

Alvey-Fairview Transmission Line Rebuild Project

Finding of No Significant Impact

Bonneville Power Administration
DOE/EA-1891
May 2014

Summary

Bonneville Power Administration (BPA) announces its environmental findings for the Alvey-Fairview Transmission Line Rebuild Project. The project involves rebuilding the existing 230-kilovolt (kV) transmission line that runs from Eugene to Coquille, Oregon. The aging, 97.5-mile-long line requires replacement of its wood-pole structures and other line components and needs improvements to its access road system.

BPA has prepared an environmental assessment (EA) evaluating the Proposed Action and the No Action Alternative. Based on the analysis in the EA, BPA has determined that the Proposed Action is not a major federal action significantly affecting the quality of the human environment, within the meaning of the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321 *et seq.*). Therefore, the preparation of an environmental impact statement (EIS) is not required and BPA is issuing this Finding of No Significant Impact (FONSI) for the Proposed Action. The Proposed Action is not the type of action that normally requires preparation of an EIS and is not without precedent.

The comments received on the Draft EA and responses to the comments are included in the Final EA. The Final EA also identifies changes made to the Draft EA.

Attached is a Mitigation Action Plan that lists all the mitigation measures that BPA and its contractors are committed to implementing. The FONSI also includes a statement of findings on how the Proposed Action impacts wetlands and floodplains. Impacts to wetlands and floodplains would be avoided where possible and minimized by the mitigation measures included in the EA and Mitigation Action Plan where there is no practical alternative.

Public Availability

This FONSI will be mailed directly to individuals who previously requested it, a notification of availability will be mailed to other potentially affected parties, and the Final EA and FONSI will be posted on BPA's project website:

www.bpa.gov/goto/AlveyFairviewRebuild .

Proposed Action

Under the Proposed Action, BPA would remove and replace the wood-pole transmission line structures, restring the existing conductors and fiber optic cable, replace about ½ mile of overhead ground wire, install a circuit switcher and potential transformer within existing right-of-way, and replace insulators and hardware that holds conductors on existing lattice-steel towers. The project would also improve the access road system (construct, grade, gravel, or reconstruct road beds and install, replace or repair culverts and bridges); remove some vegetation along the transmission line right-of-way and access roads; establish temporary staging areas and tensioning sites; and revegetate areas disturbed by construction activities.

Construction is expected to take place from June 2014 to December 2015 with a wintertime shutdown between December 2014 and April 2015. Details of the Proposed Action are presented in Chapter 2 of the EA.

No Action Alternative

Under the No Action Alternative, BPA would not rebuild the transmission line or upgrade access roads, bridges, or culverts as a single coordinated project. Construction activities associated with the Proposed Action would not occur. However, the reliability and safety concerns that prompted the need for the Proposed Action would remain. BPA would replace aged and rotting structures as they deteriorate and maintain or construct access roads to allow access to structures on an as-needed basis.

Given the current poor condition of the transmission line, the No Action Alternative would likely result in more frequent and more disruptive work to replace structures and maintain access roads. It might be possible to plan some of these activities, but some repairs would likely occur on an emergency basis as various parts of the transmission line continue to deteriorate.

Significance of Potential Impacts of the Proposed Action

To determine whether the Proposed Action has the potential to cause significant environmental effects, the potential impacts of this alternative on human and natural resources were evaluated and presented in Chapter 3 of the EA. To evaluate potential impacts, four impact levels were used – high, moderate, low, and no impact. These impact levels are based on the considerations of context and intensity defined in Council on Environmental Quality regulations (40 Code of Federal Regulations (CFR) 1508.27).

High impacts could be considered significant impacts, if not mitigated, while moderate and low impacts are not. The Proposed Action would have no significant impacts.

The following discussion provides a summary of the Proposed Action's potential impacts and the reasons these impacts would not be significant.

Land use and recreation

Impacts to land use and recreation would be low.

