Bonneville Power Administration's
Albany-Eugene 115-kilovolt No. 1 Transmission Line Rebuild Project
Record of Decision
June 2012

Decision

The Bonneville Power Administration (BPA) has decided to implement the Proposed Action Alternative from the Albany-Eugene 115-kilovolt (kV) No. 1 Transmission Line Rebuild Project Final Environmental Impact Statement (EIS) (DOE/EIS-0457, March 2012). The Proposed Action Alternative, which was identified as the agency's preferred alternative in the Final EIS, consists of rebuilding a 32-mile section of the existing Albany-Eugene 115-kV transmission line that extends from the Albany Substation in the City of Albany in Linn County, Oregon, to the Alderwood Tap near Junction City in Lane County, Oregon. Rebuild activities will include removing and replacing existing wood-pole structures and associated structural components and conductors, establishing better access to the line, improving access roads, developing staging areas for storage of materials, removing vegetation including danger trees, and revegetating areas disturbed by construction activities. The existing structures will be replaced with structures of similar design within or near to their existing locations. The line will continue to operate at 115-kV.

Background

BPA is a Federal agency that owns and operates transmission lines that carry most of the Northwest's high-voltage power from facilities that generate the power to wholesale power users throughout the region. BPA has a statutory obligation to ensure that its transmission system has sufficient capability to serve its customers while maintaining a system that is safe and reliable. The Federal Columbia River Transmission System Act directs BPA to construct improvements, additions, and replacements to its transmission system that are necessary to maintain electrical stability and reliability, as well as to provide service to BPA's customers (16 USC 838b(b-d)).

BPA's 115-kV Albany-Eugene transmission line was originally built in 1940. This existing transmission line serves BPA's utility customers, who in turn serve communities in western Oregon. No major rebuild work has been done on the Albany-Eugene line since it was originally built. In general, wood poles for transmission lines are expected to have a service life of 55 to 60 years, at which point they are usually replaced due to age, rot, and other forms of deterioration. Most structures on the Albany-Eugene line now exceed their service life and are physically worn and structurally unsound in places. Some of the transmission line poles are made of Douglas fir, which is prone to decay and subsequent collapse.

BPA originally planned to prepare an Environmental Assessment. However due to the significant number of danger trees that would need to be removed to prevent damage to the line, a Finding of No Significant Impact could not be made, so an EIS was developed

Alternatives Considered

Two alternatives were evaluated in detail in the Final EIS: the Proposed Action Alternative and a No Action Alternative. Other alternatives were considered but eliminated from detailed study for various reasons, as explained in the Final EIS. The following describes the two alternatives evaluated in detail in the Final EIS.

Proposed Action Alternative

The Proposed Action Alternative involves replacing aging and deteriorating wood-pole structures and associated structural components on a section of the existing 115-kV Albany-Eugene No. 1 Transmission Line that extends from BPA's existing Albany Substation in the City of Albany, Oregon, approximately 32 miles south to the Alderwood Tap, near the City of Junction City. BPA will use its existing transmission line right-of-way for the new transmission structures, and the line will continue to operate at 115-kV. The general sequence of construction activities will include vegetation clearance, access road construction, removal of conductors and hardware from the existing transmission line, removal of the existing wood pole structures, installation of the replacement wood pole structures, installation of the replacement structure components, and conductor installation and tensioning. Construction activities are expected to begin in June 2012. Operation and maintenance of the transmission line upon completion of construction will be essentially the same as for the existing line.

The main components of the Proposed Action Alternative are as follows:

Replacement Transmission Structures—Existing deteriorating wood pole structures and components along the transmission line will be replaced with new poles and components of essentially the same design. The replacement suspension structures will have one or two wood poles with an above-ground height of 70 feet. The replacement dead-end structures will have three poles and also be 70 feet in height. The steel lattice structures used at the Willamette River crossing will be replaced with wood-pole structures.

Conductors and Overhead Ground Wire—Each of the three conductors on the existing transmission line will be replaced with new conductor. Existing overhead ground wire along the first one-half mile of the transmission line out of the Albany Substation also will be replaced, as will the existing counterpoise at structure 1/2.

