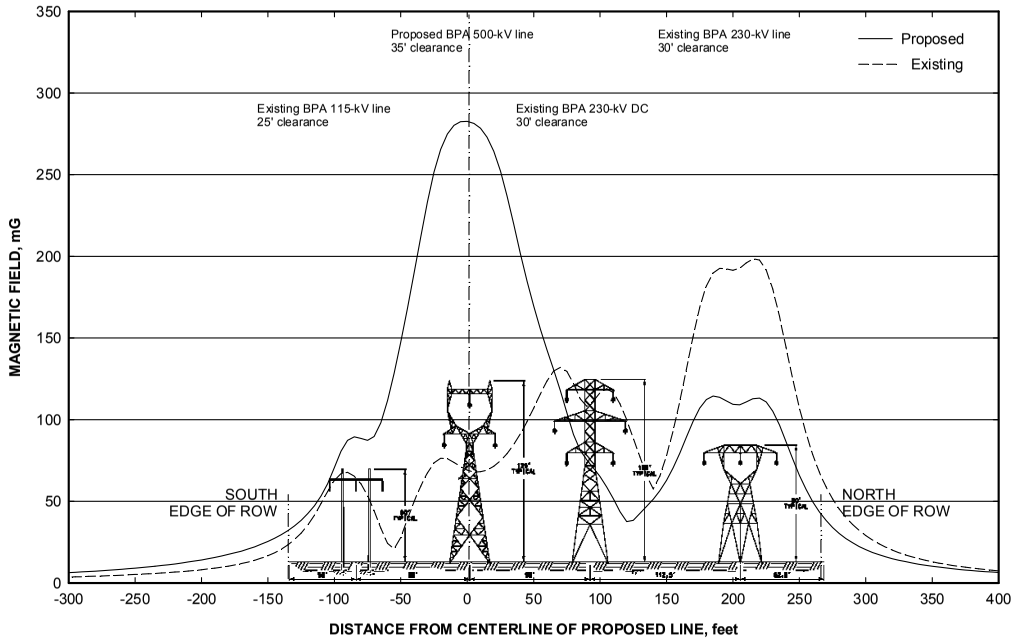


Figure 3-7a Right-of-Way Configuration 3-West

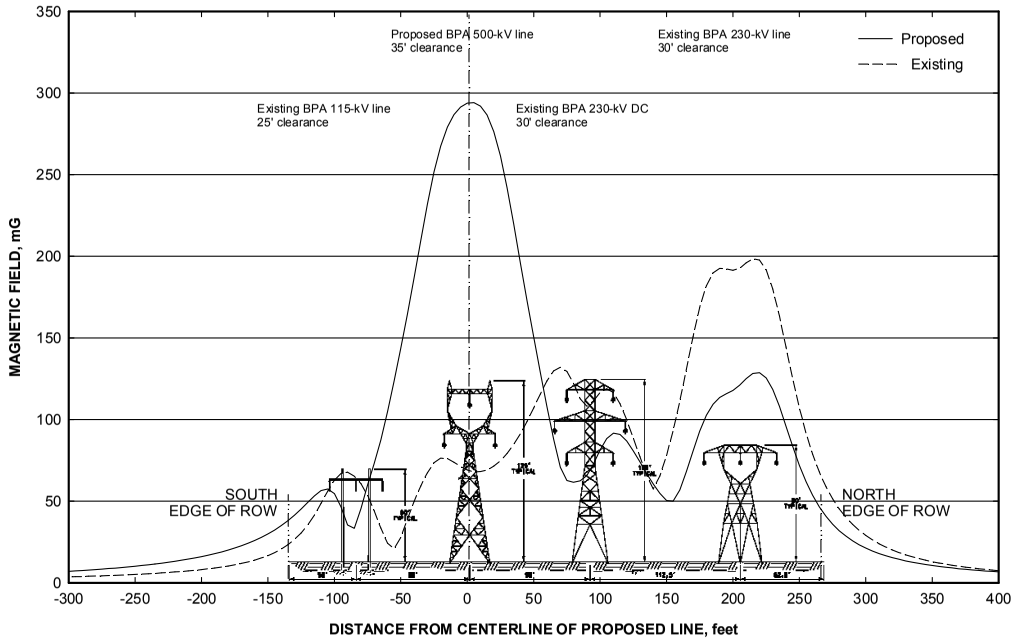


Figure 3-7b Right-of-Way Configuration 3-Middle

Vegetation

Page 3-120, Table 3-17 has been modified as follows:

Table 3-17. Vegetation Communities Within the Corridor.

Vegetation Community	Approximate Acres	Percentage Of corridor	Proposed Activity	Potential Impacts
~~Shrub/steppe~~Shrub-steppe, lithosol and prairie	352~~06~~	23~~0~~	Tower construction, road widening, road rebuild, and new road construction	Temporary and permanent vegetation removal
Forest/d~~D~~eciduous s~~S~~hrubland	382	25	Tower construction, road widening, road rebuild, and new road construction	Temporary and permanent vegetation removal
Agricultural	764	50	Tower construction and temporary road construction	Temporary vegetation removal
Other (e.g. commercial development, landfills)	30	2		

Page 3-125, Table 3-18 has been modified as follows:

Table 3-18. Weeds of Concern in the Project Area*

Common Name	Scientific Name	Noxious Weed Class ~~Spokane County Lincoln County Grant County~~
Absinth wormwood ~~**Canada thistle**~~	Artemisia absinthium~~C~~	C~~C~~
Blueweed	Echium vulgare	B
Canada thistle	Cirsium canadensis	C
Common bugloss	Anchusa officinalis	B
Common crupina	Crupina vulgaris	A
Common St. John's-wort	Hypericum perforatum	B
Common tansy	Tanacetum vulgare	C~~C~~
Dalmatian toadflax	Linaria dalmatica~~B~~	B~~B~~
Diffuse knapweed	Centaurea diffusa~~B~~	B~~B~~
Eurasian watermilfoil	Myriophyllum spicatum	B
Field bindweed	Convolvulus arvensis	C
Gorse	Ulex europaeus	B
Hoary cress	Cardaria draba	C
Houndstoungue	Cynoglossum officinale	B
Kochia	Kochia scoparia	B
Leafy spurge	Euphorbia esula	B
Longspine sandbur	Cenchrus longispinus	B
Meadow thistle	Centaurea jacea x nigra	B
Musk thistle	Carduus nutans	B
Jointed goatgrass	Aegilops cylindrica	C
Perennial sowthistle	Sonchus arvensis	B~~B~~
Purple loosestrife	Lythrum salicaria	B
Reed canarygrass	Phalaris arundinacea	C
Rush skeletonweed	Chondrilla juncea	B
Russian knapweed	Acropilon repens	B
Scotch broom	Cytisus scoparius	B
Scotch thistle	Onopordum acanthium	B
Spotted knapweed	Centaurea biebersteinii	B
Sulfur cinquefoil	Potentilla recta	B
Tansy ragwort	Senecio jacobaea	B
Puncturevine	Tribulus terrestris	B
Yellow nutsedge	Cyperus esculentus	B
~~S~~Yellow starthistle~~t. John's wort~~	Centaurea solstitialus	B~~C~~

***Species provided by ~~County~~Washington State Noxious -Weed Control Board and County Weed Boards~~s~~ (NWCB of Grant County, 2002, NWCB of Spokane County 2002, and NWCB of Lincoln County 2002).**

Electrical Effects from the Proposed Grand Coulee – Bell 500-kV Transmission Line Project (Appendix B-1)

Page B-1/ 33, the first page of Table 1 has been modified as follows:

Table 1: Possible configurations for proposed Grand Coulee – Bell 500-kV transmission-line corridor. (2 pages)

Configur -ation	Location	Description of other lines in corridor with proposed Grand Coulee – Bell 500-kV line (north to south)	Miles (length)
1	Just south of Grand Coulee (GC) Substation. Includes area on plateau north of City of Grand Coulee and area across valley west of City of Grand Coulee.	Proposed line single-circuit GC – Hanford 500-kV	2.5
2	South of GC Substation going southeast from GC – Hanford ROW to GC – Bell #1/#2 right-of-way (ROW) at Tower 3/8. Includes area on plateau south of City of Grand Coulee.	Proposed line single-circuit only	0.7
3	Single-circuit alternative from point south of GC Substation where proposed line joins GC – Bell #1/#2 ROW (Tower 3/8) on plateau south of City of Grand Coulee to where Avista lines enter ROW (Tower 78/6) at a point 600 feet west of Indian Trail Road. (Excludes mile 73 with Configuration 4) Three approximately equal-length sections of this physical configuration have different electrical phasing. The West section of Configuration 3 extends from tower 3/8 to tower 24/6 of the proposed line. The Middle section extends from tower 24/6 to tower 48/1. The East section extends from tower 48/1 to tower 78/6. The phasing of the East section is identical to that of Configuration 3 in the original Draft EIS.	GC – Bell #5 230-kV, Westside – GC /GC – Bell #3 double-circuit 230-kV, Proposed line single-circuit GC Bell #2 115-kV	73.2

Configur -ation	Location	Description of other lines in corridor with proposed Grand Coulee – Bell 500-kV line (north to south)	Miles (length)
4	Double-circuit adjacent to escarpment in Mile 73 of GC – Bell #1/#2 ROW (Towers 72/7-73/5). Includes cliff area adjacent to Coulee-Hite Road just west of Springhill Substation.	Westside - GC /GC – Bell #3 double-circuit 230-kV, Proposed line double-circuit with GC - Bell #2 115-kV	0.68
5	Double-circuit alternative to eastern portion of Configuration 3 from GC – Bell #1/#2 Tower 75/1 about 0.25 mile west of Riverside State Park to Tower 78/6 about 600 feet west of Indian Trail Road. Includes Spokane River crossing in Mile 77.	GC – Bell #5 230-kV, Westside – GC /GC – Bell #3 double-circuit 230-kV, Proposed double-circuit configuration with phases tied together. GC - Bell #2 115-kV	4.9
6	Single-circuit alternative from 600 feet west of Indian Trail Road (GC – Bell #1/#2 Tower 78/6) to about 0.5 mile west of Waikiki Road (Tower 81/7) where Avista lines cross ROW.	Beacon – Francis &Cedar 115-kV (Avista) Bell – Waikiki 115-kV (Avista) GC – Bell #5 230-kV, Westside – GC /GC – Bell #3 double-circuit 230-kV, Proposed line single-circuit GC - Bell #2 115-kV	3.1

Page B-1/ 35, The first page of Table 2 has been modified as follows:

	Proposed Line in Corridor						
Line Description	**Grand Coulee – Bell 500-kV Single-circuit**			**Grand Coulee – Bell 500-kV Double-circuit**		**Grand Coulee – Bell 500-kV/Bell-Grand Coulee #2 115-kV Double-circuit**	
Configurations	**1, 2, 3 - West**	**3 – Middle**	**3 – East, 6, 8**	**5, 7, 9**	**10**	**4**	
Voltage, kV Maximum/Average[1]	550/540			550/540		550/540	121/118
Peak current, A Existing/Proposed	- /1800			- /900 per bundle		- /1800	380/260
Electric phasing (north –- south)	C A B	A B C	B C A	C A B B A C		C A B B A C	
Clearance, ft. Minimum/Average[1]	35/45			35/45		35/45	
Tower configuration	Delta			Vertical DC		Vertical DC	
Phase spacing, ft.[2]	48H, 34.5V			36.5/56.5H, 36V		36.5/56.5H, 36V	
Conductor: #/diameter, in.; spacing, in.	3/1.300; 17.04			3/1.602; 19.75	3/1.300; 17.04	3/1.300; 17.04	1/1.300

[1] Average voltage and average clearance used for corona calculations.

[2] H = horizontal feet; V = vertical feet

3 Changes to Draft EIS Tables and Figures

Page B-1/ 38, Table 3a has been modified as follows:

a) Peak electric field on right-of-way, kV/m

Location		Proposed Corridor		Existing Corridor	
Line Clearance		Minimum	Average	Minimum	Average
Configuration 1		8.9	5.8	8.9	5.7
Configuration 2		8.6	5.8	-	-
Configuration 3	**West**	8.5	5.6	3.4	2.1
	Middle	8.5	5.6		
	East	8.9	6.0		
Configuration 4		8.6	5.7	2.9	1.9
Configuration 5		7.7	4.8	3.4	2.1
Configuration 6		8.9	5.9	3.3	2.1
Configuration 7		7.7	4.8	3.3	2.1
Configuration 8		8.9	5.9	3.4	2.1
Configuration 9		7.7	4.8	3.4	2.1
Configuration 10		7.4	4.7	1.4	0.8

Page B-1/ 39, Table 3b has been modified as follows:

b) Edge-of-right-of-way electric field, kV/m

Location		Proposed Line[1]		Existing Corridor[1]	
Line Clearance		Minimum	Average	Minimum	Average
Configuration 1		2.5, 2.1	2.5, 2.1	2.0, 2.0	2.0, 2.0
Configuration 2		2.5, 2.5	2.4, 2.4	-	-
Configuration 3	**West**	1.4, 0.8	1.3, 0.7	1.5, 0.4	1.3, 0.4
	Middle	1.6, 0.7	1.4, 0.6		
	East	1.4, 0.2	1.3, 0.1		
Configuration 4		0.1, 0.2	0.1, 0.2	0.1, 0.3	0.1, 0.3
Configuration 5		1.4, 0.2	1.3, 0.3	1.5, 0.4	1.3, 0.4
Configuration 6		0.1, 0.2	0.1, 0.1	0.1, 0.4	0.1, 0.4
Configuration 7		0.1, 0.2	0.1, 0.3	0.1, 0.4	0.1, 0.4
Configuration 8		1.4, 0.3	1.3, 0.3	1.5, 0.3	1.3, 0.3
Configuration 9		1.4, 0.3	1.3, 0.3	1.5, 0.3	1.3, 0.3
Configuration 10		0.1, 0.3	0.1, 0.3	0.1, 0.4	0.2, 0.4

3 Changes to Draft EIS Tables and Figures

Page B-1/ 40, Table 4a has been modified as follows:

a) Peak magnetic field on right-of-way, mG

Location		**Proposed Corridor**		**Existing Corridor**	
Line Clearance		Minimum	Average	Minimum	Average
Configuration 1		333	223	339	221
Configuration 2		300	205	-	-
Configuration 3	**West**	283	190	198	138
	Middle	294	200		
	East	325	229		
Configuration 4		231	155	116	75
Configuration 5		121	84	199	138
Configuration 6		325	229	196	136
Configuration 7		119	82	196	136
Configuration 8		325	229	198	137
Configuration 9		121	83	198	137
Configuration 10		222	151	77	43

Page B-1/ 41, Table 4b has been modified as follows:

b) Edge-of-right-of-way magnetic field, mG

Location / Line Clearance		Proposed Corridor[1]		Existing Corridor[1]	
		Minimum	Average	Minimum	Average
Configuration 1		77, 62	67, 55	76, 76	67, 67
Configuration 2		83, 83	72, 72	-	-
Configuration 3	**West**	44, 32	37, 30	68, 23	59, 19
	Middle	47, 38	41, 34		
	East	37, 19	32, 19		
Configuration 4		3, 31	3, 29	4, 22	4, 18
Configuration 5		41, 19	35, 15	68, 23	59, 19
Configuration 6		3, 19	3, 19	7, 23	6, 19
Configuration 7		5, 19	5, 16	7, 23	6, 19
Configuration 8		37, 5	32, 5	68, 9	59, 8
Configuration 9		41, 8	35, 7	68, 9	59, 8
Configuration 10		16, 10	16, 8	11, 9	10, 7

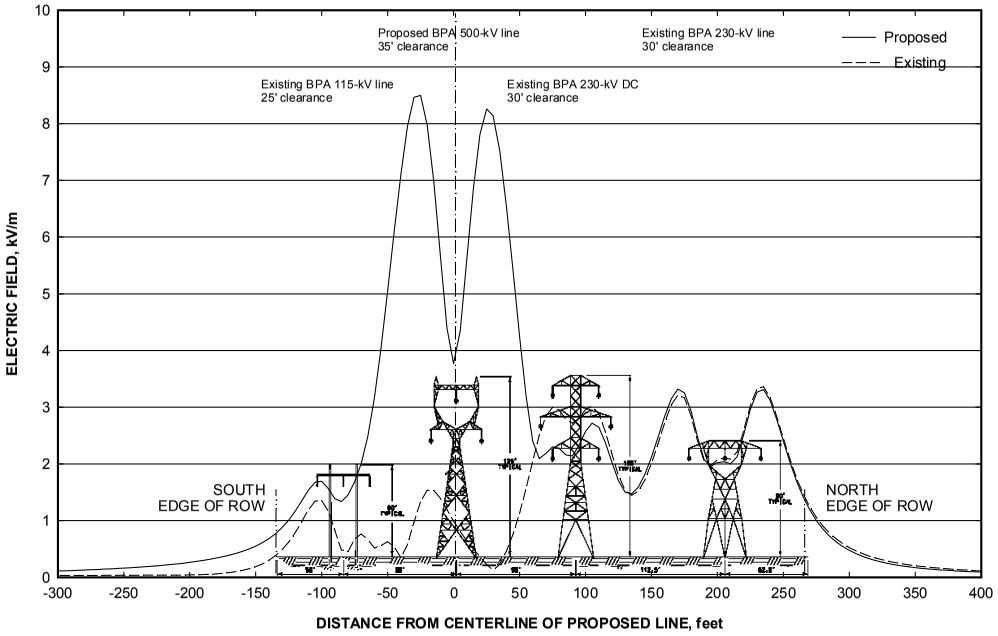
[1] **Magnetic field at east edge of right-of-way is given first for Configuration 1 and at north edge for Configurations 2 - 10.**

Page B-1/ 49, Figure 1c) has been modified by the addition of the following text below the drawing:

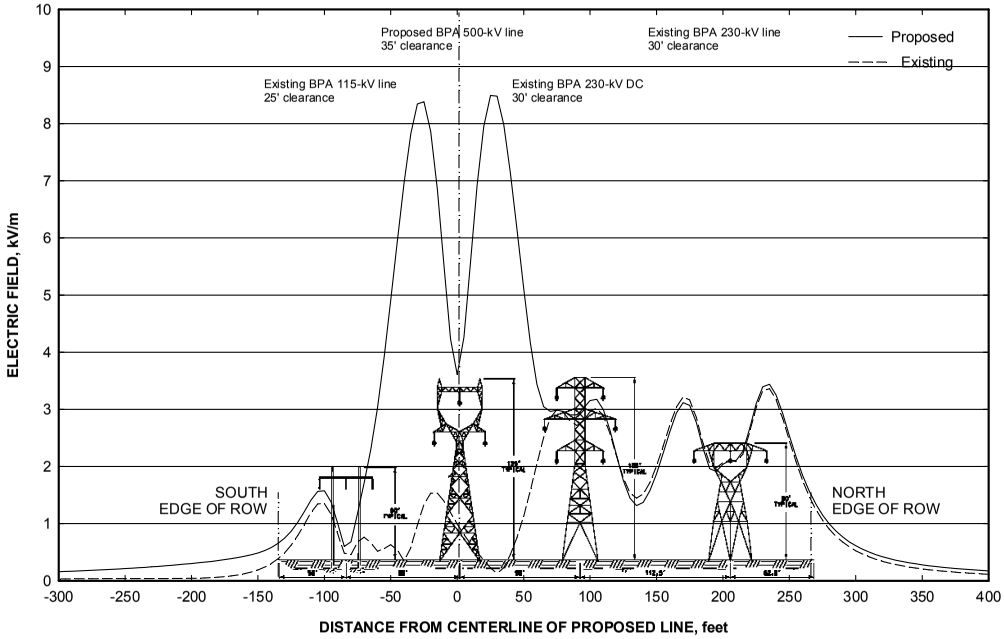
Note: The electric phasing of the East section of Configuration 3 is shown (C–B–A, north to south). Phasing in the West section is A-C-B, north to south. Phasing in the middle section is B-A-C, north to south.