- Because most transmission structures would be replaced in the same locations and most road work would be within existing road beds, long-term changes in land use would be minimal and limited to a conversion of about 7 acres of agriculture use to new access road. New road segments would be relatively short (0.2 mile or less) and would not prohibit the remainder of the property from continuing to be used for agriculture.
- About 225 acres of agricultural land would be disturbed for structure replacement or temporary access, but disturbance would be temporary, landowners would be compensated for crop damage, and BPA would assist in restoring compacted soils.
- The removal of about 180 trees for access road work and the potential removal of up to 100 trees following construction would be dispersed across the forested areas of the 160-mile access road system and 97.5 mile line and would not substantially change existing forestry uses.
- There would be no long-term changes to recreational use to the three county parks crossed by the line or other nearby recreational areas; impacts would be limited to temporary construction disturbance of noise, dust, access closures of undeveloped portions of the parks, and potential traffic delays.
- Of the 27.5 miles of easement required for access roads, only 7.8 miles would be for new road and the rest would be for rights to use existing roads that would not change land use, including the 6.4 miles of new access-rights roads on BLM land.

Geology and soils

With mitigation measures applied, impacts to geology and soils would be low.

- Mitigation measures (e.g., sediment barriers, reseeding disturbed areas, and use of gabion walls) would minimize potential erosion and compaction impacts to soils and geology during and following construction.

- Improved roads would be more stable and better capable of handling stormwater and would reduce soil erosion and risks of mass wasting, particularly during storm events.

Vegetation

Impacts to vegetation would be low.

- The removal of about 280 trees (180 trees for access road work and a potential additional 100 trees adjacent to the right-of-way following line construction) is a small number of trees relative to forested areas in which the line passes through and low growing vegetation is expected to quickly regenerate.
- Mitigation measures (e.g., return temporarily disturbed areas to the original contours and conduct site restoration and reseeded as soon as practicable following construction) would help reestablish vegetation in disturbed areas.
- Mitigation measures would help limit spread of existing noxious weed infestations (e.g., power-washing construction vehicles to remove seeds, flag infested areas for avoidance, conduct pre-project weed treatments) and the Proposed Action would not be expected to introduce noxious weeds into new areas or affect the productivity of adjacent vegetation communities.

Streams and fish

Impacts to streams and fish would be low-to-moderate.

- Erosion control measures would minimize or eliminate the delivery of sediments from construction activities into nearby streams, mitigation measures would reduce the risk and extent of accidental oil or fuel spills, and the project would not be expected to contribute to impaired water quality or inhibit any water quality recovery efforts on streams crossed by the transmission line.
- Tree removal would have little to no effect on temperature or availability of large wood in streams since few trees would be removed from riparian areas. Most of the tree removal is associated with cut slopes or road widening in upland areas.
- New or improved access roads would be constructed with compacted gravel surfaces, drainage dips, culverts, or water bars so the potential for long-term surface erosion to nearby streams is minimized.
- Replacing many undersized culverts with adequately sized crossing structures would accommodate a wider range of flows, prevent excess sediment accumulation, and increase fish passage.

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- In-water work for culvert and stream crossing improvements would be implemented with mitigation measures (construction timing restrictions, fish salvage, diverting stream flow, isolating work areas, on-site biologist, etc.), to minimize short-term turbidity and direct construction-related impacts to Endangered Species Act (ESA)-listed fish species.
 - BPA would follow any additional mitigation measures required by National Marine Fisheries Service (NMFS) and the Oregon Department of Fish and Wildlife (ODFW) for Oregon Coast coho salmon and Upper Willamette River Chinook salmon once consultation with these agencies for ESA compliance (NMFS) and fish passage design approval (ODFW) has been completed.

Wetlands, floodplains, and groundwater

Impacts to wetlands, floodplains, and groundwater would be low-to-moderate.

- Only about 0.08 acre of wetland distributed across 54 wetlands would be permanently impacted for the wood pole replacements and compensatory mitigation would mitigate for the approximate 6.5 acres of permanent impacts due to access road work where wetlands could not be avoided.
- Temporary impacts to wetlands (about 3.45 acres due to structure replacement and about 2 acres for road work) would be minimized with mitigation measures—working in the dry if possible, flagging wetland boundaries, using wetland mats, and reseeding disturbed areas.
- Erosion control measures during construction would lessen potential sedimentation to wetlands adjacent to work areas.
- The underground portions of wood poles placed in wetlands (most would be placed in the same holes from which they were removed) would be contained in culverts to help prevent potential leaching of pentachlorophenol into surrounding wet areas or groundwater.
- The 1.6 acres of temporary floodplain disturbance would be short-term, would not alter the floodplain ecological characteristics, and would only have the potential to slightly decrease the existing ecological characteristics of the floodplains.
- The 1.9 acres of unavoidable road development in floodplains would minimally decrease flood-storage capacity and would not alter the course of floodwaters.
- Compaction of soils around structures or along access roads would not be expected to impact groundwater quality, no impermeable (paved) surfaces would