Vegetation Clearing—Approximately 55.5 acres of vegetation (mostly agricultural lands) will be cleared within the project area for construction of temporary access roads. Approximately 6,300 existing danger trees (trees that currently or potentially pose a hazard to the line) will be removed along the transmission right-of-way. This removal will occur between August and March to minimize impacts to migratory birds.

Access Roads—BPA will establish access roads where it does not currently have access to the transmission line corridor. Most construction access will consist of temporary access across agricultural fields that will be established by obtaining access rights or constructing stub roads. BPA also will construct 450 linear feet of new permanent roads and improve 3,400 linear feet of existing access roads to provide better access of structure sites during construction and maintenance. Other improvements will include the replacement of gates and the installation of new culverts.

Staging Areas—One or two temporary staging areas approximately 30 acres in size will be established along or near the transmission line easement to store and stockpile structure materials, trucks, and other equipment during construction.

BPA considers the Proposed Action Alternative the environmentally preferred alternative to the No Action Alternative because the No Action Alternative would lead to increasingly unplanned maintenance events following the failure of structures and their components, which would result in unplanned impacts to resources such as wetlands, fish-bearing streams, public health, reliability, and safety. The Proposed Action Alternative will result in less unplanned maintenance events and will decrease reliability concerns. Impacts to migratory birds due to danger tree removal will be the same for either alternative.

No Action Alternative

Under the No Action Alternative, BPA would have not taken action to replace structures along the transmission line or upgrade access roads, and would have continued to operate and maintain the existing transmission line in its current condition. Within and along the existing Albany-Eugene transmission line corridor, the approximately 6,300 danger trees that have been identified for removal would have also been removed as part of the No Action Alternative.

The reliability concerns that prompted the need for this project would have continued to be of concern. BPA would have continued to attempt to maintain the existing line as its aged and rotting wood poles and cross arms further deteriorated. Given the current poor condition of the line, it is reasonable to expect that the No Action Alternative would have resulted in more frequent and more disruptive maintenance activities within the corridor than would have occurred under the Proposed Action Alternative, which would have likely lead to increased impacts to vegetation, fish, and wildlife.

Public Comments on Environmental Impact Statement

During the Draft EIS comment period, input from the public, agencies, interest groups, and others was solicited. Notices were placed in the Federal Register and letters were mailed to approximately 176 people. A public meeting was held in Harrisburg, Oregon on February 22, 2012.

Comments were received from USFWS and EPA. USFWS commented on the need for mitigation for impacts to migratory birds from danger tree removal. EPA was concerned with water quality. Nine people attended the public meeting. Most were concerned with how construction equipment would access the transmission line across their property.

A Notice of Availability for the Final EIS was published in the *Federal Register* (Volume 77, Number 82, Page 25165) on April 27, 2012. One comment was received from EPA, indicating that the Final EIS was responsive to their comments.

Rationale for Decision

BPA has analyzed the environmental impacts of the Proposed Action Alternative and the No Action Alternative, and has considered public comments received throughout the EIS process. In making its decision, BPA also considered how well the alternatives would meet the following project purposes (i.e., objectives) identified for this project in the Final EIS:

- Maintain or improve transmission system reliability to BPA and industry standards
- Continue to meet BPA's contractual and statutory obligations
- Minimize environmental impacts
- Demonstrate cost-effectiveness

The Proposed Action Alternative would best meet these objectives.

Maintain System Reliability

The Proposed Action Alternative, in contrast with the No Action Alternative, helps ensure that overall transmission system reliability for this portion of the transmission system is maintained over the long-term. For the transmission line itself, replacing existing transmission structures that are deteriorated and prone to decay and collapse with brand new, structurally sound structures will actually improve the reliability of this line. Unlike the No Action Alternative, the Proposed Action Alternative also will bring the line up to current BPA and industry standards.