Page B-1/ 57, Figure 2c) is renamed Configuration 3c-East and Configurations 3c-West and 3c-Middle are inserted ahead of it as follows:

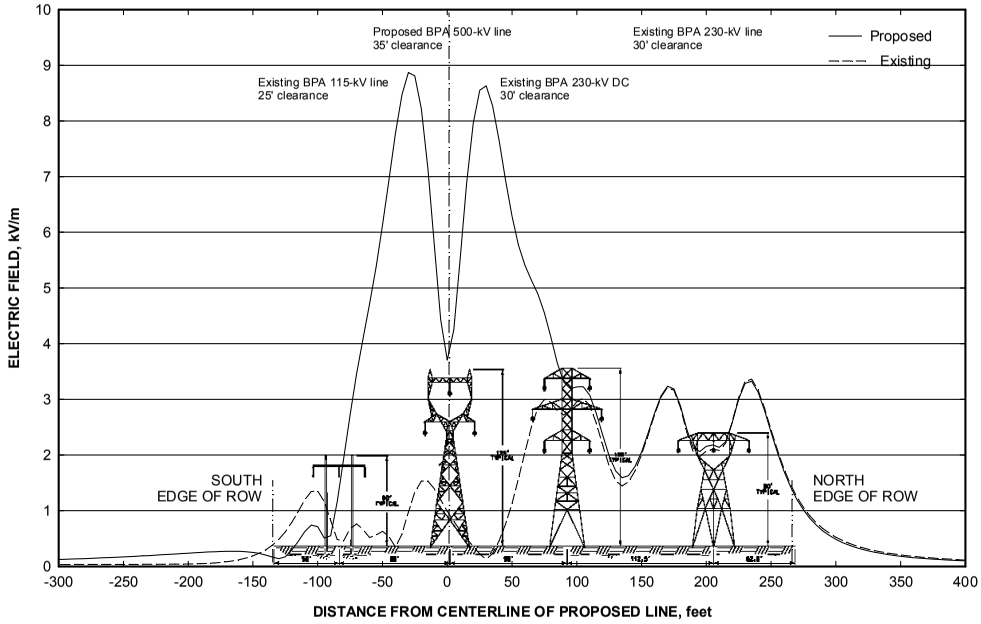
c-West) Configuration 3 - West: Proposed line on single-circuit tower parallel to existing 230-kV and 115-kV lines



c-Middle) Configuration 3 - Middle: Proposed line on single-circuit tower parallel to existing 230-kV and 115-kV lines



c-East) Configuration 3 - East: Proposed line on single-circuit tower parallel to existing 230-kV and 115-kV lines



Page B-1/62, Figure 3c) is renamed Configuration 3c-East and Configurations 3c-West and 3c-Middle are inserted ahead of it as shown previously for Figure 3-7 on Page 3-35 of Chapter 3.

Biological Data (Appendix C)

Page C/ 1, Table C-1 has been modified as follows

Table C-1. Wetlands Identified within the Project Area.

Wetland Number	Near or Between Existing Line Mile	Wetland Description	Potential Construction Impacts From Access Roads	Towers	Wood Pole Removal
Wetland 1*	1	Palustrine, emergent	No Impact: existing access road through this wetland will be closed	No Impact: wetland is more than 100 ft. from proposed tower footprint	
~~Wetland 2*~~	~~3.3~~	~~Palustrine, emergent, seasonally flooded~~	~~No Impact: existing access road is 25 ft. from wetland and no road improvements are proposed~~	~~No Impact: wetland is more than 100 ft. from proposed tower footprint~~	
Wetland 3*[b]	4./7-4./8	Palustrine, emergent, seasonally flooded	No Impact: wetland is 75 ft. from south side of access road and 100 ft. from north side of access road; ~~no road improvements are proposed~~rock existing road (no blading)	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 4[c]	5./2-5./3	Palustrine emergent, seasonally flooded	Low to Moderate: wetland is 5 ft. from north side of road; sediments could enter wetland from road widening along the south side of the road	No Impact: wetland is more than 100 ft. from proposed tower footprint	

Table C-1 (cont'd)

Wetland Number	Near or Between Existing Line Mile	Wetland Description	Potential Construction Impacts From Access Roads	Towers	Wood Pole Removal
Wetland 5*	5/4-5/5	Palustrine emergent, seasonally flooded	No Impact: wetland is 75 ft. from north side of access road; no road improvements proposed	No Impact: wetland is more than 100 ft. from proposed tower footprint.	Low to Moderate Impact: Wood pole 5/4 is w/in 10 ft. of wetland, so cut rather than excavate
Wetland 6*	5-/4-5-/5	Palustrine emergent, seasonally flooded	No Impact: wetland is 75 ft. from south side of access road; ~~no road improvements proposed.~~rock existing road.	No Impact: wetland is more than 100 ft. from proposed tower footprint.	
Wetland 7	5-/7-5-/8	Palustrine emergent, seasonally flooded	No Impact: wetland is 50 ft. from north side of road; ~~no road improvements are proposed~~rock existing road.	No Impact: wetland is more than 100 ft. from proposed tower footprint	Low impact: Wood pole 5/7 is w/in 25 ft. of wetland, so cut rather than excavate pole
Wetland 8	5-/7-5-/8	Palustrine, emergent, open water, semipermanently flooded	Low: wetland is 10 ft from south side of road and sediments from road use could enter wetland; rock existing road—use extra caution.	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 9	6-/2-6-/3	Palustrine, emergent with scrub/shrub edge, seasonally flooded	Low to Moderate: wetland extends to road edge; sediments from road use could enter wetland; no road improvements.	No Impact: wetland is more than 100 ft. from proposed tower footprint	

Table C-1 (cont'd)

Wetland Number	Near or Between Existing Line Mile	Wetland Description	Potential Construction Impacts From Access Roads	Towers	Wood Pole Removal
Wetland 10*	32-/5-32-/6	Palustrine, emergent with forested portions near access road	Low to Moderate: wetland is ~~adjacent to~~w/in 5 ft. of existing road; sediments from road improvements and road use could enter wetland; rock existing road.	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 11 [c]	32-/6-32-/7	Palustrine, emergent, semipermanently flooded	Low to Moderate: wetland is ~~adjacent to~~w/in 5 ft. of existing road in several areas; sediments from road improvements and road use could enter wetland; rock existing road.	No Impact: location of proposed structure was moved to avoid wetland; proposed location is at least 50 ft. from wetland	Low impact: existing wood pole 32/6 is in wetland; to remove pole, cut rather than excavate
Wetland 11a.	32/6-32/7	Palustrine, emergent, semipermanently flooded	Low to Moderate: wetland is w/in 10 ft. of existing road; rock existing road	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 12 [c]	33-/5-33-/6	Palustrine, emergent, seasonally flooded	Low to Moderate: wetland is ~~adjacent to~~w/in 5 ft. of existing road; sediments from road use could enter wetland; road widening away from wetland; culvert extension to the south away from wetland	No Impact: wetland is more than 100 ft. from proposed tower footprint	

Table C-1 (cont'd)

Wetland Number	Near or Between Existing Line Mile	Wetland Description	Potential Construction Impacts From Access Roads	Towers	Wood Pole Removal
Wetland 13*	33-/7–33-/8	Palustrine, emergent	Low: no road improvements proposed; wetland adjacent to existing road not used by BPA; ~~sediments from road use could enter wetland~~	No to Low Impact: wetland is 70 ft. down slope from proposed structure	
Wetland 14[c]	33-/8-33-/9	Palustrine, emergent, seasonally flooded	Low to Moderate: wetland ~~adjacent to~~is w/in 5 ft. of existing road; sediments from road improvements and road use could enter wetland; rock existing road	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 15[c]	34-/1-34-/2	Palustrine, emergent, seasonally flooded	Low to Moderate: no road improvements proposed; wetland is ~~adjacent to~~w/in 25 ft. of ~~-~~existing road; sediments from road improvements and road use could enter wetland; rock only on existing road	No Impact: wetland is more than 100 ft from proposed tower footprint. ~~Low: existing pole is within 50 ft. of wetland so cut rather than excavate pole~~	
Wetland 16*	35-/1	Palustrine, emergent	No Impact: wetland greater than 100 ft. from road	No Impact: wetland is more than 100 ft. from proposed tower	Low impact: Wood pole 35/1 is w/in 25 ft. of wetland so cut rather than excavate pole

Table C-1 (cont'd)

Wetland Number	Near or Between Existing Line Mile	Wetland Description	Potential Construction Impacts From Access Roads	Towers	Wood Pole Removal
Wetland 17*	35-/3	Palustrine, emergent	No Impact: wetland within 10 ft. north of existing road; new road will be constructed away from wetland to avoid impacts	No Impact: wetland is more than 100 ft. from proposed tower footprint	Low impact: Wood pole 35/3 is w/in 25 ft. of wetland so cut rather than excavate pole
Wetland 18*[bc]	37-/3-37-/4	Palustrine, emergent, temporarily flooded	Moderate: wetland w/in 5 ft. of both sides of the road; culvert replacement,and ~~will introduce a small amount of fill into wetland;~~additional culvert extension and road widening on the inside curve of the road (on the north side) will introduce a moderate amount of fill into the wetland.	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 19*[bc]	38-/2-38-/3	Palustrine, emergent, seasonally flooded	Low: wetland ~~adjacent to~~w/in 10 ft. of existing road; sediments from road use could enter wetland; No road improvement	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 20[c]	38-/3-38/-4	Palustrine, emergent, temporarily flooded	No Impact: wetland is more than 100 ft. from road	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 21*	38-/6-38-/7	Palustrine, emergent and scrub shrub, permanently	Low to Moderate: wetland adjacent to existing road; sediments from road improvements and road use	No Impact: wetland is more than 100 ft from proposed tower footprint	

Table C-1 (cont'd)

Wetland Number	Near or Between Existing Line Mile	Wetland Description	Potential Construction Impacts From Access Roads	Towers	Wood Pole Removal
		flooded	could enter wetland	~~Low: existing pole is within 50 ft. of wetland so cut rather than excavate pole~~	
Wetland 22	39-/6-39-/7	Palustrine, emergent, seasonally flooded	Low to Moderate: wetland ~~adjacent to~~w/in 5 ft. of existing road; sediments from road improvements and road use could enter wetland; rock existing road	No Impact: wetland is more than 100 ft. from proposed tower footprint	Low impact: existing wood pole 39/6 is w/in 10 ft. of wetland; cut rather than excavate pole
Wetland 23*	39-/6-39-/7	Palustrine, emergent, seasonally flooded	None: wetland is more than 100 ft. from road	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 24	39-/7–39-/8	Palustrine, emergent, seasonally flooded	No Impact: existing road though this area will be closed	No to Low Impact: proposed structure is on a cliff above this wetland; BMPs should prevent any materials from falling into wetland	
Wetland 25[c]	39-/7–39-/8	Palustrine, emergent, semipermanently flooded	No Impact: existing road though this area will be closed	No Impact: proposed structure is on a cliff above this wetland; BMPs should prevent any materials from falling into wetland	

Table C-1 (cont'd)

Wetland Number	Near or Between Existing Line Mile	Wetland Description	Potential Construction Impacts From Access Roads	Towers	Wood Pole Removal
Wetland 26[c]	40-/2-40-/3	Palustrine, emergent, seasonally flooded, open water	No Impact: lobes of wetland ~~is~~ are 75 ft. & 175 ft. from south side of access road. No road improvements proposed	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 27*	40-/2-40-/3	Palustrine scrub/shrub	Low: wetland ~~adjacent to~~w/in 15 ft. north of existing road; sediments from road use could enter wetland; no road improvement	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 28*	40-/3-40-/4	Palustrine, scrub/shrub, forested, seasonally flooded in bottom of 50 ft. deep hole	No Impact: wetland is more than 100 ft. from existing access road	No Impact: edge of hole is about 70 ft. from proposed tower footprint	
Wetland 29	40-/3-40-/4	Palustrine, scrub/shrub, forested, seasonally flooded in bottom of 50 ft. deep hole	No Impact: wetland is more than 100 ft from existing access road	No Impact: top of hole is more than 100 ft. from proposed tower footprint	
Wetland 30[c]	40-/4-40-/6	Palustrine, emergent, temporarily flooded	Low: ~~one portion of wetland crossed by~~wetland is w/in 5 ft. of each side of road; no road improvements proposed but	~~Low~~Moderate impact: proposed structure will be relocated about 30 ft. from wetland so sediments may	Low impact; wood pole 40/5 is w/in 25 ft. of wetland; wood pole 40/6 is w/in 25 ft of wetland; cut

Table C-1 (cont'd)

Wetland Number	Near or Between Existing Line Mile	Wetland Description	Potential Construction Impacts From Access Roads	Towers	Wood Pole Removal
			sediments could enter road from road use; no road improvements	enter wetland	both rather than excavate poles
Wetland 31	40-/6-40-/7	Palustrine, emergent fringed with scrub/shrub and forest, temporarily flooded	No Impact: wetland is 75 ft .from south of road. and n road improvements proposed	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 32	40-/8-40-/9	Palustrine, emergent with scrub/shrub fringe, semipermanently flooded	No to Low Impact: wetland adjacent tow/in 5 ft. of existing road; sediments from road improvements and use could enter wetland; failed culvert to be removed and drain dip installed	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 33	55-/4-55-/5	Palustrine, emergent, seasonally flooded	No Impact: wetland is at least 100 ft. from road	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 34	68-/7-68-/8	Palustrine, emergent, seasonally flooded	Low to Moderate: road goes through wetland, which is 10 ft from road; sediments from road improvements within existing road footprint could enter wetland; rock existing road	No Impact: wetland is more than 100 ft. from proposed tower footprint	Low impact: existing wood pole 68/8 is w/in 10 ft. of wetland; cut rather than excavate pole

Table C-1 (cont'd)

Wetland Number	Near or Between Existing Line Mile	Wetland Description	Potential Construction Impacts From Access Roads	Towers	Wood Pole Removal
Wetland 35	69-/2	Palustrine, emergent, seasonally flooded	Low to Moderate: wetland 50 ft. from road; sediments from road improvements within existing road footprint could enter wetland; rock existing road	No Impact: wetland is more than 100 ft. from proposed tower footprint	Low impact: existing wood pole 69/2 is w/in 10 ft. of wetland; cut rather than excavate pole
Wetland 36	69-/3-69-/4	Palustrine, emergent, seasonally flooded	Low to Moderate: ~~road crosses wetland;~~wetland w/in 5 ft. of road; sediments from road improvements within existing road footprint could enter wetland; rock existing road	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 37*	69-/3-69-/4	Palustrine, emergent, seasonally flooded	Low to Moderate: ~~road crosses wetland~~wetland w/in 5 ft. of road; sediments from road improvements within existing road footprint could enter wetland; rock existing road	No Impact: wetland is more than 100 ft. from proposed tower footprint	Low impact: existing wood pole 69/4 is w/in 50 ft. of wetland; cut rather than excavate pole
Wetland 38	70/.8-70-/9	Palustrine, forested, open water	No Impact: wetland 75 ft. from road. ~~and road improvements proposed will avoid wetland.~~	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 39	71-/4-71-/5	Palustrine, emergent, seasonally flooded	Low to Moderate Impact: wetland is 10 ft. from road; road ~~improvements~~ use may introduce sediments into wetland; no road improvement	No Impact: wetland is more than 100 ft. from proposed tower footprint	Low impact: existing wood pole 71/4 is w/in 25 ft. of wetland; cut rather than excavate pole

Table C-1 (cont'd)

Wetland Number	Near or Between Existing Line Mile	Wetland Description	Potential Construction Impacts From Access Roads	Towers	Wood Pole Removal
Wetland 40[c]	71-/4-71-/5	Palustrine, emergent, semipermanently flooded	No to Low Impact: wetland is 25 ft. from road; road ~~improvements~~ use may introduce sediments into wetland; no road improvement	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 41[b]	75-/8-76-/2	Riverine, intermittent streambed, temporarily flooded (Deep Creek - dry creek bed)	No Impact: existing road system will not be improved at creek crossings; some blading, no rocking or roads on state park lands	No Impact: wetland is more than 100 ft. from proposed tower footprint	
Wetland 42[b]	77-/2-77-/4	Lacustrine, open water, permanently flooded (Spokane River)	No Impact: portion of access road within wetland, leading to existing wood pole structure will no longer be used once the pole is removed	No Impact: wetland is more than 100 ft. from proposed tower footprint	Low impact: existing wood pole 77/3 is in the wetland; cut rather than excavate pole Low impact: existing wood pole 77/4 is not in wetland, but w/in the 200 ft. jurisdictional area of the Spokane River, a Shoreline of the State; cut rather than excavate; implement erosion control and revegetation of disturbed area

Table C-1 (cont'd)

Wetland Number	Near or Between Existing Line Mile	Wetland Description	Potential Construction Impacts From Access Roads	Towers	Wood Pole Removal
~~Wetland 43~~	~~82.5-82.6~~	~~Palustrine, aquatic bed, permanently flooded (sewage treatment pond)~~	~~No Impact: road is more than 50 ft. from pond edge~~	~~No Impact: wetland is more than 100 ft. from proposed tower footprint~~	

[a] Wetland descriptions based on NWI classification scheme, modified as needed based on filed verification.

[b] Wetland located or extended outside of the corridor

[c] Wetland larger than NWI mapped

* Wetland not identified on NWI

Page C/ 7, Table C-2 is replaced by Tables C-2a and C-2b

Table C-2a. Plant Species Mentioned in EIS Text by Common Name

Common Name	*Scientific Name*	Non-native Species
Grass		
Bluebunch wheatgrass	*Pseudoroegneria (Agropyron) spicata*	
Squirreltail grass	*Elymus elymoides (Sitanium hystrix)*	
Bulbous bluegrass	*Poa bulbosa*	√
Cheatgrass	*Bromus tectorum*	√
Idaho fescue	*Festuca idahoensis*	
Japanese brome	*Bromus japonicus*	√
Jointed goatgrass	*Aegilops cylindrica*	
Medusahead	*Taeniatherum caput-medusae*	√
Pinegrass	*Calamagrostis rubescens*	
Reed canarygrass	*Phalaris arundinacea*	√
Sandberg's bluegrass	*Poa secunda (sandbergii)*	
Thurber's needlegrass	*Achnatherum (Stipa) thurberianum*	
Western needlegrass	*Achnatherum (Stipa) occidentalis*	
Wheat	*Triticum aestivum*	√
Forbs		
Arrowleaf balsamroot	*Balsamorhiza sagittata*	
Bitterroot	*Lewisia rediviva*	
Bladderwort	*Utricularia* species	
Bur-reed	*Sparganium* species	
Canada thistle	*Cirsium arvense*	√
Cinquefoil species	*Potentilla* species	
Common bugloss	*Anchusa officinalis*	√
Common spike-rush	*Eleocharis palustris*	
Common St. John's-wort	*Hypericum perforatum*	√
Common tansy	*Tanacetum vulgare*	√
Dalmatian toadflax	*Linaria dalmatica ssp. dalmatica*	√
Diffuse knapweed	*Centaurea diffusa*	√
Flameflower	*Talinum spinescens*	
Flixweed	*Descurainea Sophia*	√
Howellia	*Howellia aquatilis*	
Leafy spurge	*Euphorbia esula*	√

Table C-2a (cont'd)

Common Name	*Scientific Name*	Non-native Species
Lupine	*Lupinus species*	
Mullein	*Verbascum thapsus*	√
Nuttall's pussytoes	*Antennaria parvifolia*	
Perennial sowthistle	*Sonchus arvensis*	√
Pondweed	*Potamogeton species*	
Prickley sowthistle	*Sonchus asper*	√
Puccoon	*Lithospermum ruderale*	
Rushes	*Juncus species*	
Rush skeletonweed	*Chondrilla juncea*	√
Sedge species	*Carex species*	
Spalding's silene	*Silene spaldingii*	
Spotted knapweed	*Centaurea biebersteinii*	√
Spreading dogbane	*Apocynum androsaemifolium*	
Rosy pussytoes	*Antennaria rosea*	
Tule	*Scirpus species*	
Tumble mustard	*Sisymbrium altissimum*	√
Ute's ladies-tresses	*Spiranthes diluvialis*	
Water parsnip	*Sium suave*	
Shrubs		
Big sagebrush	*Artemisia tridentata*	
Bitterbrush	*Purshia tridentata*	
Gray rabbitbrush	*Ericameria (Chrysothamnus) nauseosa*	
Green rabbitbrush	*Chrysothamnus viscidiflorus*	
Mallowleaf ninebark	*Physocarpus malvaceous*	
Mock orange	*Philadelphus lewisii*	
Serviceberry	*Amelanchier alnifolia*	
Snowberry	*Symphoricarpos albus*	
Snow buckwheat	*Eriogonum niveum*	
Stiff sagebrush	*Artemisia rigida*	
Wax currant	*Ribes cereum*	
Wood's rose	*Rosa woodsii*	
Wyeth's buckwheat	*Eriogonum heracleoides*	
Trees		
Aspen	*Populus tremuloides*	
Douglas fir	*Pseudotsuga menziesii*	
Ponderosa pine	*Pinus ponderosa*	