be created to decrease potential water infiltration, and spill prevention measures would lessen risk and extent of accidental oil or fuel spills reaching groundwater.

Wildlife

Impacts to wildlife would be moderate.

- Although common wildlife species would be impacted during construction through habitat and nesting disturbances and possible injury or death of smaller species that remain in the area, most impacts would be temporary and limited to specific structure locations for short durations.
- Potential impacts to ESA-listed marbled murrelets and spotted owls would be minimized through construction timing restrictions, as agreed upon with the US Fish and Wildlife Service (USFWS), and tree removal would not affect nesting trees and would maintain spotted owl existing canopy cover habitat above the USFWS 60 percent threshold.
- The project would not affect ESA-listed Fender's blue butterfly larvae or eggs, and timing restrictions would eliminate potential impacts to adult butterflies that could feed within portions of the right-of-way.
- Potential habitat modifications due to noxious weed infestations would be minimized through mitigation measures to control the spread of noxious weeds.
- The installation of bird diverters on the transmission line, where feasible, over rivers, wetlands or high bird use areas would minimize potential bird-line collisions.

Cultural resources

Impacts to cultural resources would be moderate.

- Of the eight archeological sites identified in the project area, access road construction could adversely affect a portion of two of the sites. BPA is continuing to work with the State Historic Preservation Officer and the consulting Tribes to develop a plan to resolve potential adverse effects and implement impact minimization and avoidance measures.

Visual quality

Impacts to visual quality would be low.

- The improvements would occur in areas where the landscape is already altered, replaced structures would appear nearly identical to the existing structures (

with some potential increases in height of 5 to 10 feet), and most access road improvements or reconstruction would occur in road corridors that already exist.

- The impacts of construction activities on visual quality would be temporary and remote; a small number of sensitive viewers would see the construction activities. Furthermore, viewers would be few because the access roads would be gated.
- The dispersed removal of trees would not substantially change the existing visual environment.

Socioeconomics and public services

Impacts to socioeconomics and public services would be low. There would be no disproportionate adverse effects to environmental justice populations.

- Because there would be no change in underlying landownership, there would be no impact to property taxes.
- Property owners who would be affected by new access road easement acquisition would be compensated.
- Communities and public services would experience minimal impacts during construction because access to all properties would be maintained during construction, and local agencies, residences, and businesses near the transmission line would be notified of upcoming construction activities and potential disruptions.
- Some local procurement of equipment and spending by construction workers could benefit the economy in communities near the transmission line during construction.
- Any short-term traffic delays from approximately four construction vehicles would not disrupt the ability of emergency services personnel to respond to emergencies.

Noise, public health, and safety

Impacts to noise, public health, and safety would be low.

- Noise impacts from construction would temporarily contribute to similar existing machinery noise from regular agricultural practices. Corona noise from the transmission line would not change from current levels.
- There are no known occurrences of hazardous materials or reported contamination within the transmission line right-of-way and implementation of

spill prevention and response measures would avoid, minimize, or mitigate potential impacts to public health and safety.

- The line's operating voltage would remain the same as the existing line's operating voltage. No changes to the electromagnetic field levels in the vicinity of the transmission line would occur.
- New, properly installed connecting hardware would reduce risk associated with aging hardware.

Transportation

Impacts to transportation would be low.

- Structure replacement and access road work would only cause temporary and localized delays on county roads, state highways, and transmission line access roads.
- Impacts to the transportation network would be minimized through: notifications about construction activities, coordination with Oregon Department of Transportation, traffic management during construction, repairing any damage caused to roads during construction, and keeping residential driveways clear to the extent possible.