Meet Contractual and Statutory Obligations

The Proposed Action Alternative, in contrast with the No Action Alternative, allows BPA to better ensure that it continues to meet its contractual and statutory obligations. BPA has been providing long-term firm transmission services in the Mid-Willamette Valley for more than 70 years, and the Proposed Action Alternative will lessen the potential for, and frequency of, outages that could adversely affect this service as compared to the No Action Alternative. While BPA has no express statutory obligation to rebuild this transmission line, the rebuilt line also will help BPA further its statutory mandate that directs BPA to maintain the transmission system in order to provide service to BPA's customers and maintain system stability and reliability, as appropriate.

Minimize Environmental Impacts

In designing the Proposed Action Alternative, BPA attempted to minimize potential environmental impacts where possible. BPA also identified mitigation measures in the EIS that would further minimize or avoid potential environmental impacts. BPA believes that the Proposed Action Alternative best achieves the objective of minimizing impacts to the environment while meeting the need for the project.

The following resources will either have low or low-to-moderate impacts under the Proposed Action Alternative: land use and recreation, soils and geology, water quality, floodplains, cultural resources, socioeconomics, transportation, air quality, greenhouse gases, and electric

and magnetic fields. The No Action Alternative would have had similar low or low-to-moderate impacts to these resources, because the impacts are mostly related to danger tree removal which would have occurred under both alternatives.

Under the Proposed Action Alternative, impacts to wetlands will be low. In contrast, impacts to wetlands would have been moderate-to-high under the No Action Alternative because disturbance to wetlands would have continued or increased due to the deterioration of structures. Development of new access roads, with little or no planning, would have been required in order to fix failed structures, which could have resulted in moderate-to-high impacts to wetlands, especially if emergency maintenance activities occurred during the wet season.

The Proposed Action Alternative and the No Action Alternative would both have potentially high impacts to the riparian community adjacent to the corridor and moderate impacts to the oak woodland community due to danger tree removal. Due to short-term construction impacts, the Proposed Action Alternative will have low impacts to agricultural, wetland, and upland communities due to clearing, vegetation removal, and temporary access travel routes. These short-term construction impacts would not have occurred under the No Action Alternative.

The Proposed Action Alternative will have high impacts to wildlife due to danger tree removal, which also would have occurred under the No Action Alternative. Similarly, the Proposed Action Alternative will have low impacts to wildlife for activities associated with continuing operations and maintenance, which also would have occurred under the No Action Alternative. During construction, the Proposed Action Alternative will have moderate impacts to fish species listed under the Endangered Species Act (ESA) due to the installation of culverts and fords for temporary access travel routes, as well as increased sediment load that may enter streams due to clearing and vegetation removal. These short-term construction impacts to fish would not have occurred for the No Action Alternative.

As part of the Proposed Action Alternative, BPA will implement mitigation measures identified in the EIS to decrease any potential impacts to ESA-listed fish species. BPA also will comply with any requirements resulting from consultations under Section 7 of the ESA for the project. BPA requested informal consultation with the U.S. Fish and Wildlife Service (USFWS) on December 21, 2011 on the impacts of the Proposed Action on Bradshaw's lomatium and Nelson's checker-mallow. BPA received a letter of concurrence from the USFWS on January 9, 2012 agreeing with BPA's determination that the Proposed Action is not likely to adversely affect the Bradshaw's lomatium or the Nelson's checker-mallow.

BPA submitted Biological Assessments to the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service and USFWS on December 12, 2011 addressing the potential impacts of the Proposed Action on Oregon chub, Upper Willamette River Chinook salmon and Upper Willamette River steelhead. USFWS issued a biological opinion on April 24, 2012, which concluded that the Proposed Action was not likely to jeopardize the continued existence of Oregon chub or result in the destruction or adverse modification of Oregon chub critical habitat and included an incidental take statement. BPA expects NOAA to issue a biological opinion in June 2012 addressing the impacts of the Proposed Action on

Upper Willamette River Chinook salmon and Upper Willamette River steelhead. BPA will be responsible for implementing any requirements under the biological opinion, including any reasonable and prudent measures required in the incidental take statement.