Table C-2b. Plant Species Observed in the Project Area in 2002

Plant Species	Non-native Species
Acer douglasii	
Achillea millefolium	X
Achnatherum (Stipa) occidentalis	
Achnatherum (Stipa) thurburianum	
Aegilops cylyndrica	X
Agastache occidentalis	
Agoseris species	
Agropyron cristatum	X
Agropyron intermedium	
Agrostis species	
Alisma gramineum	
Alisma plantago-aquatica	
Allium acuminatum	
Allium douglasii	
Allium species	
Alnus incana	
Alopecurus aequalis	
Amelanchier alnifolia	
Amsinckia species	
Anchusa officinalis	X
Antennaria neglecta	
Antennaria rosea	
Antennaria species	
Apocynum androsaemifolium	
Apocynum cannabinum	
Aquilegia formosa	
Arabis species	
Arctostaphylos uva-ursi	
Arenaria congesta	
Argentina anserina	

Table C-2b (cont'd)

Plant Species	Non-native Species
Aristida purpurea (longiseta)	
Artemisia dracunculus	X
Artemisia rigida	
Artemisia tridentata	
Artemisia tripartita	
Artemisia vulgaris	
Asclepias speciosa	
Asparagus officinalis	X
Aster campestris	
Aster occidentalis	
Aster pansus	
Astragalus agrestis	
Astragalus miser	
Astragalus species	
Avena fatua	X
Balsamorhiza careyana	
Balsamorhiza hookeri	
Balsamorhiza saggitata	
Berberis nervosa	
Berula erecta	
Besseya rubra	
Betula occidentalis	
Boisduvalia species	
Bromus japonicus	X
Bromus ridigus	X
Bromus species	X
Bromus tectorum	X
Calamagrostis rubescens	
Camassia quamash	
Carex athrostachya	
Carex douglasii	
Carex filifolia	
Carex lanuginosa	

Table C-2b (cont'd)

Plant Species	Non-native Species
Carex praegracilis	
Carex species	
Carex utriculata	
Carex vulpinoidea	
Castilleja lutescens	
Ceanothus velutinus	
Centaurea biebersteinii (maculosa)	X
Centaurea cyanus	X
Centaurea diffusa	X
Centunculus minimus	
Cerastium species	
Chondrilla juncea	X
Chrysothamnus viscidiflorus	
Cicuta douglasii	
Circium arvense	X
Cirsium undulatum	
Cirsium vulgaris	X
Clarkia pulchella	
Collinsia parviflora	
Collomia grandiflora	
Comandra umbellatum	
Cornus sericea (stolonifera)	
Crataegus douglasii	
Crataegus monogyna	X
Dactylis glomerata	X
Danthonia species	
Delphinium nuttallianum	
Delphinium species	
Deschampsia danthonioides	
Descurainea sophia	X
Dipsacus sylvestris	X
Distichlis stricta	
Downingia species	

Table C-2b (cont'd)

Plant Species	Non-native Species
Draba verna	
Eleocharis palustris	
Eleocharis species	
Elymus elymoides (Sitanium hystrix)	
Epilobium angustifolium	
Epilobium paniculatum	
Ericameria (Chrysothamnus) nauseosa	
Erigeron linearis	
Erigeron poliospermus	
Erigeron pumilis	
Erigeron species	
Eriogonum compositum	
Eriogonum heracleoides	
Eriogonum niveum	
Eriogonum strictum	
Eriogonum thymoides	
Eriophyllum lanatum	
Euphorbia esula	X
Euphorbia species	X
Festuca idahoensis	
Filago arvensis	X
Frasera speciosa	
Fritillaria pudica	
Gaillardia aristida	
Galium boreale	
Galium triflorum	
Geranium species	
Geranium viscossisimum	
Geum triflorum	
Grindelia columbiana	
Haplopappus stenophyllus	
Heracleum lanatum	
Hesperostipa (Stipa) comata	

Table C-2b (cont'd)

Plant Species	Non-native Species
Heuchera cylindrica	
Hieracium cf. cynoglossoides	
Hippuris vulgaris	
Holodiscus discolor	
Hordeum brachyantherum	
Hordeum jubatum	
Hypericum perforatum	X
Ipomopsis (Gilia) aggregata	
Iris missouriensis	
Iva axillaris	
Juncus balticus	
Juncus bufonius	
Juncus species	
Kochia scoparia	X
Koeleria macrantha (cristata)	
Lactuca pulchella	
Lactuca species	
Lepidium perfoliatum	X
Lepidium species	
Leptodactylon pungens	
Lewisia rediviva	
Leymus (Elymus) cinereus	
Linaria dalmatica ssp. *dalmatica*	X
Linum perenne	
Lithophragma species	
Lithospermum ruderale	
Lomatium ambiguum	
Lomatium dissectum	
Lomatium macrocarpum	
Lomatium species	
Lomatium triternatum	
Lotus corniculatus	X
Lotus purshiana	X

Table C-2b (cont'd)

Plant Species	Non-native Species
Lupinus leucophyllus	
Lupinus sericeous	
Lupinus species	
Maianthemum stellatum	
Marsilea vestita	
Medicago sativa	X
Melilotus alba	X
Mentha arvensis	
Mimulus guttatus	
Montia linearia	
Muhlenbergia species	
Myosurus species	
Navarretia species	
Nepeta cataria	X
Oenothera tanacetifolia	
Orthocarpus hispida	
Orthocarpus luteus	
Orthocarpus tenuifolius	
Penstemon confertus	
Penstemon gairdneri	
Penstemon species	
Perideridia gairdneri	
Phacelia hastata	
Phacelia species	
Phalaris arundinacea	X
Philadelphus lewisii	
Phlox gracilis	
Phlox hoodii	
Phlox longifolia	
Physocarpus malvaceous	
Pinus ponderosa	
Plagiobothrys species	
Plantago major	X

Table C-2b (cont'd)

Plant Species	Non-native Species
Plantago patagonica	
Poa bulbosa	X
Poa compressa	X
Poa pratensis	X
Poa secunda (sandbergii)	
Poa species	
Polygonum coccineum	
Polygonum convolvulus	X
Polygonum polygaloides	
Polygonum species	
Populus tremuloides	
Populus trichocarpa	
Potamogeton species	
Potentilla glandulosa	
Potentilla gracilis	
Potentilla recta	X
Potentilla species	
Prunus emarginata	
Prunus virginiana	
Pseudoroegneria (Agropyron) spicata	
Pseudotsuga menziesii	
Purshia tridentata	
Ranunculus aquatilis	
Ranunculus cymbalaria	
Rhus radicans	
Ribes aureum	
Ribes cereum	
Rorippa species	
Rosa nutkana	
Rosa species	
Rosa woodsii	
Rubus leucodermis	
Rubus parviflorus	

Table C-2b (cont'd)

Plant Species	Non-native Species
Rumex acetocella	X
Rumex crispus	X
Salix exigua	
Salix lasiandra	
Salix species	
Salsola kali	X
Sambucus cerulea	
Schoenoplectus acutus	
Scirpus species	
Scrophularia lanceolata	
Sedum species	
Selaginella wallacei	
Senecio foetidus	
Senecio integerrimus	
Senecio serra	
Sidalcea oregana	
Silene douglasii	
Silene spaldingii	
Sisymbrium altissimum	X
Solidago canadensis	
Solidago missouriensis	
Solidago species	
Sonchus arvensis	X
Sonchus asper	X
Sphaeralcea species	
Spiraea douglasii	
Stellaria longipes	
Stephanomeria tenuifolia	
Symphoricarpus albus	
Taeniatherum caput-medusae	X
Talinum spinescens	
Tanacetum vulgare	X
Taraxacum officinale	X

Table C-2b (cont'd)

Plant Species	Non-native Species
Tetradymia canescens	
Teucrium canadense	
Tragopogon dubius	X
Trichostema oblongum	
Trifolium dubium	X
Trifolium species	X
Triticum aestivum	X
Typha latifolia	
Ulmus pumila	X
Ulmus species	X
Utricularia vulgaris	
Verbascum blattaria	X
Verbascum thapsus	X
Verbena bracteata	
Veronica peregrina	
Veronica species	
Vicia species	
Wyethia amplexicaulis	
Zygadenus paniculatus	
Zygadenus venosus	

Chapter 4
Responses to Comments

Introduction

This chapter presents comments received on the Draft EIS as well as BPA's responses to these comments. BPA received a total of about 225 comments. Most were submitted in writing by letter and at four public meetings. Verbal comments made at the public meetings, telephone calls and e-mail messages to BPA also generated comments. Comments were received from federal, state, and local agencies and from private citizens living along the transmission line corridor.

Comments were made on Chapters 1 through 4 and on Appendix B. Comments and responses are organized by chapter/section in accordance with the Table of Contents from the Draft EIS. Comments are designated with an identifying number based on the order in which the letter, e-mail, etc. was received. The type of communication is also indicated for each comment (**Letter**, comment **Form**, verbal comment from **Public Meeting** with meeting location identified, **Phone** call, or **E-mail**). The letters, forms, e-mails, phone call logs, and meeting summaries that contain the comments are copied in full in Chapter 5 of this abbreviated Final EIS; each has an identifying number.

Purpose and Need (Chapter 1)

Need for Action

Comment: BPA will have to face the consequences of this project (which does not benefit Eastern WA) in the years to come. [023 Form]

Comment: In fact, in today's economy, and with the investigations in Energy trading we don't believe this increase in power lines is even necessary but is rather a political and financial maneuver to benefit BPA and California. [033 Letter]

Response: As noted on page 1-2 of the Draft EIS, the proposed transmission line is necessary to relieve congestion on this part of the electrical system in moving power from areas east of Spokane to load centers west of the Cascades in the Pacific Northwest. This need was first identified 10 years ago, prior to the energy crisis of 2000-2001. The proposed project will allow BPA to continue to meet existing contractual obligations to deliver energy to load centers, maintain system reliability, minimize costs to Pacific NW customer utilities, and maintain the reliability of the transmission system.

Comment: Where is the need? Why do you need to do this? [040 Second Spokane Meeting]

Response: As noted on page 1-2 of the Draft EIS, this project is needed to increase the ability of the transmission system to move power from east of Spokane to the load centers west of Spokane. During 2001, the aluminum smelters at Bell (Kaiser) and Columbia Falls (Columbia Falls Aluminum) stopped production. Together these smelters used about 800 MW of power that was generated in the area. Since the load is no longer there, the electricity that served that load must now move west to serve other loads. The transmission system does not have the capacity to handle this load. The Grand Coulee-Bell transmission project would add enough capacity to the system to meet all current customer requirements. Without this project, BPA runs a significant risk that it will not be able to continue to meet its contractual obligation to deliver power and still maintain reliability standards that minimize risks to public safety and to equipment.

Comment: If larger lines are required now, what about the future? [026 Letter]

Response: BPA's policy is to use existing corridors (i.e., remove lower voltage lines and replace with higher voltage lines where possible) to reduce the environmental impact. In the future, generation resources may be developed that could be installed at homes and businesses and this would reduce the need for new transmission lines. However, these developments are at least 10 years away and are not certain.

Comment: With all the energy manipulation . . . Is it necessary? [034 Letter]

Response: The new line is necessary to move existing generation to load centers in the west (see Chapter 2 of the Draft EIS). Assuming the commenter is referring to the energy crisis of 2000-2001, in which energy prices may have been manipulated, this has no effect on the need to serve load and keep the system reliable. This situation affected power prices, not the need to continue serving loads.

Comment: And a question: Are bigger lines needed and what is this likely to cost me in terms of my utility bill in the future? Are we planning to export more power and who is going to pay for this? If it is going to cost us, what difference in air vs. buried? [009 Form]

Response: Bigger lines are needed to economically and reliably transmit the power. The higher use of the transmission lines will generate additional revenue to pay for the project. This should not increase your power bill. Transmission is only about 5% of your bill presently. Buried transmission lines are about 10 to 15 times more costly than overhead lines (see responses under *Alternatives Considered but Eliminated from Detailed Study*).

Comment: What gives BPA the right to contaminate (visual, EMF) on my land? [037 Coulee Dam Meeting]

Response: As noted on page 1-2 of the Draft EIS, BPA must fulfill its statutory and contractual obligations, which includes providing sufficient transmission capacity. As a result, BPA must from time to time construct new transmission facilities such as the proposed action. As noted by the commenter, these projects have the potential to affect adjacent land uses through effects such as visual impacts and increases in electric and magnetic fields. The EIS identifies mitigation measures that would serve to reduce or avoid these effects to the maximum extent feasible.

Comment: Which way does the power flow? East to west, or west to east? [040 Second Spokane Meeting]

Response: As noted on page 1-2 of the Draft EIS, the power flows east to west on the Grand Coulee-Bell transmission line corridor. Prior to development of generation resources to the east of Bell Substation in the 1970's and 1980's, the power flowed from west to east to support the Spokane area.

Comment: The Draft EIS in Chapter 1 *Need for Action* does not sufficiently address scenarios that incorporate DSI aluminum smelters at Columbia Falls, MT, and Spokane, WA, operating at different levels of operation. Specifically, the EIS needs to evaluate the need for action based on both of these smelters returning to full production, both smelters operating at an intermediate range of production, and neither smelter in operation. How does the need for action vary with these scenarios? What assumptions were made regarding smelter operation for the proposed action? [042 Letter]

Comment: For the description of the No Action Alternative on page 2-13 of the draft EIS, the bulleted assumptions need to include assumed level of smelter operation. [042 Letter]

Response: The need for the proposed action discussed in Chapter 1 of the Draft EIS is based on information that is currently available about reasonably foreseeable conditions. Recently, the Columbia Falls aluminum smelter has resumed operation. However, the long-term prospects for operation are uncertain. The Spokane smelter remains closed. Regardless of the operating status of these smelters, there is still an identified need to increase the capacity and reliability of this transmission path, as discussed in Chapter 1 of the Draft EIS. Consistent with NEPA, the Draft EIS focuses on evaluating the environmental consequences of the proposed action and alternatives, rather than the need for the proposed action.

Comment: For future wind generation, what options would there be to hook into the power grid? (the 115-kV line?). [037 Coulee Dam Meeting]

Response: The proposed action is needed to help resolve existing transmission constraints in the project vicinity, and is not intended to allow additional power generation interconnections. A discussion of interconnection options for wind generation is thus outside the scope of this EIS.

Comment: I don't have a problem with it, "Progress Is Progress". [040 Second Spokane Meeting]

Comment: It looks like a good program! ! ! [040 Second Spokane Meeting]

Comment: Nespelem Valley Electric Cooperative fully supports BPA in expanding the federal transmission system and operating it for the benefit of the people in the NW and this area AT COST! [016 Form]

Comment: I am in favor of new lines to benefit people in the northwest at cost to keep their power expenses from being expensive. [017 Form]

Comment: Have no problem with line going in. [038 Davenport Meeting]

Response: Your comments are acknowledged and hereby incorporated in the Final EIS.

Comment: Thank you for the opportunity to provide comments on the draft Environmental Impact Statement (EIS) for the Grand Coulee - Bell 500 kV line. Although this project is located within the state of Washington, it is important to existing and planned generating plants in Montana that serve distant loads in the Pacific Northwest. The following comments center around need for the project as it relates to adequately sizing this project and related projects so they can handle current and expected generation east of Hatwai, Washington when this generation is at its peak and examining reasonable, practical, cost-effective alternatives that address current and future congestion through the west of Hatwai transmission cut plane. These questions should be answered in the context of how congestion in this area would be managed under the proposed RTO (Regional Transmission Organization). The final EIS should present a clear analysis of why the line is needed; the benefits and costs; describe who will benefit and who will pay for the line, and identify the best alternative for addressing congestion now and in the future. [042 Letter]

Response: Comment noted. The proposed action has been proposed to address the existing transmission system problem that is discussed on pages 1-2 to 1-3 of the Draft EIS; that is, the need to relieve existing constraints along the West of Hatwai transmission path. While future generating projects in Montana may necessitate additional transmission capacity on this path at

some point in the future, the proposed action is intended only to address existing constraints on this path. An analysis of these future generation projects and any additional transmission lines built to transmit their power is thus beyond the scope of this EIS.

Regarding RTOs, BPA and other regional utilities are still in the formative stage of considering the nature and extent of a RTO for the Pacific Northwest, and it likely will be at least several years before a RTO could be implemented. Because it is unclear at this time how and if BPA will participate in a RTO, it would be speculative to estimate how management of congestion would differ, if at all, under a RTO. Thus, the EIS reasonably analyzes the environmental effects from construction of the proposed line under the current management structure.

A discussion of why the proposed line is needed is provided on pages 1-2 to 1-3 of the Draft EIS. Although a cost-benefit analysis is not required by NEPA, the cost of the proposed action is discussed on page 2-2 of the EIS. The source of funding for the proposed line is expected at this time to be BPA, and it is likely that the region as a whole will benefit from the increased reliability and capacity from implementing the proposed action. Alternatives that were considered are discussed in Chapter 2 of the EIS.

Comment: The final EIS needs to describe the existing transmission system and trends in generation and consumption in the region including Montana to provide readers an understanding of which areas export power over the transmission system and which areas use this power. [042 Letter]

Response: A description of which areas export power over the transmission system in the project vicinity and which areas use this power is provided in the *Need for Action* section in Chapter 1 of the EIS. Because the transmission line is being proposed to address existing transmission constraints rather than provide for future generation and consumption, trends in generation and consumption in the region not directly relevant to an assessment of the need for the proposed action, and a discussion of such trends is outside the scope of this EIS.

Comment: The document should contain a description of the extent to which the physical (thermal) capacity of transmission is set aside to address reliability considerations (that is, the difference between the physical capacity of the wires to carry power and the 2800 MW path rating that satisfies Western Electrical Coordinating Council reliability criteria). It should then analyze the extent to which the West of Hatwai path is congested and the extent to which scheduled (i.e. contracted) transmission cannot be carried on the system. Finally, this should be compared with the actual loadings (E to W, W to E, and net) at times that schedules are rejected. [042 Letter]

Response: As required by NEPA, the EIS for the proposed action focuses on the environmental effects of the proposed action and alternatives; the systems planning information requested by

the commenter is outside the scope of this EIS. General information about the existing capacity of the West of Hatwai transmission path is provided in the *Need for Action* section in Chapter 1 of the EIS.

Comment: Describe how much capacity the system would have now and in the future considering changes in load and generation east of Hatwai and expected growth in loads west of Hatwai. This discussion should address several scenarios that incorporate future status of aluminum smelters that had been temporarily closed (i.e., with neither Columbia Falls Aluminum or Kaiser Aluminum coming back on line, an intermediate range of aluminum production at these smelters, and with both smelters returning to full production). [042 Letter]

Response: General information about the existing capacity of the West of Hatwai (WOH) transmission path is provided in the *Need for Action* section in Chapter 1 of the Draft EIS. The proposed action would add approximately 800 MW of capacity to this path as compared to the existing summer rating with similar remedial actions. Scenarios with full production at Kaiser and Columbia Falls limit the generation available to cross the WOH path. They do not materially change the rating of the path, but only change the availability of resources in the area east of Spokane. Therefore, this information is not relevant to the environmental analysis of the proposed action.

Comment: How much capacity could be restored and added to the system by the proposed project when taken together with other planned projects such as the Libby to Bell 230-kV project under each of the scenarios mentioned above? [042 Letter]

Response: It is unknown what effect, if any, other possible transmission line improvement projects would have on the capacity of the system. In addition, because it is highly uncertain if projects being contemplated by BPA, such as the Libby-to-Bell 230-kV project, would actually be proposed or built, analyzing the effect of these other projects on system capacity would be highly speculative.

Comment: The capacity of the planned system under each of these scenarios needs to be compared with reasonably foreseeable generation projects being proposed east of Hatwai, including those proposed in Montana and north Idaho, to determine whether planned transmission system upgrades can handle reasonably foreseeable growth in generation. For the purposes of discussion, the reasonably foreseeable generation projects should include the following:

- Generation projects for which connection agreements have been sought pursuant to Federal Energy Regulatory Commission (FERC) regulations or where connection studies are planned or underway by Bonneville or a private utility,

- Those generation projects for which permit applications have been approved, and
- Generation projects for which permit applications have been filed with federal, state, or local agencies but are still in the permitting process. [042 Letter]

Comment: If the proposed project and other planned system upgrades are not sufficient to handle likely additional generation, then the final EIS should describe reasonable cost-effective enhancements to the proposed project or to the regional system so that the transmission system could handle likely additional generation. [042 Letter]

Response: The commenter suggests a regional analysis of generation development and transmission system upgrades that have not been proposed by BPA. As discussed in the *Need for Action* section in Chapter 1 of the EIS, BPA has proposed an action to address the need to relieve existing constraints specifically along the West of Hatwai transmission path. While future generating projects may necessitate additional transmission capacity on this path at some point in the future, the proposed action is intended only to address existing constraints on this path. An analysis of these future generation projects and any additional transmission lines built to transmit their power is thus beyond the scope of this EIS.