Air quality and greenhouse gases

Impacts to air quality and greenhouse gases would be low.

- Air quality impacts would be limited to the construction site, would be temporary in nature, and would not result in violations of air quality standards.
- Mitigation measures (e.g. use of water trucks to control dust during construction and turning off construction equipment when not in use) would minimize impacts to air quality.
- Construction vehicle emissions for the entire 2-year construction period would be the equivalent to the annual carbon dioxide emissions of 44 passenger vehicles.
- The carbon released during tree removal for trees at their current size would be less than half of that from construction vehicle emissions. Furthermore, none of trees that would be removed would have reached full maturity or maximized carbon sequestration capacity.

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- Greenhouse gas emissions would be far below the U.S. Environmental Protection Agency mandatory reporting threshold of 25,000 metric tons or more and would not represent a substantial change from current conditions.

Determination

Based on the information in the EA, as summarized here, BPA determines that the Proposed Action is not a major federal action significantly affecting the quality of the human environment within the meaning of NEPA (42 USC 4321 *et seq.*). Therefore, an EIS will not be prepared and BPA is issuing this FONSI for the Proposed Action.

Issued in Portland, Oregon

/s/ F. Lorraine Bodi

F. Lorraine Bodi
Vice President
Environment, Fish and Wildlife

April 21, 2014

Date

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Alvey-Fairview Transmission Line Rebuild Project

Mitigation Action Plan

Bonneville Power Administration
DOE/EA-1891

Mitigation Action Plan

This Mitigation Action Plan (MAP) is part of the Finding of No Significant Impact (FONSI) for the Alvey-Fairview Transmission Line Rebuild Project. The project would rebuild the aging 97.5-mile-long 230-kilovolt (kV) Alvey-Fairview transmission line in Lane, Douglas, and Coos counties, Oregon.

This MAP is for the Proposed Action and includes all of the integral elements and commitments made in the Environmental Assessment (EA) to mitigate any potential adverse environmental impacts.

BPA and its contractor are responsible for implementing the mitigation measures during various phases of project construction. Relevant portions of this MAP will be included in the construction contract specifications. This will obligate the contractor to implement the mitigation measures identified in the MAP that relate to contractor responsibilities during and after construction.

If you have any general questions about the project, contact the Project Manager, Richard Heredia: toll-free telephone 800-282-3713, direct telephone 360-619-6398, or e-mail rhheredia@bpa.gov.

If you have questions about the MAP, contact the BPA lead for the environmental review, Doug Corkran: toll-free telephone 800-282-3713, direct telephone 503-230-7646, or e-mail dfcorkran@bpa.gov.

If you have questions about the MAP during implementation, contact the BPA environmental lead for project implementation, Oden Jahn: toll-free telephone 800-282-3713, direct telephone 503-230-7501, or e-mail owjahn@bpa.gov.

This MAP may be amended if revisions are needed due to new information or if there are any significant project changes.

Mitigation Measures

Minimization and mitigation measures have been identified to reduce potential impacts associated with the Proposed Action, and are provided in the Mitigation Action Plan Table.