The high impacts to visual resources due to danger tree removal from the Proposed Action would have also occurred under the No Action Alternative. The Proposed Action will have the same low visual impacts due to continuing operations and maintenance as the No Action Alternative, because the rebuilt structures will have the same visual appearance as the existing structures. Due to short-term construction impacts, the Proposed Action Alternative will have moderate impacts to viewers within the urban portions of the corridor; however, the bulk of the corridor is in a rural setting where the visual impacts will be lower. These short-term construction impacts to visual resources would not have occurred for the No Action Alternative.

Under the No Action Alternative, overall impacts to public health and safety would have been moderate. The reliability concerns that prompted the need for the Proposed Action Alternative would have continued to be of concern. The existing line is at high risk of failure due to aging components. Local and/or regional power outages could result from failure of this line, which could put public safety agencies, health providers, and businesses that rely on a steady source of power at risk. Any downed lines resulting from structure failures would have a high potential for causing fires in the vicinity of the downed line or electrocution as a result of accidental or inadvertent contact with a downed line while it is still energized, resulting in a potential risk to public health and safety. Under the Proposed Action Alternative, overall impacts to public health and safety will be low-to-none because the increased reliability of the rebuilt transmission system would reduce the occurrence of power outages due to failure of aging structures and their components and thereby reduce the risk of direct contact to downed lines.

The Proposed Action Alternative will have low impacts due to noise for activities associated with continuing operations and maintenance; the No Action Alternative would have had similar impacts. Due to short-term construction impacts, the Proposed Action Alternative will have moderate impacts as a result of noise within urban portions of the corridor. However, the bulk of the corridor is in a rural setting where the noise impacts of the Proposed Action Alternative will be low, because on-going agricultural practices along the corridor includes machinery with similar sound levels and operational hours as the construction equipment planned for use along the corridor. These short-term construction impacts due to noise would not have occurred for the No Action Alternative.

Demonstrate Cost-Effectiveness

The Proposed Action Alternative will cost $15.9 million to construct. Use of the existing alignment will reduce right-of-way acquisition costs. Use of wooden poles rather than steel structures will decrease the project's material costs.

The cost has been updated since the Final EIS, as more detailed design information has become available. This is a reasonable cost of rebuilding 32 miles of 115-kV line.

Mitigation

All mitigation measures described in the Draft EIS and updated in the Final EIS that apply to the Proposed Action Alternative are adopted. A complete list of these measures is provided in the attached Mitigation Action Plan. Included as part of the Mitigation Action Plan are possible measures to be implemented through the Danger Tree Removal and Migratory Bird Treaty Act Mitigation Strategy. Included as part of the Mitigation Action Plan are the reasonable and prudent measures, terms and conditions, and conservation recommendations contained in the Biological Opinion issued for this project by USFWS and expected to be contained in the Biological Opinion issued for this project by NOAA (the Mitigation Action Plan will be updated as soon as the Biological Opinion is issued by NOAA). Also included are all permit conditions developed by the U.S. Army Corps of Engineers, the Oregon Department of State Lands, and the Oregon Department of Environmental Quality for permits and water quality certifications related to impacts on wetlands and jurisdictional waters of the United States. BPA will be responsible for the execution of all mitigation measures.

Public Availability

This Record of Decision will be available to all interested parties and affected persons and agencies. It is being sent to all stakeholders who requested a copy. Copies of the Albany-Eugene 115-kilovolt No. 1 Transmission Line Rebuild Project Draft and Final EISs and additional copies of this

Record of Decision is available from BPA's Public Affairs Office – DKE-7, P.O. Box 14428, Portland, Oregon 97293-4428. Copies of these documents may also be obtained by using BPA's nationwide toll-free document request line: 1-800-622-4519, or by accessing BPA's project website: http://efw.bpa.gov/environmental_services/Document_Library/Albany-Eugene_Rebuild/.