Scoping and Major Issues

Comment: We got a public letter in the mail talking about the public meetings dates, which we will attend, but we need another letter mailed to us, please. We just moved into this house July 15th. Signed papers in May or early June. Please give us the date the public was notified of this proposed project. The date of correspondence. This information was never disclosed to us and we never would have bought this house if we'd known. [004 Phone]

Response: BPA originally proposed a project similar to the currently proposed transmission line in 1993. However, that project was shortly thereafter cancelled. As part of the 1993 proposal, BPA distributed project letters and conducted public scoping meetings that notified interested parties of the proposal.

As discussed in the *Scoping and Major Issues* section of Chapter 1 of the Draft EIS, the EIS process for the currently proposed project was initiated in January 2002 with publication of a Notice of Intent alerting the public about BPA's intent to prepare an EIS for this proposal. In addition, BPA sent a letter to interested parties on January 14, 2002, that explained the proposal. This letter also announced three scoping meetings, asked for input on the focus of the environmental analysis, and provided project contact information. A second letter was sent out on March 22, 2002, that provided an update on the comments received by BPA and the next steps for the project. A third letter was sent on August 2, 2002, that announced the completion of the Draft EIS, invited interested parties to four public meetings that were being held to receive public feedback on the Draft EIS, and gave information on mailing comments to BPA. In

addition to the letters, BPA advertised the public meetings in local newspapers and on area radio stations.

Comment: When we purchased our home, we accepted the current lines. We were not told of any additional eyesore or health risks. [034 Letter]

Response: Public Involvement started on this project in January of 2002 when BPA sent letters describing the project to potentially affected landowners along the proposed project route as well as to other interested parties. Public Involvement for a similar project along the same project route was initiated approximately 10 years ago, but the project was cancelled. This EIS describes various alternatives considered but eliminated from detailed study. As explained in the transmission alternatives, adding a transmission line on existing right-of-way next to an existing transmission line can cause fewer visual, land use, and ground disturbance-related impacts than a new, totally separate line. Also, the need for new access roads can be kept to a minimum by using existing roads. Using an existing corridor also avoids the impact of having to clear miles of new 150-foot wide right-of-way. Although BPA's existing right-of-way can accommodate the new line for most of the project route, it is the responsibility of the EIS to address the impacts to landowners like you as well as to the environment and mitigate where possible.

Comment: Meetings during harvest do not provide opportunities to us. Is this on purpose? [011 Form]

Response: We apologize for the inconvenience to you in the timing of the meetings. The public open house meetings are held to inform the public about the proposed project, and involve them in developing the Environmental Impact Statement for the proposal. The timing of the meetings coincides with the points during the process of developing the EIS, where BPA needs to hear from interested and affected landowners and others. BPA held several public meetings during the day and in the evening hours to provide a variety of options for property owners and interested stakeholders to attend a meeting(s). Verbal and written comments from the public were accepted during the meetings. For those who could not attend one of the meetings, comments were also accepted electronically, on comment forms, or in letters before and after the public meetings to maximize public comment opportunities.

Comment: Thank you for the informative meeting. [013 Form]

Response: Bonneville appreciates your attendance and the positive feedback.

Comment: When did BPA decide to build a new line (relative to individuals' decisions to purchase homes near the ROW)? [040 Second Spokane Meeting]

Response: To clarify, BPA has not yet decided to build the proposed transmission line. A decision about whether to build this proposed line will be made in the Record of Decision (ROD) that BPA will prepare at the conclusion of the EIS process. In 1993, BPA proposed a project similar to the currently proposed transmission line, but this project was shortly thereafter cancelled. The current proposal was put forth to the public and interested parties by BPA in January 2002, as described in the *Scoping and Major Issues* section of Chapter 1 of the Draft EIS.

Comment: How much will public comment weigh in Administrator's decision? [040 Second Spokane Meeting]

Response: The Administrator is committed to gaining public input through the NEPA process before making decisions on transmission line projects. The Administrator provides direction to staff and makes agency decisions based on information about need for the project, technical feasibility, cost, benefits to the Pacific Northwest region and BPA's customers, and comments from the public on the proposed action. The Administrator believes in working with the public to develop the best solutions for providing reliable power to the Pacific Northwest.

Comment: Times have changed and the feelings of people and their mental comfort levels need to be addressed and taken into consideration. [027 Letter]

Response: Bonneville is concerned about impacts on property owners, Tribes, neighborhood groups and the environment. Hearing public concerns and developing ways to minimize impacts is a vital part of the project design process. BPA actively seeks involvement and comment from interested and affected people at appropriate points during the NEPA process for its proposed actions. As noted on page 1-5 of the Draft EIS, BPA has sent letters; published public notices; held public meetings to determine the scope of the project; met with individual landowners, citizen, and homeowner groups to discuss their concerns; and held public meetings to gather comments on the Draft EIS. Concerns voiced through meetings and comments are documented through the EIS process and have become part of the information that the BPA Administrator takes into consideration before deciding whether a project goes forward or not.

Comment: My concern is based on past dealings with large government agencies such as BPA. Even through mitigation lists address most concerns, it remains to be seen if any specific concerns will be addressed. Past experience suggests that you will do what you will do with little regards to any specific concerns of individuals. [003 Form]

Response: BPA has worked hard to solicit comments from the public and incorporate those in to its design and construction plan. BPA and the construction contractors will have land liaisons

to deal directly with adjacent landowners' concerns throughout the life of the project. Every effort will be made to mitigate specific concerns.

Proposed Action and Alternatives (Chapter 2)

Agency Proposed Action

Location

Comment: We assume that changes in the location of the new wires will all be within your present R/W. Is that correct? [007 Letter]

Response: Your assumption is generally correct. As indicated on page 2-3 of the Draft EIS, the location of the new transmission lines will all be within our present right-of-way with the exception of the first three miles outside of Grand Coulee Switchyard where BPA must acquire new right-of-way.

Comment: What's the existing voltage & what are you going to do & why? [040 Second Spokane Meeting]

Response: As indicated on page 2-3 of the Draft EIS, there are two 115-kV lines and three 230-kV lines. BPA plans to remove one 115-kV line and replace it with a 500-kV line. This will increase the power that can be transmitted from Spokane to Grand Coulee.

Towers

Comment: Your agency presented the project to our Public Policy Council in February, but at that time there were some problems identified in the project. Primarily, Whitworth College had a problem with the 175-foot, double-circuit towers that ran through its campus. Your agency committed to addressing those concerns at that time, and now your preferred alternative appears to have incorporated a solution that everyone can live with.

The Chamber would like to commend BPA for its responsiveness on this issue, as well as your efforts to keep our membership informed and connected to the overall transmission upgrade in our region. We feel our Chamber's existing position on energy encompasses the ability to support this project without amendment. [043 Letter]

Response: Thank you for your comment. BPA appreciates the support of the Chamber.

Comment: Lights required by FAA on tall towers. [001 Form]

Comment: Will the FAA require lights on towers? Will you put in permanent lights of any kind? [028 Form]

Response: The FAA typically requires BPA to identify all towers taller than 200 feet above the ground so that the FAA can determine whether marking or lighting is necessary for airway safety. Most of the towers in BPA's preferred alternative are typically 125 feet tall. Two short sections would have towers that are typically 175 feet high. Some towers may be over 200 feet tall. As noted on page 4-21 of the Draft EIS, BPA will be coordinating with FAA regarding structure locations and heights, and may mark or light only a small number of towers, if any.

Comment: Costs of design-engineering standards - capability of double circuit. [015 Form]

Response: BPA currently has a standard tower that is capable of double circuiting so there is no cost for design. The increase in cost for double circuiting is in material and construction costs.

Comment: Should have standardized design. [037 Coulee Dam Meeting]

Response: BPA has a standardized tower and conductor design that we are utilizing for this project.

Comment: Concerned that tower legs will be in the road that accesses my house. [039 First Spokane Meeting]

Comment: Tower will go in driveway (Woods Road & Coulee Hite) Structure 67-1. [040 Second Spokane Meeting]

Response: BPA will work with landowners to assure that towers do not cause problems with accessing their property. If the tower legs do fall in your access road, BPA will either work with you to move the road or move the tower.

Comment: Limit the height of towers to 125 feet. [041 Letter]

Response: BPA has chosen the option of using shorter single-circuit towers for most of the line through Spokane as its preferred option. To accommodate placing these towers next to the existing towers, the heights will typically be 125 feet. Some will be higher and some will be shorter.

Conductors

Comment: Could newly developed Aluminum Conductor Composite Reinforced (ACCR) wire be substituted for Aluminum Conductor Steel Reinforced (ACSR) wires to increase the ampacity beyond that of the proposed line in a cost effective manner to accommodate other proposed projects? According to Western Area Power Administration (2002) ACCR conductor may be available late in 2003. [042 Letter]

Response: The conductor planned for use on this project (3-1.3 In ACSR/TW Deschutes) has a summer rating of 4560 amps (3949 MVA) per BPA standards. By comparison, the normal maximum expected loading is approximately 1800 amps. The primary consideration for sizing the conductor for this project is to minimize real power losses. The rating is high enough that it will not be the limiting factor for loading on the West-of-Hatwai path. Following completion of the Grand Coulee-Bell 500-kV line, the loading on the path is expected to be limited by loading on 230-kV and 115-kV lines in the area following contingencies.

Additional Features of the Proposed Action

Comment: The Summary fails to mention that additional substations will be modified under the proposed action. Briefly describe these substations and the modifications at each. We understand that additional series capacitors would be added at Garrison Substation in Montana, within the existing footprint of the substation. [042 Letter]

Response: The Summary inadvertently left out information pertaining to two actions outside the project area that relate to this project, although the information is found in Chapter 2 of the Draft EIS (page 2-8). The Summary information should have included the following: "Outside of the project area, one group of series capacitors would need to be installed on an expanded site at the Dworshak 500-kV Substation, and existing series capacitors would need to be replaced within the current boundary of the Garrison 500-kV Substation." That language will be added to the Summary.

Comment: Locals gave access to serve locals (Inland Power). Expanded use impact is not addressed. [011 Form]

Response: Although some of Inland Power & Light's load is served via the Grand Coulee-Bell 115-kV line (as indicated on page 2-7 of the Draft EIS], the Grand Coulee-Bell transmission corridor is used primarily for inter-area bulk transfer of power. This has not changed since the original 115-kV lines were constructed in 1938.

Comment: Planned improvements to the Garrison 500-kV Substation consisting of replacement of existing series capacitors are described on page 2-8 of the draft EIS. Describe why these

changes are necessary for the proposed action and whether (and how much) existing transmission capacity would be increased because of the replacement of capacitors at the Garrison Substation. Discuss both alleviating existing congestion and allowing for additional generation in Montana. [042 Letter]

Comment: The draft EIS addresses environmental impacts of constructing the 500 kV line and of the No Action Alternative. It also includes an updated review of literature related to electromagnetic fields. However, additional detail is needed to describe impacts that may result from upgrading the series capacitors at Garrison Substation in Montana. [042 Letter]

Comment: The document does not adequately describe the actions proposed for Garrison Substation in Montana and does not describe the nature and degree to which impacts would materially change as a result of the proposed replacement of series capacitors. On page 2-1, the draft EIS notes that existing series capacitors would be replaced at Garrison Substation in Montana and page 2-8 notes that this replacement would occur within the current boundary of the substation. Does this mean that the existing series capacitors would be replaced with larger series capacitors? How much larger, what are the physical dimensions? Do these capacitors contain oil or some other fluid? If so, how much fluid would be contained within each, what is the total existing volume, and what would the total proposed volume be? [042 Letter]

Comment: How would existing series capacitors and eventually the proposed series capacitors be disposed of at the end of their useful life? Would the series capacitors be installed within a secondary containment system sized to handle a spill from the devices plus rainfall and snowmelt from a large storm? If filled with fluids, how frequently do these fluids leak and how are leaks detected? If fluids are used, how toxic are they? Is there any potential for spills from the replacement of series capacitors to adversely affect surface or groundwater and associated resources? How much of a change in noise levels would there be at the Garrison Substation? Would any changes in noise levels be noticeable to nearby residences? [042 Letter]

Response: The series capacitors at Garrison on the Taft 500-kV lines (2 banks) will actually be replaced, not upgraded. The changes are necessary at Garrison because the existing series capacitors will overload when the series capacitors at Dworshak and Bell are added. This causes additional loading on the 500-kV portion of the Montana-Northwest interconnection and overloads the series capacitors at Garrison (the series capacitors are very near their limit before this project). The replacement of the series capacitors will not increase capability from Montana.

The capacitors will be installed in the same location as the existing capacitors but will occupy a slightly larger footprint within the existing capacitor yard. A small separate platform will be installed adjacent to the present capacitor location to support a portion of the equipment. The series capacitors on the west (Taft) side of Garrison Substation will be upgraded from 1091 amps to 2000 amps rating while maintaining the original ohms impedance. The amp rating will then match that of the series capacitors on the east (Broadview) side of Garrison Substation. The replacement capacitors will be larger than the existing ones. They will measure 40 inches tall to

the top of the bushing, 16.5 inches wide to the ends of the mounting ears, and 7.25 inches thick, and will weigh 129 pounds each. Expected service life of series capacitors is 25 years.

Non-PCB capacitor fluids are synthetic oil consisting primarily of hydrocarbons. The approved method for disposal is to send them to an approved facility that burns them for energy recovery. With respect to toxicity, the Electric Power Research Institute (EPRI) conducted an evaluation of the capacitor fluids used by BPA. The results of these studies are found in the following report: *Non-PCB Capacitor Fluids Used in the Power Industry: Chemical Composition and Dissolution Characteristic, EPRI, Palo Alto, CA. and Bonneville Power Administration: 1999. TR-113974* which is hereby incorporated by reference in this EIS. EPRI concluded that non-PCB capacitor fluids are synthetic oil consisting primarily of hydrocarbons. There is no potential for spills to adversely affect surface or groundwater. Capacitors are routinely inspected for signs of rust/deterioration, bulging, leaks, and blown fuses. Each capacitor will contain approximately 3.9 gallons of fluid and be situated in a rack above the substation yard. Leaking capacitors are replaced and disposed of properly and all spills are promptly cleaned up. All surface and subsurface drainage from the substation yard is directed to oil containment ponds. There is no potential pathway to Independence Creek, located approximately 1,800 feet to the south of the substation, and the water table depth is approximately 103 feet.

Construction activities create noise that is short term and typically does not cause any serious disturbances to residents. As indicated on page 3-21 of the Draft EIS, the overall noise caused by the conventional equipment involved in construction is estimated to be 89 dB L_{eq} at a reference distance of 50 feet. Noise produced by construction equipment would decrease with distance at a rate of about 6 dB per doubling of distance from the site. Because Garrison Substation is located in an area of sparse development and population, noise impacts during the capacitor replacement activities are expected to be low. Post-construction ambient noise levels at Garrison Substation should remain at the current level.

Comment: Describe how rebuilding series capacitors at the Garrison Substation in Montana would increase transmission capacity of the system. Describe how much capacity would be added. [042 Letter]

Response: The existing capacitors will actually be replaced, not rebuilt. The existing series capacitors operate at nearly 100 % of rating when the Montana - NW transfers are at maximum. Studies show that when series capacitors were added at Bell and Dworshak as a necessary part of the Grand Coulee-Bell line project to insure system stability, the existing series capacitors at Garrison overloaded. This created the need to replace the Garrison - Taft series capacitors with higher rated banks. Also, the existing capacitors are not rated to stay in service (rating of 1090 amps) when the parallel line is out of service; therefore, this will also help maximize transfers from Montana during outages. The replacement capacitors will be rated at 2000 amps, which matches the rating on the Garrison-Broadview series capacitors. And lastly, the protection equipment on the existing series capacitors is failing and needs replacement. The replacement of

the Garrison - Taft series capacitors will not result in any additional capacity on the Montana - NW path. However, it is highly likely that if the Montana - NW path rating is increased in the future, a part of that plan would include replacement of the existing Garrison - Taft series capacitors. Provisions have been made in the procurement of the new capacitors to increase their rating beyond 2000 amps to be consistent with potential future upgrades of the Montana - NW interconnection.

Construction

Comment: We have another concern: When proceeding with construction of Grand Coulee-Bell 500-kV, KEC-4 on your Right of Way across our property in Grand Coulee, we would appreciate your using U.S. Government land and not our unencumbered land to enter and exit the various work areas and to park vehicles along your R/W on our property in Grand Coulee. The reason for this request is that the more traffic there is over our unencumbered land the more noxious weed seeds will spread. Washington Noxious Weeds Control Board in Ephrata strictly enforces the Noxious Weeds Law, complying with that law has become a great financial burden for us. So we hope you'll understand our request. [007 Letter]

Response: Thank you for your comment; your request is noted. BPA and its contractors will develop an aggressive program to limit the spread of noxious weeds during construction, and will continue its long-term maintenance efforts to help landowners control weeds along the right-of-way.

Comment: Costs of construction. [015 Form]

Response: The total cost of the project is estimated at $152,000,000.

Comment: Who pays and will it affect my utility bill? [040 Second Spokane Meeting]

Response: The cost of constructing this project is part of BPA's existing capital program and is already built in to the rate structure. The ratepayers of the Pacific Northwest region pay for all operation and construction costs required to continue to provide safe, reliable power to the Pacific Northwest. If you have additional questions about rate structures, please call the Project Manager, Mark Korsness at 360-619-6326.

Comment: Clean up junk dumped and replace culverts to depth of appropriateness to pre-eroded road bases and net or stabilize steep service road banks. [011 Form]

Response: Thank you for your concern. There is no location given for the culvert that you are referring to, but if a culvert needs replacing, BPA plans to replace it with a bigger culvert at the

proper elevation. All culverts will be installed per design documents. Erosion control will be installed using best management practices (BPMs). All BPMs will be installed by an independent professional subcontractor. BPA will install proper erosion control measures.

Comment: Security fences and lights if planned. [001 Form]

Response: BPA will ensure that its contractors use appropriate means to light and secure the construction sites. We encourage all parents to instruct their children not to trespass and not to play in or near any construction sites.

Comment: Lengthen quiet hours during construction to protect evening family time. [001 Form]

Response: BPA will work with its construction contractors to establish an appropriate no construction window each day to minimize impacts from noise.

Comment: Complete short sections of line quickly vs. create a long-term construction area. [001 Form]

Response: All construction activates will be completed as quickly as possible. Line work will be done in phases starting with the removal of the existing line, followed by the foundation crew, the erection crew, the stringing crew, the clipping/deadending crew, and finally by the clean up crew. Erosion monitoring and control will be done before, during, and after the construction process. BPA will rely heavily on the planning ability of its construction contractors to develop an efficient construction schedule and work sequence.

Comment: While these surveyors are on location, would you please instruct them to install a few surveyor markers indicating the boundary of your R/W as it abuts our unencumbered land. [007 Letter]

Response: A land liaison will contact you before construction begins. If you can make this request to him/her at that time, we would be glad to mark the edge of right-of-way for you. If you need it done before then, please call the Project Manager, Mark Korsness, at 360-619-6326.

Comment: Why has preliminary work started on installation of the new transmission lines if the Environmental Impact Statement hasn't yet been completed? How can alternate solutions and public opinion be considered if the BPA is going ahead with installing the power lines? [025 Letter]

Response: BPA has not started installing new lines for this project. We have done surveying, tree marking, and have replaced some wood poles as maintenance as prudent measures in case a decision should be made to proceed with the proposed project.

Comment: Wood poles should be completely removed. Don't leave in the ground! [037 Coulee Dam Meeting]

Response: As noted on page 2-12 of the Draft EIS, BPA will either completely remove the poles or cut them off well below the ground surface in most areas. In sensitive areas, BPA may cut the poles off at ground level to limit ground disturbance.

Comment: Roads- need to be honored and citizens within county - no heavy loads when citizens have to obey- contractor should honor same. [014 Form]

Response: All citizens and roads will be honored and respected. If required, the contractor will obtain a special county permit to travel on roads. No road weight limits will be violated. The contractor will obey all traffic signage and laws.