Mitigation Action Plan Table

Land use and recreation
Provide a construction schedule to all potentially affected landowners.
Post a construction schedule in affected recreational areas.
Maintain existing access to residences and other areas during construction.
Schedule construction during periods when active farms along the corridor are likely to be fallow, to the extent practicable, to minimize the potential for crop damage.
Leave gates as they were found to avoid disturbances to livestock.
Limit construction activities to the existing right-of-way and easements to minimize impacts to crops.
Coordinate with individual landowners to ensure that new or temporary access roads and gates and construction and maintenance activities would minimize disruptions to agricultural and commercial operations.
Compensate landowners for the value of commercial crops damaged or destroyed by construction activities.
Coordinate with local agencies to avoid construction activities that could conflict with their own construction activities.
Install permanent gates at selected locations to minimize unauthorized use of BPA access roads and unauthorized entry to BPA right-of-way as part of project construction.
Geology and soils
Place new structures in existing structure holes to the maximum extent practicable to reduce ground disturbance.
Conduct project construction, including tree removal, during the dry season when rainfall, runoff and stream flow are low to minimize erosion, compaction, and sedimentation, to the extent practicable.
Follow <i>Landslide Investigation and Mitigation</i> guidance or other current geotechnical engineering guidance to minimize impacts from structure replacement and road work in known landslide hazard areas (Transportation Research Board, 1996 ¹).
Contact BPA geotechnical specialists if geotechnical issues, such as new landslides, arise during construction.
Install sediment barriers and other appropriate erosion-control devices where needed to minimize sediment transport.
Retain vegetative buffers where possible to prevent sediment from entering waterbodies.
Control runoff and prevent erosion on access road improvements by using low grades, water bars, and drain dips.
Properly space and size culverts on access roads.
Use water trucks on an as-needed basis to minimize dust and reduce erosion due to wind.
Till or scarify compacted soil at structure sites prior to reseeding.
Reseed disturbed areas with a native seed mix as soon as work in that area is completed.
Inspect reseeded and revegetated areas to verify adequate growth; implement contingency measures as needed.
Conduct construction activities in coordination with agricultural activities to the extent practicable.
Assist farm operators in restoring productivity of compacted soils for structure sites on agricultural lands.
Allow agricultural activities to resume on temporarily disturbed lands as soon as construction is complete.
Stabilize permanently disturbed areas for new access roads with a top layer of pavement or gravel for the roadway and revegetate the roadway shoulders.
Inspect and maintain facilities to ensure proper function and nominal erosion levels after construction.
Vegetation
Demarcate vegetation clearing limits prior to disturbance.

¹ See Chapter 7 (*References*) of the Alvey Fairview Transmission Line Rebuild Project Draft or Final Environmental Assessment for citations used in the Mitigation Action Plan.

Clearly mark trees identified for removal and demarcate tree removal disturbance limits and staging areas.
Use existing road systems (including forest/farm access roads), where practicable, to access structure locations.
Minimize the construction area (footprint) to the extent practicable, especially within wetlands and adjacent waterbody crossings.
In sensitive vegetation areas, install construction "envelopes" of silt fencing, weed free straw wattles, or other barrier materials around construction sites to prevent vehicle turnaround, materials storage, or other disturbance outside designated construction areas.
Place materials storage and staging areas in upland areas (away from wetland/waterbodies).
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.
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.
Return temporarily disturbed areas to the original (pre-construction) contours and conduct site restoration and revegetation measures as soon as practicable following construction.
Reseed disturbed areas with native grasses and forbs to ensure appropriate vegetation coverage and soil stabilization prior to the beginning of the rainy season (November 1).
Inspect seeded sites to verify adequate growth and implement contingency measures as needed.
Conduct a noxious weed survey within the transmission line right-of-way prior to construction to more specifically identify existing infestations of noxious weeds.
Visit existing noxious weed infestations and conduct preemptive measures to minimize transport and expansion of weed occurrences during construction; flag infestations for avoidance (as practicable) during construction.
Minimize ground disturbance in proximity to existing noxious weed populations during construction.
Install and use weed wash stations at selected locations along the transmission line right-of-way.
Minimize disturbance to vegetation; only remove vegetation that would interfere with the proposed construction activities.
Return temporarily disturbed areas to their original (pre-construction) contours and conduct site restoration and revegetation measures before or at the beginning of the first growing season following construction.
Restore all temporarily disturbed soils resulting from roadwork (e.g., spoil areas, cut/fill slopes, staging areas, etc.) according to BLM requirements and agency Biological Opinions for seeding and mulching.
Replant native riparian species at specified bridge/culvert replacement locations during the dormant season (November 1 to February 1).
Salvage and stockpile selected topsoil for replacement on cut/fill slopes to improve site restoration and plant establishment.
Conduct a weed survey prior to construction to identify infestation areas. BPA would target existing infestation areas on BLM land for BLM-approved treatment prior to construction; BPA would perform follow-up monitoring and treat infestation areas after construction if needed.
Install and use weed wash stations at selected locations along the transmission line right-of-way.
Conduct post-construction site restoration monitoring with at least three field visits per year until site stabilization is achieved.
Streams and fish
Conduct in-water work in the Coast Fork Willamette River subbasin between July 1 and September 30, or during ODFW biologist-approved extensions.
Conduct in-water work in the Umpqua, South Umpqua, and Coquille subbasins between July 1 and September 15, or during ODFW biologist-approved extensions.
Conduct fish salvage according to National Marine Fisheries Service (NMFS)/ODFW requirements (NMFS/NOAA, 2000; ODFW, 2014).
Divert stream flow around the work area and maintain downstream flow during construction.
Isolate in-water work areas prior to culvert and bridge installations. Dewater work area as necessary for construction and to