Issued in Portland, Oregon on June 1, 2012

/s/ Stephen J. Wright
Stephen J. Wright
Administrator and Chief Executive Officer

Mitigation Action Plan
for the
Albany-Eugene Transmission Line Rebuild Project

Mitigation Measures	Time of Implementation
Land Use and Recreation	
• Distribute the proposed schedule of construction activities to all potentially affected landowners and post in recreational areas along the corridor so landowners and recreational users would know when they can expect to experience construction-related disruptions	Prior to construction
• Maintain access during construction	During construction
• Conduct construction activities in coordination with agricultural activities to the extent practicable	During construction
• Instruct equipment operators and construction crews to close gates to avoid disturbances to livestock and to stay within the corridor to minimize impacts to crops	During construction
• Coordinate with individual landowners to ensure that new and/or temporary access roads and gates, and construction and maintenance activities would not disrupt agricultural and commercial operations	Prior to construction
• Compensate affected farmers for any lost crop production caused by construction of the Proposed Action	After construction
• Coordinate with local agencies to avoid construction activities that could disrupt community events or conflict with their own construction activities	Prior to construction
Geology and Soils	
• Place new structures in existing structure holes to the maximum extent practicable to reduce ground disturbance	During construction
• Conduct project construction, including danger tree removal, to the extent practicable, during the dry season when rainfall, runoff, and stream flow are low to minimize erosion, compaction, and sedimentation	During construction
• Install sediment barriers and other appropriate erosion-control devices where needed to minimize sediment transport	Prior to and during construction
• Retain vegetative buffers where possible to prevent sediment from eroding into waterbodies	During construction
• Control runoff and prevent erosion on access road improvements by using low grades, water bars, and drain dips	During construction
• Properly space and size culverts on access roads	During construction
• Use water trucks on an as-needed basis to minimize dust and reduce erosion due to wind	During construction
• Till or scarify compacted soil at structure sites prior to reseeding	During and after construction
• Reseed disturbed areas with a native seed mix as soon as work in that area is completed	During and after construction
• Inspect reseeded and revegetated areas to verify adequate growth; implement contingency measures as needed	After construction
• Conduct construction activities in coordination with agricultural activities to the extent	During construction

Mitigation Measures	Time of Implementation
practicable	
• Assist farm operators in restoring productivity of compacted soils for structure sites on agricultural lands	After construction
• Inspect and maintain facilities to ensure proper function and nominal erosion levels	After construction
Water Resources	
• Prepare and implement a Storm Water Pollution Prevention Plan	During design and construction
• Inspect and maintain tanks and equipment containing oil, fuel, or chemicals for drips or leaks to prevent spills onto the ground or into waterbodies	Prior to and during construction
• Maintain and repair all equipment and vehicles on impervious surfaces away from all sources of surface water	During construction
• Refuel and maintain equipment away from natural or manmade drainage conveyances, including streams, wetlands, ditches, catch basins, ponds, and culverts; provide spill containment and cleanup; and use pumps, funnels, and absorbent pads for all equipment-fueling operations. Keep, maintain, and have readily available appropriate spill containment and cleanup materials in construction equipment, in staging areas, and at work sites	During construction
• Place sorbent materials or other impervious materials underneath individual wood poles at pole storage and staging areas to contain leaching of preservative materials	During construction
• Install erosion control measures prior to work in or near floodplains	Before and during construction
• Monitor revegetation and site restoration work for adequate growth; implement contingency measures as necessary	After construction
• Monitor erosion control Best Management Practices (BMP's) to ensure proper function and nominal erosion levels	During construction
Wetlands and Floodplains	
• Obtain and comply with applicable Clean Water Act permits for all work in wetlands or streams	Before construction
• Identify and flag wetlands	Before construction
• Install erosion-control measures prior to work in or near wetlands, such as silt fences, straw wattles, and other soil stabilizers; reseed disturbed areas as required	Before, during and after construction
• Deposit and stabilize all excavated material not reused in an upland area outside of wetlands	During construction
• Avoid construction within wetlands and wetland buffers to protect wetland functions and values, where possible. Avoid using these areas for construction staging, equipment or materials storage, fueling of vehicles, or related activities	During construction
• Use existing road systems, where possible, to access structure locations	During construction
• Remove all temporary fill and geotextile fabric, and revegetate after use of temporary roads built in wetlands	After construction
• Use herbicides to control vegetation near wetlands in accordance with BPA's Transmission System Vegetation Management Program Final Environmental Impact Statement (BPA 2000) to limit impacts to water quality	Before, during and after construction
• Deposit and stabilize all excavated material not reused in an upland area outside of floodplains	During construction