Comment: Make sure the workers do not hunt all the game out of the area. [020 Form]

Comment: Be sure the crews that are performing any work do not poach wildlife as crews have done in the past. Our ranch has fee hunting and this is our livelihood. [021 Form]

Response: The Contractor is not allowed to carry a weapon on the ROW; therefore, no hunting by the workers will be allowed.

Comment: Will we monitor crews to prevent wildlife poaching? [037 Coulee Dam Meeting]

Response: Anyone caught poaching will be punished to the fullest extent of the law. The Contractor will also be in violation of the contract (no weapons are allowed on the right-of-way) and will lose profit. The employee will be terminated from the project.

Comment: Equipment: How many concrete trucks, crane trucks, dual-tired trucks can we expect? [039 First Spokane Meeting]

Response: During the removal stage of construction, cranes and a variety of other trucks will be used to remove the existing wooden structures and conductors. During tower construction and

conductor stringing, two cranes, four trucks, a large crane, and eight dual-tired trucks will typically be used. Traffic will be kept to a minimum as much as possible.

Comment: Make contractors responsible for cleaning up garbage! [037 Coulee Dam Meeting]

Response: The Contractor will be fully responsible for cleaning up garbage.

Alternative Action

Comment: The EIS should be revised to more fully discuss the alternative action, which appears to be more beneficial for future transmission needs than the agency's proposed action. According to the EIS (Ch. 2-13), this alternative "would anticipate and provide for potential unknown future transmission needs without needing to find a new route out of the Bell Substation for another 500- kV line at a later date if the need should arise." [044 Letter]

Response: The EIS adequately discusses the alternative action; this alternative is described in Chapter 2, and the environmental effects of this alternative are analyzed in Chapter 3 of the EIS. As discussed in these chapters, while this alternative would allow more flexibility in meeting potential future transmission needs, it would result in greater visual effects due to the increased height of the double-circuit towers through populated areas.

Comment: The alternative action (double circuit from mile 73 to Bell) would be a blight on the skyline for our neighborhood. Please do not build a double circuit through the Little Spokane Valley. [010 Form]

Comment: Living adjacent to right of way (north side) config #6. Opposed to the double-circuit alternative. Support the single-circuit tower as this option would have much less negative visual impact and corresponding property value depreciation. Thank you. [012 Form]

Comment: Visual impacts of the bigger towers. [013 Form]

Comment: I prefer the single-circuit option. The double-circuit option will impact my view. [040 Second Spokane Meeting]

Comment: Prefer single circuit no taller than existing double-circuit 230-kV line. [040 Second Spokane Meeting]

Comment: Concerned about visual impacts of taller towers. [040 Second Spokane Meeting]

Comment: We would not accept the double-circuit (175') towers described as our alternate. [041 Letter]

Response: Thank you for your comments. Because of comments from adjacent landowners during the scoping process for the environmental impact analysis, BPA has identified the option of using the shorter single-circuit towers as its preferred alternative through the Spokane area in this Final EIS. The height of towers will typically be 125 feet, depending on topography and span. Double-circuit towers would only be used for two short distances where the right-of-way is severely constrained and requires putting the remaining wood pole 115-kV line on the same tower as the new 500-kV line. The commercial area between U.S Highway 2 and Hawthorne Road is such an area.

Comment: For the description of the Alternative Action (page 2-13), describe how much additional transmission capacity would be provided by constructing a double-circuit rather than a single-circuit 500-kV line for an additional 9 miles west of Spokane. To what extent does this alternative address transmission capacity that may be needed for reasonably foreseeable generation projects in the region? [042 Letter]

Response: The construction of double-circuit line for 9 miles does not provide additional transmission capacity. Only if the second circuit were extended to a hub much further to the west or south (such as Ashe Substation in the Hanford area), would it potentially provide additional capacity. The purpose of the alternative action of 9 miles of double-circuit construction is to avoid the need to find a new route out of Bell Substation for another 500-kV line at a later date if the need should arise.

No Action Alternative

Comment: While we have no reason to disagree with the underlying need to resolve the current and projected lack of transmission capacity in the region, the EIS needs to discuss what happens if the line is not built by 2004. [044 Letter]

Response: As noted on pages 2-13 and 2-14, if the line is not built in 2004, BPA would need to continue to curtail generation west of Spokane. This would likely cause upward pressure on power prices, cause hydro generation to spill water instead of generating power, curtail use of low-cost Montana coal-fired generation, and reduce the reliability of the transmission system.

Alternatives Considered but Eliminated from Detailed Study

Comment: These towers should be buried underground regardless of the price. Money is no substitute for a healthy safe environment. [023 Form]

Comment: Why is burying the line not cost effective? [040 Second Spokane Meeting]

Comment: What has happened with the underground option? What is the cost of the underground option? [040 Second Spokane Meeting]

Comment: I prefer that the line be put underground. [040 Second Spokane Meeting]

Comment: We feel that the draft EIS for the Coulee Bell Transmission Line Project is incomplete. It did not even mention the possibility of burying the power lines although this was requested by several neighborhoods associations at earlier scoping meetings. We feel that this should be done for the seven miles immediately west of the Bell substation. This area is heavily developed and residential, with many homes built by developers immediately adjacent to existing power lines. This produces an economic loss for homeowners due to the lines negative visual impact. [033 Letter]

Comment: Years ago as the city expanded, we were required to bury the lines that go to our homes. Isn't it about time that BPA did the same thing? [026 Letter]

Comment: All that I am asking is that you put people first. Burying the lines that go through Spokane would show that you care about this community and the people in it. [026 Letter]

Comment: Please reconsider burying the lines in the residential areas of Spokane. The geological make up in the Indian Trail area is sand. (The cost could not be ten times.) [034 Letter]

Comment: Without fully knowing the health effects, please bury these new lines! Our waste to energy plant is still a major concern. [034 Letter]

Comment: I don't believe new towers on the 84-mile line should replace the current ones. If we need new ones they should be buried. [002 Phone]

Comment: The only way to make sure the environment is protected in every way is to either not construct the additional Grand Coulee Bell Transmission Line or to bury the line where it passes through the eight miles of Spokane residential neighborhoods. [028 Form]

Comment: Do not build the new GCBTL or bury them. [028 Form]

Comment: Do not build the new transmission lines at all or bury them through the 8miles Spokane residential neighborhoods. [029 Form]

Comment: No new lines or bury them. The health of our families and the effects on the environment should be the most important factor- not money. [029 Form]

Comment: There are 3 or 4 already existing huge power lines running behind our home. Couldn't these be combined or buried? Another power line (drawing of a face with a grimace/frown on it). [005 Form]

Response: As discussed in Chapter 2 of the EIS, burying the transmission line underground was considered for the proposed project, but this alternative was eliminated from detailed study. Burying the lines is not consistent with BPA's goals, identified in Chapter 1 of the EIS, of providing low cost and reliable power to the ratepayers of the Pacific Northwest, and minimizing environmental effects.

Further, based on the analysis presented in the *Public Health and Safety* section of Chapter 3 and Appendix B of the Draft EIS, the proposed action would not pose significant health and safety risks. While the health effects from transmission lines are not fully known, the EIS includes relevant available information concerning potential health effects from transmission lines, as well as a reasonable analysis of potential health effects from the proposed line based on expected electric and magnetic field levels. Because these levels would not be expected to differ significantly from existing levels in residential areas, the proposed project would not represent a significant change from existing conditions. A possible exception is an area of commercial use located at Hico Village Northpointe near U.S. Highway 2. Most homeowners would not see an increase in magnetic fields off BPA's right-of-way; therefore, no adverse health effects from the proposed overhead transmission line would occur.

As noted on page 2-16 of the Draft EIS, burying the high voltage transmission line would cost 10 to 15 times the cost of building it overhead. This is due in large part to the cost of manufacturing this type of high voltage cable and the cost to install and maintain (rather than the kind of geological conditions that are present). Burying high voltage transmission cable is a much more expensive technology then burying low voltage distribution lines to a residence, and has much greater environmental effects. Burying high voltage lines would result in significant surface and subsurface disturbance, noise and air quality impacts, and risk of line damage or failure.

With respect to residential uses that exist along the portion of the proposed line near the Bell substation, the proposed action would not be expected to result in significant effects to property values along the proposed line (see discussion in the *Socioeconomics* section in Chapter 3 of the Draft EIS and further discussion under *Socioeconomics* in this section of the Final EIS). As noted by the commenter, an existing transmission corridor passes through the residential area. Five transmission lines are currently located in this corridor. The proposed line would be located generally within this corridor where it passes through residential areas, and would be developed along this portion by removing an existing lower-voltage line and replacing it with the higher-voltage proposed line. BPA has identified mitigation measures throughout Chapter 3 of the Draft EIS to minimize or avoid effects on surrounding communities. As discussed in the *Visual Resources* section in Chapter 3 of the Draft EIS, various measures would be implemented to minimize the visual impact of the proposed action. These measures include using shorter towers,

placing them next to the existing towers, and dulling the finish on the new steel and wire to make them less shiny.

The No Action Alternative is one of the alternatives being considered by BPA and is described in the Draft EIS in Chapter 2. Combining the new line with one of the existing lines would require building very large double-circuit towers that would have much more of a visual impact than the proposed single-circuit towers. Taking an extended outage on one of the existing lines so it could be rebuilt, or for repair work, would also be very difficult.

Comment: Remove wood pole lines and replace with one steel tower all at once. [020 Form]

Comment: Take out all wood poles replace w/ steel towers lining up w/ existing towers. It is difficult to farm around staggered wood poles. [006 Form]

Comment: Reconsider removal of both wood poles lines and replace with 500kV. Would have less impact on land and environment. [014 Form]

Comment: Remove both wood tower lines and replace with one 500-kV steel towered line at one time. This would have less environmental impact or damage. [021 Form]

Comment: Why not take both wood poles out and put 1 - 500 KV in their place? [037 Coulee Dam Meeting]

Comment: Maintenance would be less if both wood poles were gone right? [037 Coulee Dam Meeting]

Response: Although maintenance would be less, the most cost effective plan is to remove one wood pole line and build a steel line in its place. Since the other existing wood pole line is operating well, it would not be consistent with BPA's goal of providing low cost power to remove the second line and build a double-circuit line. This would nearly double the cost of the transmission line. In addition, BPA needs to retain one wood pole line at the lower 115-kV voltage to serve the local utility customers between Spokane and Grand Coulee (see page 2-7 of the Draft EIS). The new steel towers would require fewer structures per mile than the existing wood pole line that is being replaced. We understand that two towers close together limits farming in between them.

Comment: Temporary measures (such as Remedial Action Schemes) that are being implemented to restore capacity to the transmission system need to be described in the EIS. Identify why these measures should or should not be continued. Describe how much capacity these temporary measures are able to restore and how much they are able to reduce congestion. [042 Letter]

Comment: Alternate management schemes for making better use of the path capacity should be described and an explanation of why they are not currently used needs to be provided. There should also be an evaluation of alternate levels of risk that could be accepted. (For example, current rules do not allow scheduling against reverse flows. Additional risk might be minimal if scheduling was allowed against reverse flows that are highly likely to occur.) If any such alternative makes economic sense but is unavailable for any reason, the document should explain why and what would be required to make it available. [042 Letter]

Response: BPA's current use of remedial action schemes to temporarily manage constraints on the West of Hatwai transmission path is noted in the *Need for Action* section in Chapter 1 of the EIS. These schemes are described on pages 2-15 to 2-16 of the Draft EIS. The detailed systems planning information concerning these schemes that is requested by the commenter is outside the scope of this EIS and is not directly relevant to the environmental analysis of the proposed action. As noted in the EIS, these schemes do not fully address the need for additional capacity on this transmission path and, thus, implementation of these schemes for the proposed action was considered but eliminated from detailed study.

Comment: Lastly, the document should evaluate the cost and feasibility of buying back contractual rights to use the path sufficient to avoid over scheduling. [042 Letter]

Response: As discussed on pages 2-20 to 2-22 of the EIS, BPA considered various non-transmission alternatives (i.e., alternatives that would not involve a new transmission line) for the proposed action. However, these non-transmission alternatives were eliminated from detailed study because they would not fully address the existing transmission constraints. Buying back contractual rights to use the path creates the problem of bottlenecking generation in Montana that is dedicated to load west of Spokane and that would make the resource investment made by many NW utilities unusable. From a cost/benefit standpoint, this is not a viable solution because it will likely be more costly than building the proposed Grand Coulee-Bell 500-kV transmission line project, and it would not alleviate the need for the project to relieve congestion along the existing corridor.

Affected Environment, Environmental Consequences, and Mitigation (Chapter 3)

Introduction

Comment: We are concerned about the manner in which expected impacts related to the proposed project have been described in the Draft EIS, particularly with respect to the effectiveness of recommended mitigation measures. [044 Letter]

Comment: Insufficient baseline data have been collected to truly understand where specific project impacts would occur and where appropriate mitigation measures should be applied. A strategy to define and implement meaningful measures to avoid, minimize or compensate for project-related effects has not been developed. [044 Letter]

Comment: The EPA recommends that the EIS be revised to include characterizations of effects that reflect sufficient site-specific knowledge of the specific resources at risk and the implementation of mitigation measures that would be used with project implementation. [044 Letter]

Response: The analysis of the proposed action in the Draft EIS provides sufficient detail to allow a meaningful understanding of the impacts of the proposed action. Mitigation is identified in the Draft EIS with the level of specificity required by NEPA.

BPA believes it has collected sufficient baseline data to understand project impacts. As discussed in Chapter 3 of the Draft EIS, baseline data were collected through site-specific surveys and reviews of existing maps, literature, and other data for the proposed transmission corridor. Potential impacts of the proposed action were evaluated by identifying the impact areas that could be affected by the proposed action, collecting data for various resources within and adjacent to the transmission line corridor, and determining the potential acreage of permanent and temporary impacts from transmission line construction and operation (including from construction of transmission towers and access roads) within the corridor. In some cases, follow-up studies have or will be conducted to confirm the results of the initial assessment contained in the Draft EIS. The analysis of the proposed action in the Draft EIS thus provides sufficient detail to allow a meaningful understanding of the impacts of the proposed action.

Regarding mitigation, BPA has identified potential measures in the Draft EIS to avoid, minimize, and compensate for the expected effects of the proposed project. These measures are appropriately defined for the Draft EIS. In its record of decision (ROD) for the proposed action, BPA will document which mitigation measures it has adopted if it decides to proceed with the proposed action. BPA will also prepare a mitigation action plan for the project that would be included in the construction specifications.

Comment: The Final EIS should also discuss induced effects since this project could lead to more housing developments, power plants and transmission lines being built. See (40 CFR 1508.25 (a). [044 Letter]

Response: As discussed on page 1-2 of the Draft EIS, the proposed transmission line is needed to address an existing constraint in BPA's transmission system involving moving power from existing generating sources in Montana to load centers such as Seattle, Washington, and Portland, Oregon. In essence, the system is currently constrained in moving power from east to west. It is expected that the power that would be moved from east to west by the proposed action

would generally serve existing customers in the west over existing distribution lines. Thus, BPA reasonably expects that the project would not result in the growth-induced effects mentioned by the commenter. Furthermore, even if the proposed project were to somehow lead to some additional development, the location and quantity of this development would be highly uncertain, and any attempt to estimate environmental effects related to any such development would be extremely speculative.

Land Use

Comment: Area of shopping/business/residential planned in area of Pinewater Plaza (Pente, Developer/Duane Nelson Owner). (83/1 to 83/3 wood pole line.) [040 Second Spokane Meeting]

Response: Thank you for bringing this information to our attention. It has been added to the *Land Use* section of Chapter 3.

Comment: I walk dogs in part of the impacted area. It would be nice to continue to have access to this space. On the other hand, if there were some way to keep motorized vehicles out (trucks, ATV's) there would probably be less dumping of trash, broken bottles, etc. in the easement. [009 Form]

Response: Local residents would continue to have the same access to the right-of-way that they presently do for casual use such as dog-walking, except during the times of actual construction activities, when access may be restricted for public safety. Legal access to the right-of-way by local residents will continue to be dependent on that allowed by the landowner. BPA does not own the land along the right-of-way, only an easement across it. BPA has installed barriers to restrict motor vehicle traffic and reduce unauthorized dumping in the easement where warranted. For instance, fencing was recently installed along Indian Trail Road to deter unauthorized use of the easement at the request of adjacent residents. BPA also plans to install fencing at Nine Mile Road on the east side of the road to deter unauthorized use on that part of the corridor. If the problems continue, or new ones arise, please contact BPA's Real Property Services by calling 1-800-836-6619 and ask to be connected to the Field Realty Specialist in our Spokane Office.

Comment: Interested to see if location of Preferred Alternative impacts North Dam Park. [037 Coulee Dam Meeting]

Response: The Preferred Alternative would cross over the area of North Dam Park. As noted on page 3-13 of the Draft EIS, further development of the park could be impacted. The new line would be adjacent to the corridor of the existing Grand Coulee-Hanford line that crosses over the large gravel area east of the ball field, and west of the ice-skating rink. BPA would be working

with the City of Grand Coulee throughout the project to coordinate tower placement and to help mitigate impacts to the park.

Comment: Concerned about width between structures being less than 70 feet as sprayers are 70 feet in width and other equipment is 67 feet in width. Won't be able to farm between existing & new towers. [037 Coulee Dam Meeting]

Response: Concern noted. It is possible that the width between structures will be less than 70 feet in some cases and may impact your ability to farm between existing and new towers, as noted on page 3-12 of the Draft EIS.

Comment: At structure 66/5 – access from East rather than across cultivated fields if possible. [040 Second Spokane Meeting]

Response: Thank you for your concern. There will be traffic from both ways to 66/5; however, the majority of the traffic to the tower will be from the east.

Comment: At the informational meeting I was not given much assurance that the access roads would not be blocked. I also feel there are no provisions for limiting delays. I would like to know that I will be able to get in and out of my residence without delays. I know once the sub contractors get the bid their first concern will be to complete the job and will have no concern for the local residents. Something needs to be done in the contracts! [024 Form]

Comment: Include in the bid information to the subcontractors that the access roads are used by local residents and delays should not exceed 10 minutes. [024 Form]

Response: Thank you for your concern. Every effort will be made to work with the local residents to assure delays are held to minimum. The Construction Contractor will be using a full time land liaison to address all landowner concerns.

Comment: Concern about future use of area between Avista & BPA ROW on Whitworth campus. [039 First Spokane Meeting]

Response: BPA has secured rights in the form of easements across public and private land on which it has built the existing transmission lines. BPA permits activities on its rights-of-way consistent with those easement documents that do not interfere with the construction, maintenance, and operation of its transmission lines. BPA does not have control of activities off its rights-of-way.

Comment: Currently have trespass issues. [039 First Spokane Meeting]

Response: BPA's policy for its employees and contractors is to use public access roads and BPA easements to access BPA transmission line rights-of-way, and trespassing is not authorized. If you have any trespassing issues involving BPA employees or contractors during construction or maintenance of the proposed project, you may contact BPA's Real Property Services by calling 1-800-836-6619 and ask to be connected to the Field Realty Specialist out of our Spokane Office to discuss the trespass issues.

Comment: Concern about security (vandalism, sabotage). [040 Second Spokane Meeting]

Response: BPA is also concerned about security and vandalism. Anyone who sees or suspects crime to the BPA transmission system or property can be a crime witness by calling toll free 1-800-437-2744. The Crime Witness hotline is confidential. Hotline personnel will ask questions about the reputed crime. This information will be used in pursuing an investigation with local law enforcement agents. Cash awards of up to $1,000.00 will be paid to Crime Witness informants who provide information that leads to the arrest and conviction of persons committing the crime. Please refer to the following website for more information: http://www.transmission.gov/orgs/t/tr/crimewitness.cfm.

Comment: Restoration of pastureland: Re-seed area under towers i.e. pastures (dry) seed mix. Davenport Seed good source of information and dry land pasture mix. [037 Coulee Dam Meeting]

Response: BPA's construction specifications will state that the contractor must restore disturbed sites and reseed as indicated on page 3-96 of the Draft EIS. Comment noted regarding the recommended seed mix.