Mitigation Measures	Time of Implementation
• Install erosion-control measures prior to work in or near floodplains	Before and during construction
• Avoid construction within floodplains to protect floodplain function, where possible	During design
Vegetation	
• Prior to construction, conduct a noxious weed survey within the corridor to more specifically identify existing infestations of noxious weeds	Before construction
• Prior to construction, visit existing noxious weed infestations and conduct pre-emptive measures to minimize transport and expansion of weed occurrences during construction; flag infestations for avoidance (as practicable) during construction	Before construction
• Flag vegetation clearing limits prior to disturbance	Before construction
• Clearly mark danger trees and demarcate danger tree removal disturbance limits, log deck areas, and skid/access routes	Before construction
• Evaluate Oregon white oak trees designated as danger trees for alternative treatments (e.g., top and trim). If possible, top and/or trim Oregon white oak trees designated as danger trees	Before construction
• Identify potential onsite mitigation opportunities specific to vegetation replacement/replanting (e.g., willow planting/cutting installations)	Before construction
• Identify offsite mitigation for forested habitats during the permitting process that could replace tree removal occurring as a result of the Proposed Action	Before construction
• Coordinate with local watershed councils and land conservancies (e.g., Calapooia Watershed Council, Institute for Applied Ecology, and similar groups) regarding tree salvage for use in nearby habitat restoration projects. Determine potential for assisting with or furthering planned mitigation opportunities and priority projects	Before construction
• Use existing road systems (including farm access roads), where practicable to access structure locations	During construction
• Minimize the construction area (footprint) to the extent practicable, especially within wetlands and adjacent waterbody crossings	During construction
• Install construction “envelopes” of silt fencing, straw wattles, or other barrier materials around construction sites to prevent vehicle turnaround, materials storage, or other disturbance outside designated construction areas	During construction
• Place materials storage and staging areas in upland areas (away from wetland/waterbodies)	During construction
• Minimize ground disturbance in proximity to existing noxious weed populations	During construction
• Implement appropriate measures to minimize the introduction and broadcast of weed seeds/propagules, including inspection of vehicles before entering construction areas and appropriate equipment cleaning measures	During construction
• Conduct as much work as possible during the dry season when stream flow, rainfall, and runoff are low to minimize erosion, sedimentation, and soil compaction	During construction
• Cut and remove danger trees during the dry season to minimize compaction. Conduct danger tree removal in a manner that minimizes disruption to remaining trees and shrubs	During Construction
• Do not disturb existing root system of danger trees by “tipping over” danger trees with an excavator or similar machine due to potential wetland impact constraints	During Construction
• Consider using a feller buncher (where access allows) or a “cable and winch” removal approach to limit damage to remaining trees and understory vegetation during danger tree removal	During Construction

Mitigation Measures	Time of Implementation
• Do not allow danger trees to be chipped and left onsite	During Construction
• Top and trim Oregon white oak trees designated as danger trees	During Construction
• Top, trim, and/or girdle a percentage of designated danger trees (e.g., in higher quality habitat areas) to reduce impacts to vegetation and wildlife species, such as small mammals and amphibians	During Construction
• Consider leaving a small percentage of cut and felled danger trees within the corridor as additional habitat/structure for wildlife, particularly small mammals and amphibians where appropriate	During Construction
• Reseed disturbed areas with native grasses and forbs to ensure appropriate vegetation coverage and soil stabilization prior to November 1 (rainy season)	During and after construction
• Inspect seeded sites to verify adequate growth and implement contingency measures as needed	After Construction
• Schedule maintenance for fall or winter to avoid disturbing or destroying plants before they reproduce	After construction
• Salvage natives where possible (especially camas) and replant after construction	Before, during and after construction
• Limit herbicide use to appropriate areas	Before, during and after construction
• Restrict equipment access to wooden pole structures within or near the remnant native prairie areas to the edges of the ROW where possible	During construction
Wildlife	
• Prior to initiating ground-disturbing activities, identify active raptor nest sites by consulting with ODFW and/or USFWS and conduct raptor nesting surveys if required	Before construction
• Install bird diverters where the line crosses the Calapooia and Willamette Rivers	During construction
• Avoid disruptive construction activities within 330 feet of active bald eagle nests during their critical nesting period (January–June)	During construction
• Where practicable, schedule danger tree removal to avoid the critical nesting periods for migratory birds (March 1–September 15)	During construction
• Minimize the construction area to the extent practicable	During construction
• In areas where cottonwoods would be removed, leave understory layer intact (i.e., do not remove hawthorn, cherry, or willow trees)	During construction
• Consider leaving a small percentage of cut and felled danger trees in upland and wetland areas within the corridor as additional habitat/structure for wildlife, particularly small mammals and amphibians	During construction
Fish	
• Implement all impact minimization and mitigation measures identified in Section 7 Consultation with USFWS and NOAA Fisheries	During and after construction
• Conduct all construction activities according to Oregon Department of Fish and Wildlife (ODFW) in-water work guidelines or ODFW-approved in-water work extension for streams identified as having ESA-listed Oregon chub	During construction
• Conduct all construction activities according to ODFW in-water work guidelines or ODFW-approved in-water work extension for all remaining streams identified as containing ESA-listed fish species (Upper Willamette River chinook and Upper Willamette River steelhead)	During construction

Mitigation Measures	Time of Implementation
• Install, monitor, and maintain construction "envelopes" of silt fencing, wattles, or other barrier materials around construction sites to prevent vehicle turnaround, materials storage, or other disturbance outside designated construction areas; locate staging, turnaround, and material storage away from streams	During construction
• Use existing road systems (including farm access roads), where practicable to access structure locations	During construction
• Minimize the construction area (footprint) to the extent practicable, especially within wetlands and adjacent water feature crossings	During construction
• Locate new access roads in previously disturbed areas and away from water crossings, when practicable	During design
• Prevent spills from entering streams and/or groundwater by developing a spill prevention and spill response plan prior to construction; carry spill kits in all construction equipment and vehicles	Before and during construction
• Conduct site restoration as soon as possible following construction; grade disturbed areas to their original contours and plant with suitable native vegetation during the appropriate season	After construction
• Salvage and stockpile selected vegetation (e.g., coniferous trees) for use in nearby watershed stream enhancement/habitat restoration projects. Coordinate with local watershed councils (e.g., Calapooia Watershed Council) regarding any other tree salvage needs	Before and during construction
Visual Quality	
• Locate construction staging and storage areas away from locations that would be clearly visible from residences and parks	Before and during construction
• Use non-reflective insulators (i.e., non-ceramic insulators or porcelain)	During design
• Focus construction lighting on work areas to minimize spillover of light and glare	During construction
• Require that contractors maintain a clean construction site and that the corridor is kept free of litter following construction	During and after construction
Cultural Resources	
• Stop work immediately and notify local law enforcement officials, appropriate BPA personnel, the Oregon State Historic Preservation Office (SHPO), and the interested Tribes if cultural resources (either archaeological or historical materials) are discovered during construction activities.	During construction
• Develop an Inadvertent Discovery Plan that details crew member responsibilities for reporting in the event of a discovery during construction.	Before construction
• Stop construction in the area immediately should human remains and/or burials be encountered. Secure the area, placing it off limits for anyone but authorized personnel, and immediately notify proper law enforcement, the BPA archaeologist, the Oregon SHPO, and the Tribes.	During construction
• Implement any additional mitigation measures for cultural resources identified by the Oregon SHPO through the Section 106 consultation process.	During construction
• Ensure cultural resource monitors are present during construction in the areas agreed to with the SHPO to monitor sites during excavation and to prevent unauthorized collection of cultural materials.	During construction
Socioeconomics	