Comment: New Alfalfa planted this year (4/2002) between 69/8 & 70/2. How will work affect that field? [039 First Spokane Meeting]

Comment: Provisions to lessen damage to surrounding crops, pasture and wildlife. [021 Form]

Comment: Make sure contractor is responsible to restore ROW & roads to present/previous condition. Past problems with equipment & contractors leaving damaged roads and property and not restoring them. [037 Coulee Dam Meeting]

Comment: Payment for crop damage should reflect the true value of the land prior to damage (cropland, rangeland); should reflect the value that the landowner has invested. [037 Coulee Dam Meeting]

Comment: What about mitigation for damage done to property that is not agriculture? You only mention 'Crop damage". [037 Coulee Dam Meeting]

Response: BPA's construction specifications will state that the contractor must restore disturbed sites to equal or better than its original condition. Sub-soiling is required in cultivated land (see page 3-96 of the Draft EIS) and disturbed non-cultivated areas must be reseeded. The construction specifications will state that the contractor must take all reasonable precautions to avoid or minimize damages to crops, trees, irrigation lines, drain fields, fences, gates, soil etc. Damages to irrigation lines, drain fields, fences, gates etc. caused by BPA's construction activities will either be repaired or compensation will be paid to the landowner. In order to minimize soil compaction and rutting, the construction specifications will state that the contractor must attempt to maintain a single track, not to exceed 20 feet in width, within the transmission right-of-way.

Landowners will be compensated for damages to crops as noted on page 3-17 of the Draft EIS. Compensation is based on the value of the crops lost, using the normal replacement period, or normal life of the crop, whichever is less. If the replacement period is utilized, the cost of establishing the plants would be included.

Comment: Single track preferred over multiple tracks across property. [039 First Spokane Meeting]

Response: The new transmission line would be located primarily in an existing BPA corridor as describe on page 2-3 of the Draft EIS. The existing corridor, over most of its length, has five transmission lines on four rows of structures. To make room for the new transmission line, BPA would remove its Grand Coulee-Bell No.1, 115-kV wood pole transmission line, and replace it with the 500-kV line on new lattice steel towers. A few areas have been identified where BPA needs to acquire additional width right-of-way to accommodate the new 500-kV transmission line. BPA will make every effort to limit travel between tower sites to a single track to limit disturbance.

Comment: Please provide us with a site plan indicating where we could construct drives, parking and building structure in relation to the towers. [041 Letter]

Response: No buildings or structures are allowed within the BPA transmission line right-of-way. For information on using the land within a BPA right-of-way, call BPA's Public Information center at 1-800-622-4520 and ask for the following publication: "Landowner's Guide to Use of BPA Rights-of-Way" (DOE-BP-3025) or access the document using BPA's website at: http://www.transmission.bpa.gov/orgs/t/tr. Landowners can apply for a permit to construct drives or parking lots. BPA will consider those on a case-by-case basis.

Comment: Will the BPA oppose a park that close to the power lines. If so we will have no park. I feel that we are being asked to give up property values, quality of life and possible health problems. This is too big of price. Please consider moving the lines further north or putting them underground when they pass through a neighborhood. It's unfair to say it is too expensive for you and not consider the cost to us. [032 E-mail]

Response: Parks can be compatible with BPA power lines. BPA easements do not permit uses that might interfere with operating and maintaining our facilities. No structures or buildings can be placed on the right-of-way. No storage or transfer of flammable materials, such as gas or oil, is allowed within the right-of-way because of fire hazards and safety problems.

EMF studies for the proposal found that levels at the edge of the right-of-way in the residential areas either stayed the same, or decreased (see the *Public Health and Safety* section in Chapter 3 of the Draft EIS). Undergrounding the transmission line was considered and eliminated not only because of the high costs of installation and maintenance, but also because there would be higher environmental impacts and the lines would be less reliable (see Chapter 2 of the Draft EIS and the discussion under *Alternatives Considered but Eliminated from Detailed Study* in this section of the Final EIS).

For property values see Chapter 3 of the EIS, *Socioeconomics, Property Impacts* and the discussion under *Socioeconomics* in this section of the Final EIS.

Comment: ROW- maintenance; landowner rights and payments; grazing use; recreational use. [015 Form]

Comment: Guidelines of land purchasing - Legal description of old and new right of ways. [022 Form]

Comment: For compensation, how do you determine what you pay landowners? [037 Coulee Dam Meeting]

Response: Trees and brush must be controlled on the right-of-way, either by the landowner or BPA. Unless other arrangements are made, BPA will control the trees and brush and the landowner is relieved of the responsibility. If the landowner prefers to control them, then they have more control over the methods used and will have BPA personnel on the property less frequently. If the landowner wishes to control trees and brush, BPA will arrange an agreement that defines the landowner's responsibilities as well as BPA's.

As noted on page 2-3 of the Draft EIS, most of the new 500-kV transmission line will be constructed on existing right-of-way, with the exception of approximately 3.5 miles near Grand Coulee where BPA does need to acquire additional transmission line easements. Where BPA needs to acquire additional land rights, landowners will be offered market value established

through the appraisal process. Either BPA's appraiser or BPA's contract appraiser will contact the landowners where land rights need to be acquired and conduct an ownership interview. The landowner will be invited to accompany the appraiser to inspect the property. The appraisers must comply with "The Uniform Appraisal Standards for Federal Land Acquisitions". Once the appraiser has completed the appraisal of the market value of the land rights needed, BPA's negotiator will contact the landowner, explain the acquisition process and present the offer of market value. In acquiring land, BPA is guided by "*The Uniform Relocation Assistance and Land Acquisitions Policies Act of 1970* (Public Law 91-646). Although BPA prefers to reach mutually agreeable settlements, sometimes we are unable to reach a common agreement through negotiation. BPA would then request the United States Attorney to institute an eminent domain (condemnation) action.

Legal descriptions will be prepared for the transmission line easements needed for approximately 3.5 miles of new right-of-way. Legal descriptions will also be prepared for the access road easements needed along the project route to access the new transmission structures. As noted, most of the new transmission line would be constructed within BPA's existing transmission line right-of-way. The legal descriptions for the existing or old right-of-way do not need to be modified.

When BPA acquires transmission line easements, the land rights acquired include access to the right-of-way as well as to the transmission facilities within the right-of-way so that these facilities can be maintained and operated safely and efficiently. BPA also secures the rights to keep the right-of-way clear of structures, trees, brush or other vegetation. Landowners can continue to utilize the right-of-way for grazing purposes. BPA recommends that landowners read the publication "*Living and Working Safely Around High-Voltage Power Lines*" which has been included as *Appendix D* of the Draft EIS. You can also contact BPA's Public Information center at 1-800-622-4520 and request a copy of "*Landowner's Guide to Use of BPA Rights-of-Way*" (DOE-BP-3025) or access the document using BPA's website at: http://www.transmission.bpa.gov/orgs/t/tr.

See Chapter 3, *Socioeconomics, Property Impacts*, and the discussion of property value impacts under *Socioeconomics* in this section of the Final EIS.

Comment: Some titles are not recorded with the county. [037 Coulee Dam Meeting]

Response: BPA obtains title commitments for all properties where BPA needs to acquire land rights (with the exception of federally-owned properties). The negotiator will go over the title commitment with the landowner to confirm whether the information is correct and current and inquire whether the landowner is aware of any unrecorded documents, such as leases or easements, that affect their property.

Comment: Since I know you are going to be coming on my crop fields, would I be better off not planting the corridor and would I be compensated even if I didn't plant? [038 Davenport Meeting]

Response: The Agency Proposed Action is to remove an existing 115-kV transmission line (Grand Coulee-Bell No.1) and replace it with a 500-kV transmission line. The Draft EIS also covers a No Action Alternative. The decision on whether or not to construct a new line will be made in January of 2003. You would not be compensated for your crops if you decide not to plant.

Comment: We don't want to lose access to the property for grazing cattle. [017 Form]

Response: Potential impacts to rangelands are discussed in the *Land Use* section in Chapter 3 of the Draft EIS. If you have any specific suggestions on how BPA and its contractor can minimize their impact during construction in regard to the grazing cattle, please contact BPA's Real Property Services by calling 1-800-836-6619 and ask to be connected to the Field Realty Specialist out of our Spokane Office to discuss your suggestions.

Comment: All effects of what happens on a right of way that spills off the right of way. [018 Form]

Response: Please see Chapter 3 of the Draft EIS for a discussion of potential impacts that may occur outside of the right-of-way as a result of project implementation. Please contact BPA's Real Property Services by calling 1-800-836-6619 and ask to be connected to the Field Realty Specialist out of our Spokane Office to discuss any specific concerns.

Noise

Comment: Quality of life affected by construction noise, traffic, lights, etc. on existing residential areas. [008 Form]

Comment: Limit construction: Leave weekends and evenings free (quiet). Limit long-term impact (debris, roads, fencing, traffic lights). Reduce noise as much as possible. Complete residential sections quickly. No staging areas near residences. [008 Form]

Comment: There are city and county laws guaranteeing residents the freedom to enjoy the use of their homes, which can be used in nuisance suits. Please respect the ability of people to have some quiet family time after work and on weekends. [008 Form]

Response: As noted on page 3-21 of the Draft EIS, daytime construction activities (i.e.: those between 7:00 am and 10:00 pm) are excluded from Washington State noise regulations. The typical workday would be weekdays from 7:00 am to 5:30 pm. However, construction would require evening and weekend work at times, and it is acknowledged that some noise would accompany construction activities. BPA and its construction contractors will attempt to limit construction activity and minimize noise during evening and weekend hours. All sections of line would be completed as quickly as possible.

BPA will leave the right-of-way in as good or better condition after construction as compared to existing conditions; therefore, long-term impacts would be negligible. However, it is a challenge building 84 miles of line in just two construction seasons, and there would be some inconvenience to residents in the area.

Thank you for your comment about staging areas near residences. Every effort will be made to eliminate the possibility of having staging areas near residences. BPA and its contractors will also have land liaisons available to work with the landowners during construction to further try to limit impacts.

Public Health and Safety

Comment: Fire hazard - who will be responsible? [021 Form]

Comment: Who's responsible if they start fires during construction. [037 Coulee Dam Meeting]

Response: The construction contractor will be responsible for operating machinery, conducting the work in a manner that does not cause a fire hazard, and for any fires resulting from the operation of machinery or the actions of his workers during construction of the project.

Comment: Who to contact with additional EMF questions? [039 First Spokane Meeting]

Response: Please feel free to call the Project Manager, Mark Korsness, at 360-619-6326, to ask additional questions about EMF.

Comment: Will these new lines be closer to our unencumbered property and to what degree, if any, and will the strength of electricity sent through these wires affect our adjacent land? [007 Letter]

Response: The new line would not be adjacent to your property and would be approximately 1,000 feet or more from the "West of S "parcel and 1400 feet or more from the "Reserve A"

parcel. At these distances, the fields produced by electricity in the conductors of the proposed line will be small compared to those from lines that are closer to your unencumbered land. In the section where your property is located, BPA would acquire new right-of-way for the proposed line. However, it would be at the distances noted above, and would not impact your property.

Comment: The proposed line is less than 100 yards from our back door. We would like information you have regarding the health effects/ issues of big transmission lines. We are concerned about health issues surrounding the 500-kV size. [004 Phone]

Comment: It was obvious when I attended the meeting on this subject that BPA is unconcerned for the health and safety of the families living near the transmission lines. This should be #1. The fact that they are not doing studies on the effects of these high power transmission lines on the environment is unacceptable. [029 Form]

Comment: Concern about studies showing effects. Want to be sure that effects are minimized. [039 First Spokane Meeting]

Comment: What about the health effects? [040 Second Spokane Meeting]

Comment: How is BPA proposing to deal with these increased health hazards to people who live in proximity to these towers? [025 Letter]

Response: BPA is concerned with all impacts associated with transmission lines, including the potential for health effects of persons living near the line. Through design and routing choices BPA attempts to minimize potential EMF levels and effects on persons living near transmission corridors.

As part of its concern for public health, BPA closely follows research and other developments related to health effects from electric and magnetic fields. Because BPA does not have the expertise to conduct research or perform studies of human health effects related to electric and magnetic fields, BPA relies on the results of research performed by independent experts who have the expertise and scientific background and knowledge to evaluate the potential effects. This type of approach was used for the evaluation of potential public health and safety impacts from EMF levels associated with the proposed project.

Public Health and Safety are discussed on pages 3-27 to 3-41 and in *Appendices B-1 and B-2* of the Draft EIS. *Appendix B-2*, *Assessment of Research regarding EMF and Health and Environmental Effects* reviews numerous scientific research studies on the potential health effects of electric and magnetic fields. As discussed in these portions of the EIS, the health effects from transmission lines are not fully known, and in particular there is substantial uncertainty concerning long-term health effects from EMF exposure. However, the EIS includes relevant available information concerning potential health effects from transmission lines, as

well as a reasonable analysis of potential health effects from the proposed line based on expected electric and magnetic field levels.

Because of insufficient evidence and uncertainties regarding potential long-term health effects, BPA's assessment of EMF exposure in the EIS focuses on the predicted field levels caused by the proposed action and alternatives. BPA believes it would be speculative to attempt to definitively predict possible health risks/impacts associated with EMF exposures when the scientific community has been unable to do so. Instead, the EIS provides a comparative analysis of EMF levels in the vicinity of residential areas both with and without project implementation. BPA has compared the fields from the proposed line and the fields from the existing lines without the proposed line (the no-action alternative) along the corridor. Based on this analysis, the proposed project would not represent a significant change from existing conditions because EMF levels in residential areas would not be expected to differ significantly from the existing levels in these areas. The potential health risks to residents from EMF levels if the proposed project is implemented thus would not be expected to significantly change from any such risk that would exist for these residents under the no action alternative.

The National Institute of Environmental Health Sciences (NIEHS) is a good source for additional information about this topic, and several NIEHS publications were referenced in preparing this EIS. NIEHS publishes an "EMF Questions & Answers" booklet, which can be obtained by writing NIEHS Central Data Management, P.O. Box 12233, Research Triangle Park, NC 27709. This booklet can also be obtained by calling (919) 541-3419, e-mailing cdm@niehs.nih.gov, or visiting www.niehs.nih.gov/emfrapid/booklet/home.htm.

Comment: We are also concerned that your DEIS did not address the potential for the very serious health impacts of such high voltage lines, especially to children. Allusions to these health risks were buried in the appendix of you DEIS and were not noticeable to the general public. [033 Letter]

Comment: Would like line to be underground. Concerned about visual impacts. Concerned about health effects to children. [040 Second Spokane Meeting]

Comment: I am strongly opposed for several reasons. One of the biggest is the safety of the people living in the vicinity of these towers. I understand that studies have shown the possibility of cancers such as leukemia and brain cancer are related to exposure from magnetic fields that are created by high tension lines. I don't think we can continue to take a chance that this is true. The tobacco companies denied for years the risks from smoking and look at the people who have had to suffer and die. Are we going to have the same thing happen before someone says enough is enough? How many lawsuits will it take for someone to sit up and take notice and say the risk isn't worth it? Isn't human welfare the most important consideration? [026 Letter]

Comment: There seems to be a feeling that my health may be at risk due to the possibility of cancer caused by high tension lines. [027 Letter]

Comment: True health effects. Consider the health of kids/grand kids. [034 Letter]

Comment: There are great health concerns. Some homes are within 15 feet of the line. [002 Phone]

Comment: Concerned about electro-magnetic effects and concerned about property values. [040 Second Spokane Meeting]

Comment: Often elder landowners gave over easements without legal advice or choice. No one could see the potential health risk that impact value with new high voltage lines. [11 Form]

Response: Public Health and Safety are discussed on pages 3-27 to 3-41 and in *Appendices B-1 and B-2* of the Draft EIS. *Appendix B-2, Assessment of Research regarding EMF and Health and Environmental Effects,* reviews numerous scientific research studies on the potential health effects of electric and magnetic fields. Section 2.2.1 of *Appendix B-2* discusses epidemiological studies of children. Even after many large studies there remain conflicting results and uncertainty about whether magnetic fields cause childhood cancer. Studies of adult cancer and EMF are discussed in Section 2.2.2 of *Appendix B-2*. These studies show no evidence of an association between risk of disease and higher exposure to magnetic fields. Based on this uncertainty and lack of evidence, BPA believes it would be speculative to attempt to definitively predict possible health risks/impacts associated with EMF exposures when the scientific community has been unable to do so. However, the EIS provides a reasonable comparative analysis of EMF levels, as discussed in the preceding response.

Please see the section *Alternatives Considered but Eliminated from Detailed Study* in this Final EIS, as well as page 2-16 of the Draft EIS, for a discussion of burying transmission lines. Visual impacts are discussed in Chapter 3 of the Draft EIS. Property value impacts are discussed under *Socioeconomics* in Chapter 4 of this document.

Comment: Please consider putting the transmission line away from homes in the proposed take line (area). It will be a terrible hardship on one family in particular - namely Dave and Noreen Kosloski. The property value will go down to nothing for resale and no guarantee to be a safe home anymore for them and their family. Where will they go with no reimbursement? [016 Form]

Comment: Your EMF field will extend past your right of way and through my house. What gives you the right to contaminate my property and my air space. You are forcing me to live in a manner that I don't like. [019 Form]

Response: The Kosloski residence is located approximately 190 feet from the proposed line near Configuration 1 at the west end of the proposed line. At this location, the electric fields will be comparable to those for the No Action Alternative and the magnetic fields will be comparable to, or even less than, those for the No Action Alternative. Electric and magnetic fields from the proposed line extend past the right-of-way. However, at the location of the Kosloski residence the changes in field levels associated with the Proposed Action will have no impact. At this location, the electric fields will increase from about 0.1 - 0.2 kilovolts per meter (kV/m) for the No Action Alternative to about 0.2 - 0.3 kV/m for the Proposed Action. These are lower levels than those on the 230-kV right-of-way (1.2 kV/m) at this location. These fields will not be perceived and will not produce nuisance shocks that are associated with much higher electric fields. Calculated magnetic fields at the Kosloski residence are lower for the Proposed Action (6 to 7 milligauss [mG]) than for the No Action Alternative (7 - 8 mG). BPA continues to work with the Kosloski's to better explain the changes proposed.

Please see the discussion about property value impacts under *Socioeconomics* in this section.

Comment: Easement ends before the EMF diminishes to background levels. [037 Coulee Dam Meeting]

Response: The electric and magnetic fields from the transmission line extend beyond the edge of the right-of-way as shown in the figures in Appendix B-1 and on pages 3-33 to 3-39 of the Draft EIS. Along most of the route, the electric and magnetic fields at the edge of the right-of-way and beyond will be comparable to, or even less than, levels for the No Action Alternative.

Comment: Concerned about electric fields & grounding my equipment. [037 Coulee Dam Meeting]

Response: The electric fields from the proposed line and the effects of these fields are discussed in the *Public Health and Safety* section of Chapter 3 and *Appendix B-1* of the Draft EIS. Electric fields directly under the proposed 500-kV line would be greater than under the existing lower voltage lines and could result in nuisance shocks from contact with ungrounded vehicles and equipment. However, beyond the edge of the right-of-way electric fields would be at approximately the same levels as existing electric fields. Existing fields are below the levels where nuisance shocks occur. After construction, BPA would respond to any complaints and, if necessary, provide assistance to install or repair grounding to mitigate nuisance shocks. Grounding of vehicles and equipment that are on non-conducting tires can be accomplished by providing a movable ground such as a dragged chain.

Comment: Have contractor land liaison contact land owner before construction activities. Concerned about EMF on cattle and people riding horses on the R/W. [038 Davenport Meeting]

Response: Possible effects of EMF on cattle and other large animals are discussed in Section 3.1 of *Appendix B-2* of the Draft EIS. No adverse effects of EMF on cattle, horses or other farm animals have been observed.

Transmission lines are designed to provide safe distances between the conductors and people on horseback and vehicles. Persons on horseback, being taller than those on the ground, will be more likely to perceive the electric field directly under the conductors than someone standing on the ground.

Comment: What are the magnetic fields 200' south of the configuration 4? Table of value from edge of row to 300'. [039 First Spokane Meeting]

Response: Calculated magnetic field levels near Configuration 4 are shown in Figure 3-8 of the Draft EIS. These are predicted maximum levels for minimum clearance conditions. The actual fields at a specific point along the route will vary depending on line height, topography and line current. Average fields over the course of a year will be about 50 percent of these values or less. From Figure 3-8, the calculated maximum magnetic field 200 feet south of Configuration 4 is 9 milligauss (mG), and the field 300 feet south of Configuration 4 is 4.5 mG. Typical fields at these locations would be lower.

Comment: Alfalfa under transmission lines does not grow/produce as well as other areas. BPA have any information or would they have testing available to determine if lines or EMF have effect/impacts on crops? [039 First Spokane Meeting]

Response: Possible effects of EMF on plants including agricultural crops are discussed in Section 3.2 of *Appendix B-2* of the Draft EIS. No adverse effects of EMF on crops and other plants have been observed. Past studies sponsored by BPA and performed by independent contractors have shown no effects of EMF transmission lines on crops.