Mitigation Measures	Time of Implementation
• Maintain access to all businesses and residences during construction	During construction
• Coordinate with AT&T, MCI (Verizon), Pacific Power & Light, Consumers Power, and Eugene PUD to determine exact locations of utilities and minimize service disruptions to other utility lines in the transmission line easement within the Pacific &Western Railroad ROW	Before and during construction
• Compensate landowners at market value for any land rights required to acquire new, temporary or permanent access roads on private lands	Prior to construction
Transportation	
• Prepare a notice about construction activities and a proposed schedule for posting on the Oregon Department of Transportation's (ODOT) traffic advisory web site called Trip Check (www.tripcheck.com)	Prior to and during construction
• Schedule construction activities at transmission line crossings of OR 34 and OR 99E so as to avoid lane closures during peak travel times, as determined in coordination with ODOT	Prior to and during construction
• Use traffic safety signs and flaggers to inform motorists and manage traffic during construction activities on affected roads	During construction
• Repair damage to roads caused by construction	During and after construction
• Keep construction activities and equipment clear of residential driveways as much as possible	During construction
Air Quality	
• Use water trucks to control dust during construction	During construction
• Keep all vehicles in good operating condition to minimize exhaust emissions	Prior to and during construction
• Turn off construction equipment during prolonged periods of non-use	After construction
• Drive vehicles at low speeds (less than 5 mph) on access roads and the BPA easement to minimize dust	During construction
Greenhouse Gases/Climate Change	
• Implement vehicle idling and equipment emissions measures (see mitigation measures in Air Quality).	Prior to, during, and after construction
• Encourage carpooling and the use of shuttle vans among construction workers to minimize construction-related traffic and associated emissions.	Prior to and during construction
• Locate all staging areas as close to construction sites as practicable to minimize driving distances between staging areas and construction sites.	During design and construction
• Locate staging areas in previously disturbed or graveled areas to minimize soil and vegetation disturbance where practicable.	During design and construction
• Use the proper size of equipment for the job.	During construction
• Use alternative fuels for generators at construction sites such as propane or solar, or use electrical power where practicable.	During construction
• Reduce electricity use in the construction office by using compact fluorescent bulbs, and powering off computers every night.	During and after construction
• Recycle or salvage non-hazardous construction and demolition debris to the maximum extent practicable.	During and after construction
• Submit a plan for approval to dispose of wood poles locally where practicable.	Prior to construction

Mitigation Measures	Time of Implementation
• Use locally sourced rock for road construction, if possible.	During construction
Noise, Public Health and Safety	
• Distribute the proposed schedule of construction activities to all landowners directly impacted and post the construction schedule in parks and other noise-sensitive public uses along the corridor to inform the community of when they might experience construction-related disruptions	Before construction
• Properly maintain all construction equipment, including having functioning mufflers	During construction
• Turn off construction equipment during prolonged periods of non-use	During construction
• Where possible, locate stationary equipment away from noise-sensitive properties	During construction
• Limit construction to daytime hours	During construction
• Incorporate mitigation measures discussed in this EIS into contract specifications	Before construction
• Ensure the quality of the transmission line since a properly maintained line produces less noise	Before, during and after construction
• Prepare a health and safety plan that conforms to State of Oregon requirements. All on-site personnel will be responsible for knowing the information included in the health and safety plan; the health and safety plan will be kept on-site and will be available for any visitors to the site	Before construction
• Hold a safety meeting to start each on-site workday to discuss potential safety concerns	During construction
• Hold monthly meetings between BPA and the contractor to discuss safety concerns	Before and during construction
• Secure the site at the end of each work day to protect the public and on-site equipment	During construction
• Notify the BPA Contracting Officer's Technical Representative (COTR) immediately if a hazardous material is discovered that could pose an immediate threat to human health or the environment, and stop work in that area until given notice to proceed with work	During construction