Comment: What effect is there if you stand or play under the new line? [040 Second Spokane Meeting]

Response: Safety considerations and effects under the proposed line are discussed in the *Public Health and Safety* section of Chapter 3 and in *Appendices B-1 and B-2* of the Draft EIS. The principal concern for activities taking place under transmission lines is maintaining a safe distance from the lines with anything that might conduct electricity. Thus, kite-flying, lifting tall objects, and building fires under the line should not be done under the new line or any electric line.

Comment: Could it affect a pacemaker? [040 Second Spokane Meeting]

Response: The potential impacts of electric and magnetic fields from the proposed transmission line are discussed in Section 2.4 of *Appendix B-2*. There is a small possibility that some pacemakers, particularly those of older designs and with single-lead electrodes, could respond to the electric fields on the right-of-way. The response might cause unnecessary stimulation to the heart and even, in certain pacemaker models, affect pacing of the heart. Newer pacemaker models are designed to be immune from interference by external fields and would not be affected. Pacemaker wearers riding in a vehicle would be shielded from the electric field and not susceptible to interference. A physician and the manufacturer should be consulted regarding the possibility of a particular pacemaker being affected near transmission lines or other sources of electric and magnetic fields.

Comment: Do lines interfere with automatically updated atomic clocks? [040 Second Spokane Meeting]

Response: BPA is not aware of electromagnetic interference (EMI) from transmission lines being a problem for radio-controlled clocks. However, it is possible that there is some interference from the existing power lines. Other sources of EMI are also possible, such as a computer monitor near the clock. Since the interference apparently occurs all the time, it is probably not related to corona on the lines, but rather arcing from bad hardware connections on the old lines. BPA policy is to mitigate for interference to radio and television reception that is demonstrated to be caused by transmission lines. One manufacturer of radio-controlled clocks notes that electrical transmission towers, steel reinforced construction, and metal siding can cause interference.

The automatically updated clocks use a 60-kilohertz signal from WWVB to synchronize with the atomic clock maintained by the National Institute of Standards and Technology. The following web site discusses these clocks and what to do if they don't function:
http://www.boulder.nist.gov/timefreq/stations/radioclocks.htm

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Comment: Is there a problem w/ existing line re EMF? [040 Second Spokane Meeting]

Response: BPA knows of no problems associated with EMF from the existing lines. The electric and magnetic fields from the existing lines are shown in *Appendix B-1* of the Draft EIS. Since these field levels are comparable to those from the proposed line, the discussions of EMF effects in the *Public Health and Safety* section and *Appendices B-1 and B-2* apply equally well to the proposed and existing lines.

Comment: If there is a fault on the system, will the electricity shoot off into the neighborhood? [040 Second Spokane Meeting]

Response: Transmission lines are designed to operate safely at all times and especially during fault conditions. Fault current is carried to earth through the tower footings or on overhead wires back to the substation. The towers are located on rights-of way at sufficient separation from other objects so that this current passes safely into the earth. BPA requires permits for excavation, construction, and installation of utilities on the right-of-way to ensure, among other things, that objects are kept at safe distances from towers and conductors.

Comment: Parking under 500-kV lines w/ lights. [040 Second Spokane Meeting]

Response: Construction of parking lots, placement of fences, and installation of utilities, such as overhead lighting, require approval of BPA. BPA has electric field criteria for parking lots. The strength of the field determines the size of vehicle allowed with no parking allowed in areas with field strengths greater than 3.5 kV/m. Installation of overhead lights is possible provided safe distances are maintained between the light standards and the transmission line conductors.

Comment: Is there any effect on appliances; i.e., TV? [040 Second Spokane Meeting]

Response: Electromagnetic interference with radio and television is discussed in Section 8 of *Appendix B-1* and in the *Public Health and Safety* section of the Draft EIS. BPA policy is to correct for interference to radio or television reception that is demonstrated to be due to the transmission line. Interference due to coronal activity during foul weather only occurs with broadcast signals and generally only in weak signal areas. Cable and satellite systems are not susceptible to corona.

Visual Resources

Comment: Picture on cover does not depict area accurately. It is not a bare void. It is pretty and many micro-environments all unique to area. [011 Form]

Response: Thank you for your observation. The picture on the cover shows the existing transmission lines crossing through agricultural land, which represents about 50% of the area crossed by the corridor.

Comment: Primarily, I am concerned about the visual impact of the towers looking from the south toward the mountains. I would hate to have the view further obstructed. [013 Form]

Response: Under the preferred option, BPA would use the shorter single-circuit towers along the length of the corridor for the most part. Towers would be similar in height to the existing 230-kV double circuit towers already on the right-of-way, and would be placed adjacent to, and in line with, those existing towers as closely as topography allows. The intent is to reduce the visual intrusion and emphasis of the new towers and keep the current view from appearing more cluttered.

Comment: Higher towers - will be more "intrusive" a view. Is there a way to leave some more trees around them (i.e., do you need to cut such a wide swath down)? Could you leave some vegetation between towers? [009 Form]

Response: During the installation of the footings and tower structures all the vegetation must be removed in order to dig the footing holes and erect the tower. For fire safety, BPA policy requires that vegetation be kept clear around towers in case of lightning strikes and other tower-related issues that may cause electrical problems. Some vegetation will be left in the spans between the towers where it does not affect the conductor clearance.

Comment: Why not 'coat or paint' the towers green or brown? [040 Second Spokane Meeting]

Comment: One means of mitigating the impact of these power lines would be to paint the poles green as is done in Europe. This was also suggested at the scoping meeting by several people and was not addressed in the DEIS. This would be an inexpensive method of mitigating this impact. [033 Letter]

Comment: Paint the towers green to blend into landscape. [041 Letter]

Comment: We would like to know the cost of painting the towers north of Whitworth College, and may be willing to participate in the added costs. [041 Letter]

Response: BPA has studied different options for treating steel so that it visually blends in better with different backgrounds. We have found that dipping the galvanized steel in a special bath dulls and darkens the color. This duller gray blends well in to a wider variety of backgrounds (trees, pasture, sky). Although treating tower steel was listed as mitigation for this project on page 3-59 of the Draft EIS, it is the proposal for this project.

Air Quality

Comment: We recommend that the air quality discussion be expanded to ensure that total air quality effects are disclosed to the public and the decision-maker (40 CFR 1500.1). [044 Letter]

Response: The Draft EIS provides sufficient information about potential air quality effects of the proposed action to adequately disclose these effects to the public and the decision-maker. The *Air Quality* section in Chapter 3 of the Draft EIS describes the air quality impacts of the project itself, as well as the cumulative air quality effects of the proposed action combined with cumulative projects and activities in the region. The EIS notes that there would be short-term effects on air quality from dust and vehicular emissions during construction of the transmission line, a small portion of which would be in the Spokane area. However, operation of the transmission line would not emit particulate matter, and would not contribute to the ambient PM-10 levels.

Cultural Resources

Comment: Both the Colville Confederated Tribe and the Spokane Tribe have assessed potential impacts to their cultural sites (Ch.3-65), but the information is not included in the draft document. These assessments should be included in the FEIS, if this is possible without disclosing sensitive site information (to prevent looting). [044 Letter]

Response: Comment noted. The Draft EIS contains a general discussion of the findings from previous and recent archaeological surveys of the corridor, as well as some traditional cultural site information. BPA is not at liberty to include more specific information because of Tribal confidentiality requirements.

Socioeconomics

Comment: The positive benefits -- jobs during construction; the ability to transfer additional power to support load delivery; federal ownership (use @ cost) vs. investor benefits (rate of return); regional/ local control. [015 Form]

Response: The comment is acknowledged and hereby incorporated in the Final EIS.

Comment: Loss of livelihood. [022 Form]

Comment: Lost income from business. [022 Form]

Comment: What about losses to landowner income when current use of the property is no longer desirable? Income from auto storage garage will be lost because people won't want to park under the lines because of shock, etc. [037 Coulee Dam Meeting]

Response: As noted on page 3-12 of the Draft EIS, some commercial businesses could experience reduced business revenues if the proposed 500-kV line is built. For questions about

use of existing BPA rights-of-way please contact us at BPA Real Property Services by calling 1-800-836-6619 and ask to be connected to the Field Realty Specialist in our Spokane Office.

Finally, as noted on page 3-83 of the Draft EIS, farmers would experience lost productivity during construction and as a result of land being taken out of production. Farmers would be compensated for easements across their land and for crop damage.

Comment: Spokane is a low income, poverty-ridden city. Construction of these steel towers will only add to the blight of the area. [023 Form]

Response: The proposed project would add a small incremental addition of transmission facilities within an existing corridor that has four transmission lines.

Comment: How were the Socioeconomic impact definitions developed? [037 Coulee Dam Meeting]

Response: The impact definitions were developed by considering the types of socioeconomic issues that would potentially be involved (e.g., economic characteristics like employment and personal income, foregone production of an economic nature, local infrastructure, and environmental justice); the setting or context in which the proposed project would take place; and the range of effects that could occur. The magnitude, extent, duration, and probability of potential impacts were then considered in prescribing the impact level definitions.

Comment: Please consider putting the transmission line away from homes in the proposed take line (area). It will be a terrible hardship on one family in particular- namely Dave and Noreen Kosloski. The property value will go down to nothing for resale and no guarantee to be a safe home anymore for them and their family. Where will they go with no reimbursement? [016 Form]

Comment: Concerned about electro-magnetic effects and concerned about property values. [040 Second Spokane Meeting]

Comment: Loss of property value due to magnetic field extending beyond easement. [022 Form]

Comment: Property values in residential areas due to pollution or rise in traffic on improved access roads. [001 Form]

Comment: We are within 40 yards of the tower in Brentwood, a suburban north Spokane neighborhood. The existing lines have not been a problem, but now people are putting up "For

Sale" signs. I would be sad to see residential neighborhoods destroyed by the building project. 001 Form]

Comment: Property value impact. [005 Form]

Comment: Impact of construction noise on existing residential areas quality of life and property values. [008 Form]

Comment: We are already seeing a drop in our property value in our neighborhood. [008 Form]

Comment: Remember that while BPA and the construction companies will make money, the residents will lose it in home value + and higher rates. [008 Form]

Comment: Your 500kV line that you are putting in past my house will lower the value of my house to zero. [019 Form]

Comment: Power line will take my property value to zero. [037 Coulee Dam Meeting]

Comment: Loss of Property value. [037 Coulee Dam Meeting]

Comment: Concern about changes in property value. [039 First Spokane Meeting]

Comment: Will project affect value of property? [040 Second Spokane Meeting]

Comment: We also feel that many homeowners will suffer a tremendous decrease in property values for power lines serving BPA, Western Washington, and California. These parties will benefit financially while Eastern Washington homeowners will suffer, and bear the cost. This is inequitable. We have collected several hundred signatures from concerned neighbors in these adjacent neighborhoods. [033 Letter]

Comment: This may not affect the value of my home as there is already four sets of high-tension towers and poles directly in front of my door at this time. But I am sure it will effect the selling time. [027 Letter]

Comment: Often elder landowners gave over easements without legal advice or choice. No one could see the potential health risk that impact value with new high voltage lines. [011 Form]

Response: As discussed in the *Socioeconomics* section in Chapter 3 of the Draft EIS, the proposed transmission line is not expected to have long-term impacts on property values within the affected area. There is already an existing transmission corridor that passes through this residential area, and five transmission lines are currently located in this corridor. The proposed line would be located generally within this corridor where it passes through residential areas, and

would be developed along this portion by removing an existing lower-voltage line and replacing it with the proposed higher-voltage line. Thus, any effect of the presence of transmission lines on property values is already reflected in current property values, and implementation of the proposed project would not be expected to significantly change this effect.

Whenever there is a perceived land use change, or new development, concern is often raised about the effect the change may have on values of nearby properties. In general, zoning is the primary means that most local governments utilize in protecting property values. By allowing some uses and disallowing others, or permitting them only as conditional uses, conflicting uses are often avoided. Some residents consider transmission lines to be an incompatible use adjacent to residential areas. Such views, however, are not unanimous.

The question of whether nearby transmission lines affect residential property values has been studied numerous times in the United States and Canada over the last three decades, with mixed results. A number of studies found no or negligible impact on property values from transmission lines; still other studies found that transmission lines impose a significant negative impact on the desirability, hence value of, residential properties, adjacent to or within a short distance of the lines.

In 1995, BPA contributed to research that looked at the sale of 296 pairs of residential properties in the Portland, Oregon metropolitan area (including Vancouver, Washington) and within King County, Washington. The study evaluated properties adjoining 16 BPA high voltage transmission lines (called "subjects") and compared them with similar property sales located away from transmission lines (called "comps"). All of the sales took place between 1990 and 1991 and adjustments were made for time and other factors. The results of the study showed that the subjects in King County were worth approximately 1% less than their matched comps, while the Portland/Vancouver area subjects were worth almost 1.5% more (Cowger et al., 1996).

This earlier study was recently updated by BPA using 1994 and 1995 sales data. The sales of 260 pairs of residential properties in King County and Portland/Vancouver metropolitan areas were reviewed. The analysis confirmed the results of the earlier study, that is, that the presence of high voltage transmission lines does not significantly affect the sales price of nearby residential properties. The residential sales analysis did, however, identify a small negative effect from 0 to 2% for those properties (i.e., subjects) adjacent to the transmission lines as opposed to those (i.e., comps) where no transmission lines were present. Although this study identified a negative effect, the results are generally similar to the earlier study with the differences relatively small (Cowger et al., 2000).

Studies of impacts during periods of physical change—new transmission line construction or structural rebuilds—have revealed greater short-term impacts than long-term effects. However, most studies have concluded that other factors, such as general location, size of property, property improvements and condition, amenities and local supply and demand factors are more

important criteria than the presence (or absence) of transmission lines in determining the value of residential properties.

Comment: Would there be changes in property values based on aesthetics? Compensation? [040 Second Spokane Meeting]

Comment: Is BPA planning on compensating homeowners for lost property values if these towers are erected? [025 Email]

Comment: I feel you are responsible for the reduction of property values and diminished use of a person's property. There ought to be some compensation for this. [018 Form]

Comment: BPA should compensate for the loss of land use and decreasing property values. [039 First Spokane Meeting]

Response: Landowners would be offered market value, established through the appraisal process, for the transmission line or access road easements needed to construct this project. The appraisal process takes all factors affecting value into consideration including the impact of transmission lines on property value. Furthermore, as discussed in the preceding response, the proposed transmission line is not expected to have long-term impacts on property values within the affected area. See additional discussion regarding compensation in the *Land Use* section of this document.

Comment: The document should include an evaluation of the costs of congestion - the extent of schedules that were unable to be completed, in terms of MW of schedules blocked and the number of hours that they were blocked. [042 Letter]

Comment: The final EIS should describe the projected cost of blocked schedules over time until the RTO is formed. Then the cost of managing congestion after RTO formation should be compared with the cost of expanding capacity on the path. [042 Letter]

Response: As required by NEPA, the EIS for the proposed action focuses on the environmental effects of the proposed action and alternatives; the systems planning information requested by the commenter is outside the scope of this EIS. In addition, because it is unclear at this time how and if BPA will participate in a RTO, it would be speculative to estimate how management of congestion would differ, if at all, under a RTO.

Geology and Soils

Comment: Erosion: All the roads out in the area I'm familiar with are actually dust bowls much of the year. [009 Form]

Response: Thank you for your concern about the dust. BPA plans to place gravel on the access roads in this area and to use dust abatement procedures such as watering construction areas as necessary. These measures should keep the dust to a minimum.

Comment: Concern about construction equipment destroying 'collectable" rock. Obsidian-type rock near wood pole & 69/5 (new) N. of ROW. [040 Second Spokane Meeting]

Response: Thank you for your concern about this matter. The nearest tower to be constructed is about 375 feet away, so no impact would occur on this site. The road that passes through the area will stay at the existing location.

Comment: Worried about erosion of land. [037 Coulee Dam Meeting]

Response: Erosion impacts are discussed in the *Geology and Soils* section of the Draft EIS. As noted therein, a Storm Water Pollution Prevention Plan (SWPPP) will be prepared as per conditions specified in the EPA National Pollutant Discharge Elimination System (NPDES) Construction General Permit. The purpose of the SWPPP will be to implement Best Management Practices (BMPs) to minimize erosion and sedimentation from wind and rainfall at construction sites, and to identify, reduce, eliminate, or prevent the pollution of stormwater. All BMPs shall be monitored, maintained, and repaired as needed to assure performance of their intended function.

Comment: Compaction impacts will vary with the type of crop, rangeland, time of year. [038 Davenport Meeting]

Response: In order to reduce soil compaction, rutting, and the resultant loss of soil productivity and erosion, construction activities will be avoided in wet soils, attempts will be made to maintain a single track, not to exceed 20 feet in width, within the transmission line right-of-way, and if possible, reel, puller, and snub sites will not be located on cultivated land. Sub-soiling, which may include disking and tilling the soil, is required on routes of travel, temporary access roads and all other sites in cultivated land in order to eliminate any rutting or compaction caused by construction activities. The farm operators will be contacted before sub-soiling to determine their methods and the sub-soiling depth they require. Arrangements may be made for the farm operator to do the sub-soiling.

Water Quality

Comment: Preventing water quality degradation is one of EPA's primary concerns. Section 303(d) of the Clean Water Act (CWA) requires the State of Washington to identify water bodies that currently or would potentially fail to meet state water quality standards, and to develop a Total Maximum Daily Load (TMDL) for each stream and pollutant on the 303(d) list of impaired water bodies. The Draft EIS lists three impaired streams that cross the transmission corridor. Sherman Creek is listed for temperature, Deep Creek, elevated pH, and the Spokane River, metals. The EIS must indicate how the project will comply with any existing TMDL in the project area. If no TMDL has been developed for the water bodies on the 303(d) list, the EIS must demonstrate that there will be no net degradation of water quality for the parameters identified, preferably with a watershed analysis. This analysis should follow guidance provided in the Ecosystems Analysis at the Watershed Scale: The Federal Guide for Watershed Analysis - Version 2.2. [044 Letter]

Response: Sherman Creek is listed for temperature. BPA's right-of-way corridor crosses a section of Sherman Creek that has been channelized for one-quarter mile to the north and one-quarter mile to the south of the corridor to run adjacent to Sherman Creek Road. The transmission lines currently span the creek. The proposed line would span the creek. No construction work to build a new structure or remove a wood pole structure would occur within 100 feet from the creek. The project would not affect temperature in Sherman Creek.

Deep Creek is listed for elevated pH levels. BPA's right-of-way corridor crosses a dry portion of Deep Creek, spanning the dry creek bed, near an area of Riverside State Park that is used for a motorcycle park. The project would not affect pH levels in the creek.

Spokane River is listed for metals. Any metals migrating down the Spokane River from historic mining operations in Idaho's silver valley or operations in the Spokane Valley would be trapped behind Avista's Upriver Dam (Jayne, 2002). BPA's right-of-way corridor crosses the Spokane River; the transmission lines span the river. Location of a new tower would be greater than 400 feet from the river; removal of the existing wood poles would be greater than 100 feet from the river. No activity associated with this project would result in metals being introduced into the waters of the Spokane River.

Wetlands

Comment: Mile 69/8-7 concerned about wetlands: water on existing access road. (69/7 * 69/8 wood pole line). Depends on the time of the year & what kind of moisture there's been. [039 First Spokane Meeting]

Response: Thank you for your observation. There is a seep on the road that appears depending on the season and precipitation, as you noted. Investigators field-checked the site and

determined that it is not a wetland. The water is being forced out of the ground by the solid basalt beneath. The road through this area is scheduled to be improved and rocked. This will allow the water to move on across the road uninterrupted.

Comment: Concern about possible wetland on road at 69/5 to 69/6(new). Is it a wetland? [040 Second Spokane Meeting]

Response: Thank you for your concern about wetlands. At this particular site there is no wetland, but wetlands do exist between proposed new structures 69/1 and 69/3. Where the existing road is adjacent to wetlands, such as in that area, there will be no new access road construction. BPA plans to install gravel on only the existing roads at those locations.

Comment: I am wondering if anyone has addressed the situation of transmission lines crossing the wetland habitat on the Five Mile Prairie. [025 Letter]

Response: No wetlands were determined to be present along the corridor in this area. Information from field review, National Wetlands Inventory System maps, and USGS topographical information did not indicate the presence of wetlands in the corridor.

Comment: On page 3-112, it is written that there will be a stake or flag at the boundaries of all wetlands. If the buffer is flagged, then the wetland and the buffer are both protected. No additional field effort is needed to do this. This does assume that the wetlands have been both delineated and categorized to their level, so that the appropriate buffer can be set on the ground. [031 Letter]

Response: Thank you for your comment. Wetlands were identified and categorized during field surveys. Towers and roads would be located to avoid impacts to wetlands where possible, as noted on page 3-116 of the Draft EIS. Wetland delineations will be conducted prior to construction for Section 404 and 401 permitting purposes. Based on the categorizations and delineations, appropriate buffers will be set on the ground prior to construction activities.

Vegetation

Comment: Try to keep from transferring noxious weeds or spreading more around. [017 Form]

Comment: What measures (will be taken) for spreading noxious weeds and control after the crews have left. [021 Form]

Comment: Spread of s\weeds & noxious weeds. [037 Coulee Dam Meeting]

Comment: Weed control / goat grass/ especially at harvest time (Mid-July until end of August). [037 Meeting]

Comment: Will you be doing weed control during construction? Concern is about 2-year construction cycle where there is a good chance of weeds becoming established if no treatment is done. [038 Davenport Meeting]

Comment: Will anything be done to control noxious weeds? [040 Second Spokane Meeting]

Comment: In regards to mitigation of vegetation impacts (page 3-131), existing vegetation in the transmission corridor may be expected to receive heavy disturbance during construction. A number of weeds, prominently cheatgrass and dalmation toadgrass, will invade the disturbed areas intensively in the first growing season after construction. Revegetation with an appropriate native plant community usually requires several phases and long term monitoring, including fall planting for native grass seeds, and different techniques for native forbs and shrubs like sage. Weed control would be necessary for a period of five years before robust establishment of the desired plant community is assured. A contingency plan for weed outbreaks and replanting of failed revegetation is also typically necessary to establish native plant communities in the shrub-steppe. A monitoring plan executed for 5 years is necessary to be able to identify and address these contingencies. Appropriate revegetation will also require contract growing for seeds and started plants, so must typically be planned at least one year in advance. [031 Letter]

Comment: As far as your R/W itself is concerned, any traffic over this land will undoubtedly increase the infestation of noxious weeds. It is beyond our scope at this time to make any predictions, but we would appreciate it if you would take this situation under consideration and let us know what can be done to control the proliferation of noxious weeds on your Right of Way. [007 Letter]

Response: Recommended mitigation actions discussed on page 3-131 of the Draft EIS include reseeding or revegetating disturbed areas with native vegetation following construction. This would include grasses, forbs, and shrubs (if recommended by the local county). Reseeding would occur during the appropriate planting season. All disturbed areas would be reseeded with seeds of native plant species recommended by the local county. Details of revegetation of native plant communities will be incorporated into the Mitigation Action Plan for the project.

Control of unwanted vegetation and noxious weeds on BPA's rights-of-way in the Spokane Region is the responsibility of the Natural Resource Specialist for the Region who may be reached at 509-358-7439. During the construction period, the construction contractor is responsible that all vehicles, equipment, and machinery be certified weed free prior to entering the job site. If the contractor encounters noxious weeds on the right-of-way, they are required to wash the equipment on the right-of-way before removing it from the right-of-way. Wash stations would be established on the corridor throughout the project area to wash all vehicles,

equipment and machinery as required. The resulting wash-water will be removed from the right-of-way for proper disposal, and not used for dust abatement on or off the right-of-way. Also, as noted on page 3-130 of the Draft EIS, BPA will conduct a weed survey and prepare a Weed Control Plan prior to construction.

Comment: Are we surveying for goat grass? [040 Second Spokane Meeting]

Response: BPA will conduct a survey for goat grass early next year during April or May.

Comment: How will Riverside Park and Whitworth College be affected by the larger transmission lines crossing their land? Will trees be felled on these lands in order to put in the larger transmission lines? [025 Letter]

Response: Yes, some trees will have to be removed. There are trees on the right-of-way that have to be removed in Riverside Park due to their height and locations. Letters to the Park will be mailed with the explanation and tree count of those trees to be removed. No trees are expected to be removed from Whitworth College property unless they affect tower installation, stringing conductors, or improving access roads.

Wildlife

Comment: Protect wildlife under lines - they create an unofficial wildlife corridor. [001 Form]

Response: BPA realizes that the transmission line corridor creates a pathway for wildlife to move through areas of development, especially during the nighttime hours. Any impacts to wildlife during construction would be short term, and would not impede wildlife movement, since construction activities would occur during daylight hours.

Comment: Birds: Out near my house is a huge owl. I'd like to think you'd leave some trees for him. [009 Form]

Response: BPA would selectively remove trees on the corridor that would interfere with the construction of the actual tower, or the subsequent operation of the proposed transmission line. However, the number of trees removed would be a small number relative to the number of perch trees in the vicinity of the corridor in wooded areas. Owls typically use the highest vantage point in an area. We would expect them to use other tall trees in the area and, quite possibly, the transmission towers as a vantage point.

Comment: Impact on endangered species. We have Karner butterfly, pygmy rabbit, plus owl, falcon, mule deer, fox, cats, the canyon is full of life and diversity. [011 Form]

Comment: T26N, R36E- Sections 19 & 20 ½ mile north of existing transmission lines there is a substantial pygmy rabbit population in Hawk Creek Drainage bluffs. Estimate approximately 17 rabbits per square mile. [038 Davenport Meeting]

Response: Information concerning possible endangered wildlife species in the project vicinity and potential impacts to these species is contained in the *Wildlife* Section of Chapter 3 of the Draft EIS. Regarding pygmy rabbits, BPA contacted the U.S. Fish & Wildlife Service (USF&WS) with the information provided by the commenter. The one-year emergency listing of the pygmy rabbit as endangered expired in July 2002. The USF&WS is currently reviewing the proposed listing of the Columbia Basin Distinct Population Segment of the pygmy rabbit as an endangered species. BPA gave the land location and asked if the USF&WS would verify that a population might be present in this part of Lincoln County near BPA's corridor. The USF&WS informed BPA that this area is well outside the historic range of the pygmy rabbit and, therefore, would fall outside the area of consideration for listing of the species (Warren, 2002). The closest historic population range of the pygmy rabbit in Lincoln County is in the southwestern corner of the county. For further information, please contact Christopher Warren, Upper Columbia Fish & Wildlife Office, USFWS, (509) 891-6839.

Comment: Impact says no bald eagle habitat - wrong. What else is wrong? [011 Form]

Response: The EIS notes in Chapter 3, Wildlife, that Bald Eagle habitat exists along the Spokane River in areas 8 miles and 17 miles from where the corridor crosses the river, and a Bald Eagle roosting site exists along the Spokane River about 1 mile north of the corridor's river crossing. No habitat exists in the corridor, largely because the corridor lacks suitable foraging habitat such as fish and waterfowl concentration areas. Bald eagles likely pass through the corridor when migrating or moving between winter foraging areas, especially between Banks Lake and Lake Roosevelt.

Comment: Also have moose, deer & cougar using area and corridor. [038 Davenport Meeting]

Response: Thank you for your comment. Moose, deer and cougar are listed in Table C-3 of the Draft EIS as wildlife species that potentially occur in the corridor. Because the project is an elevated transmission line in an existing transmission line corridor, it would not be expected to affect the movement of these species in the area. There would be no impacts to these species if the project is implemented, since they would avoid the corridor for short times during construction activities.

Environmental Consultation, Review, and Permit Requirements (Chapter 4)

Threatened and Endangered Species and Critical Habitat

Comment: CEQ regulations require that a Biological Assessment be prepared and included in the Draft EIS since the proposed project could potentially impact a listed species or critical habitat. Resulting assessments and opinions must now be included in the Final EIS (40 CFR 1502.25 (a)). [044 Letter]

Response: There is no requirement in the CEQ NEPA regulations that an agency include a Biological Assessment in the Draft EIS that the agency prepares for its proposed action. In addition, 40 CFR 1502.25 (a) does not require that Biological Assessments or Biological Opinions be included in the Final EIS prepared by the agency. Instead, this regulation requires that agencies prepare Draft EISs "concurrently with and integrated with" the requirements of various environmental laws and executive orders to the fullest extent possible.

Consistent with this regulation, BPA has provided information in the Draft EIS about consultations under the Endangered Species Act to the full extent that it was known at the time that the Draft EIS was prepared. As noted on page 4-2 of the Draft EIS, BPA is preparing a Biological Assessment (BA) for the project, which will be finalized by the time this Final EIS is issued. Surveys for listed plant species that flower in early August could not be completed in time for the Draft EIS, which was prepared in July. The survey findings and resulting determination made in the BA are included in the Final EIS. Text pertaining to the findings in the BA will be added to Chapter 3 of the EIS in the sections for vegetation, fish, and wildlife.

State, Areawide, and Local Plan and Program Consistency

Comment: As noted in the EIS, that portion of the project located within unincorporated Spokane County is subject to compliance with the Spokane County Comprehensive Plan and the Spokane County Zoning Code, including applicable development standards contained therein. [036 Letter]

Response: CEQ's NEPA regulations require EISs to discuss possible conflicts and inconsistencies of a proposed action with state and local land use plans and policies. This analysis is provided on pages 4-6 to 4-14 of the Draft EIS. However, as noted on pages 4-6 and 4-7 of the Draft EIS, because the proposed action would be undertaken solely by BPA, the project would not be subject to local planning or zoning requirements due to the federal supremacy clause of the U.S. Constitution. BPA is nonetheless committed to planning its projects to be consistent with local plans and policies to the greatest extent practicable, and thus would provide local jurisdictions with information relevant to any permits that would otherwise

be required. Therefore, although the proposed project is not subject to compliance with the Spokane County Comprehensive Plan and the Spokane County Zoning Code, BPA would provide relevant information to Spokane County concerning the proposed project.

Comment: CF Policy 16.4 states: "Ensure that utility facilities are designed to minimize adverse aesthetic impacts on surrounding land uses." The Preferred Action addresses adverse visual impacts as a result of replacement of wood poles with steel lattice towers and mitigation measures to reduce those impacts. In addition to the noted measures, stealth facilities designed to blend into the natural environment should be included to mitigate the adverse aesthetic impacts. [036 Letter]

Response: Comment noted. The expected visual impacts of the proposed transmission line and alternatives are discussed in the *Visual Resources* section of Chapter 3 of the EIS. Potential mitigation measures to reduce and minimize these impacts are identified on page 3-59 of the Draft EIS. Because these measures would serve to minimize adverse aesthetic impacts on surrounding land uses, the project with mitigation would be consistent with the policy identified by the commenter. In addition, these measures would help the project blend more effectively with the surrounding environment, as desired by the commenter.

Comment: Comprehensive Plan CF Policy 16.15 states: "Promote the co-location of new utility transmission distribution and communication facilities when doing so is consistent with the utility industry practices, DOT requirements and national electrical and other codes." The Preferred Action fails to address co-location of communication facilities, specifically wireless communication facilities. Opportunities for co-location should be addressed as a mechanism to mitigate the cumulative impact of utility transmission and communication facilities in utility corridors and surrounding areas. [036 Letter]

Response: Comment noted. Because the proposed project would involve a transmission line (i.e., a facility equal to or greater than 230-kV) and the policy identified by the commenter appears to concern distribution lines (i.e., facilities equal to or less than 38 kV), this policy does not appear to be applicable. Although BPA is not subject to local planning or zoning requirements, BPA's policy is to allow co-location of communication facilities in accordance with section 704(c) of the Federal Telecommunications Act of 1996, and co-location of other utility facilities where feasible. By combining utility and communication facilities, the environmental effects of these facilities can be reduced, as mentioned by the commenter. The design of the proposed project would neither necessarily prohibit nor require co-location of communication facilities, and such facilities could be co-located at some later date, if appropriate. Thus, the proposed action would not be inconsistent with the policy identified by the commenter.

Comment: The Preferred Action includes replacing one of two sets of 115-kV transmission lines supported by wood poles with a 500-kV transmission line supported by steel lattice towers. Page S-11 of the Draft EIS states: "Consistent with land use plans and zoning; double-circuit towers exceed height restrictions in City of Spokane and Spokane County." However, on page 3-14 of the Draft EIS the following statement appears: "At this time, the project could be inconsistent with Spokane County's height restrictions (125 feet) for transmission towers (see Chapter 4, State, Areawide, and Local Plan and Program Consistency). The Agency Preferred Action would use towers that would nominally be 125 feet tall, except where the corridor narrows between structures 83/1 and 83/6 where 175-foot tall towers would be used. In addition, some locations with longer spans may require taller towers that would exceed 125 feet. The Alternative Action would use towers that are 175 feet tall." While the transmission line is consistent with both the Comprehensive Plan and the Zoning Code, the proposed steel lattice towers in excess of 125 feet do not comply with the height restriction standard and are, thus, inconsistent with the Zoning Code. [036 Letter]

Response: Comment noted. The bulleted item referenced by the commenter on page S-11 of the Draft EIS has been revised as follows to clarify the potential inconsistencies with Spokane County's height restrictions that are discussed on page 3-14 of the Draft EIS:

- Consistent with land use plans and zoning, except for double-circuit towers and those with longer spans that likely would exceed height restrictions in City of Spokane and Spokane County.

Comment: Last, the Spokane County Critical Areas Ordinance (CAO) is discussed on pages 4-8 through 4-14 of the Draft EIS. The Agency has acknowledged the requirements of the CAO with respect to protecting wetlands, fish and wildlife habitat, and geologically hazardous areas, and the Division of Planning welcomes the opportunity to assist the Agency in fulfilling those requirements, including any required management plans. [036 Letter]

Response: Although BPA is not obligated to comply with local plans or zoning ordinances pursuant to the federal supremacy clause of the U.S. Constitution, BPA would coordinate with local jurisdictions, such as Spokane County, to plan its proposed project to be consistent with these plans and ordinances to the greatest extent practicable. As noted on page 4-14 of the Draft EIS, the proposed action would be generally consistent with CAOs, such as the Spokane County CAO. If, after final project design has been completed, it is determined that certain critical areas or critical area buffers cannot be avoided, then the project may be inconsistent with CAO provisions for these areas.

Comment: From the information provided, shoreline permits, or at least compliance with the substantive requirements of these permits, will be required. Please contact local shoreline administrators in impacted counties. [031 Letter]

Response: As discussed on pages 4-6 to 4-7 of the Draft EIS, BPA is committed to planning its projects to be consistent with local plans and policies to the greatest extent practicable. The proposed project would span the Spokane River, identified as a "Shoreline of the State". BPA's design for the proposed transmission towers in this area shows that no tower would be placed within the 200-foot jurisdictional area of the Spokane River. The tower closest to the river would be over 300 feet from river. The contractor would use BMP erosion control measures to protect the 200-foot jurisdictional shoreline area during construction of the tower. BPA would provide local jurisdictions with information relevant for a shoreline permit.

Comment: I am formally requesting a statement from BPA asserting whether or not your ownership interests covered by the forested project area are that of a forest landowner. See the bullet in the March 6, 2002, letter for the specific detail that I'm requesting from your agency. DNR will not ask for or review BPA ownership/easement documents to determine ownership. Our agency will base the decision of jurisdiction on your agency's written assertion of ownership. Within areas where BPA asserts status as forest landowner, DNR will not require a State Forest Practice Application or Notification (FPA/N). Where your agency doesn't claim such status on non-federal forestland, DNR will require the appropriate (FPA/N) and will assert Forest Practice jurisdiction. The decision of jurisdiction made by my agency applies to all BPA transmission lines either existing or proposed. [035 Letter]

Response: Although this comment requests information that is outside the scope of this EIS, BPA notes that it intends to assert its status as a forest landowner along forested portions of the proposed transmission corridor for purposes of the State of Washington's Forest Practices Act. The definition of "Forest land owner" means any person in actual control of forest land, whether such control is based either on legal or equitable title, or on any other interest entitling the holder to sell or otherwise dispose of any or all of the timber on such land in any manner…." BPA has the legal right through its easement to keep the right-of-way clear of unwanted vegetation, which would include controlling the cutting and disposal of brush and timber. Coordination with the commenter concerning this issue is ongoing.

Comment: The project may need to go through the SEPA process. Attached guidance can help decide whether or not SEPA compliance is needed. [031 Letter]

Response: Thank you for the information. Based on the criteria attached to your letter, it appears that BPA would be exempt from SEPA under WAC 197-11-800 (10).

Permits for Discharges into Waters of the United States

Comment: A list of permits for discharges into waters of the United States is listed on page 4-17. For clarification, Department of Ecology issues the 401 Water Quality Certifications for the State of Washington. [031 Letter]

Response: Comment noted. Changes to the text have been made on page 4-17 (see Chapter 2, *Changes to Draft EIS*).

The Safe Drinking Water Act

Comment: If you plan to use water for dust suppression at your site, be sure that you have a legal right. If in doubt, check with Department of Ecology, Water Resources. Temporary permits are usually obtainable in a short time period. The concern of Water Resources is for existing water rights. In some instances water may need to be obtained from a different area and hauled in or from an existing water right holder. [030 Letter]

Response: Neither BPA nor the contractor plan to obtain water from surface water sources or drill a new well to obtain water for dust suppression. Instead, BPA will likely obtain water for its needs from a party with an existing water right, as it has for other construction projects. Nevertheless, if water is not available for such a source, the contractor will coordinate with the Department of Ecology to obtain a temporary permit for a water right.

Chapter 5
Comment Letters

Log No.	Name	Affiliation / State
GCBTL – 0001	Corliss K. Slack	
GCBTL – 0002	Susan Hamilton	
GCBTL – 0003	Hal R. Johnson	Mondovi Corner Farm
GCBTL – 0004	Mike Fitzpatrick	
GCBTL – 0005	Hopkins	
GCBTL – 0006		Carco Farms Inc.
GCBTL – 0007	Pardon N. Dexter	
GCBTL – 0008	Slack	
GCBTL – 0009		Spokane Meeting 9/9
GCBTL – 0010	Ken / Carol Hustad	Spokane Meeting 9/9
GCBTL – 0011		Spokane Meeting 9/6
GCBTL – 0012	John Rollins	Spokane Meeting 9/6
GCBTL – 0013	Bill Lilje	Davenport Meeting 9/5
GCBTL – 0014	Dennis Herdrick	Grand Coulee Meeting 9/4
GCBTL – 0015	Lillian Miller	Nespelem Valley Electric Coop
GCBTL – 0016	Bob / Joan O'Neil	Grand Coulee Meeting 9/4
GCBTL – 0017	Claire McKay	Grand Coulee Meeting 9/4
GCBTL – 0018		Grand Coulee Meeting 9/4
GCBTL – 0019	Daniel Kosloski	Grand Coulee Meeting 9/4
GCBTL – 0020	Mike Eagle	Grand Coulee meeting 9/4
GCBTL – 0021	Penny Rosenberg	Grand Coulee Meeting 9/4
GCBTL – 0022		Grand Coulee Meeting 9/4
GCBTL – 0023	Dixie L. Herro	
GCBTL – 0024	Lynn Richardson	
GCBTL – 0025	Susan Hamilton	
GCBTL – 0026	Bernadette M. Prosser	
GCBTL – 0027	Ralph Prosser	
GCBTL – 0028	Richard Brickner	
GCBTL – 0029	Susan Brickner	
CGBTL – 0030	Gwen Clear	State of WA Department of Ecology
GCBTL – 0031	Heidi J. Scheibner	State of WA Department of Ecology
GCBTL – 0032	Greg / Gayle Brown	
GCBTL – 0033	Marcella K. Elston	Five Mile Prairie Neighborhood Association
GCBTL – 0034	Barry / Linda Shook	
GCBTL – 0035	Robert J. Anderson	WA Department of Natural Resources
GCBTL – 0036	John Pederson	Spokane County – Division of Planning
GCBTL – 0037		Coulee Dam Meeting 9/4/02

5 Comment Letters

Log No.	Name	Affiliation / State
GCBTL – 0038		Davenport Meeting 9/5/02
GCBTL – 0039		Spokane Meeting # 1 9/6/02
GCBTL – 0040		Spokane Meeting # 2 9/9/02
GCBTL – 0041	Steve Thompson	Whitworth College
GCBTL – 0042	Jan P. Sensibaugh	Montana Department of Environmental Quality
GCBTL – 0043	Richard G. Hadley	Spokane regional Chamber of Commerce
GCBTL - 0044	Judith Leckrone Lee	US EPA Region 10 – Geographic Unit