minimize turbidity. Do not discharge turbid water to streams.
Install culverts, bridge crossings in accordance with NMFS/ODFW fish passage requirements.
Restrict construction vehicles and equipment access to access roads and existing work areas only. Return temporary disturbance areas for bridge, culvert, and road work to pre-existing contours and seed.
Dispose of waste material generated from access road work in a stable upland site approved by a geotechnical engineer or other qualified personnel, smooth to match adjacent grades, and seed for stability.
Conduct soil disturbing activities during dry conditions to the greatest extent practicable.
Outslope access roads (e.g., 2 to 5%), maintaining natural drainage patterns and minimizing interceptions and concentration of upgradient runoff when practicable (e.g., less than 7% slopes).
Utilize minimum of 18 inch diameter pipes for replacements and installation of additional cross-drains.
Install cross-drains at a slope steeper than road slope and skew approximately 30 degrees from perpendicular to the road to help with self-cleaning.
Install cross-drains long enough so that outlets extend beyond road fill.
Excavate cross-drain inlets to allow for initial sediment influx after construction.
Armor first 25 feet of ditch upgradient from cross-drain and catch basin with rock (e.g., pit-run/jaw rock or equivalent) to decrease the water's energy and slow flow.
Armor cross-drain outlets (e.g., pit run/jaw rock, slash, or equivalent) to decrease the water's energy and slow flows.
Design headwaters culverts (non-fish drainages) for the 100-year storm event and include a blockage allowance when sizing culverts to minimize future maintenance needs.
Size non-fish culverts to provide a free flow condition for the 100-year storm event.
Develop a spill prevention and spill response plan prior to rebuild construction.
Maintain emergency spill control materials, such as oil booms and spill response kits, on-site at each bridge/culvert replacement site at all times and ready for immediate deployment.
Include small sorbent booms (sausage booms), sorbent sheets/pads and socks, vermiculite/kitty litter, duct tape, heavy duty garbage bags, zip ties, and nitrile gloves in spill kits. Restock materials within 24 hours if used.
Outfit heavy machinery (e.g., excavators) with fire extinguisher, shovel, first aid kits, and caps and plugs for machine hydraulic lines and associated attachments (e.g., hammer/plate compactor, etc.).
Stockpile and make available large sorbent booms, straw bales, straw wattles, and turbidity curtains at each specified bridge/culvert replacement site to quickly respond to any spills or turbidity and erosion concerns during construction.
Store, fuel, and maintain all vehicles and other heavy equipment (when not in use) in a designated upland staging area located a minimum of 150 feet away from any stream, waterbody, or wetland or where any spilled material cannot enter natural or manmade drainage conveyances.
Confirm equipment is clean (e.g., power-washed) and that it does not have fluid leaks prior to contractor mobilization of heavy equipment to site. Inspect equipment and tanks for drips or leaks daily and make necessary repairs within 24 hours.
In the event of a spill, immediately contain the spill, eliminate the source and deploy appropriate measures to clean and dispose of spilled materials in accordance with federal, state, and local regulations.
Wetlands, floodplains, and ground water
Avoid and minimize wetland/waters impacts where possible by re-routing access roads, decreasing road width, or only crossing wetlands during the dry season.
Obtain and comply with applicable Corps of Engineers Clean Water Act and State of Oregon Removal/Fill permits for all work in wetlands or streams.
Identify and flag wetland boundaries before construction.
Install erosion-control measures prior to work in or near wetlands (e.g., silt fences, straw wattles, and other sediment control measures) and reseed disturbed areas as required.
Place new poles installed in wetlands inside a four-foot diameter corrugated metal pipe. This measure would help prevent

leaching of wood preservative to surrounding wetlands or waters.
Deposit and stabilize all excavated material not reused in an upland area outside of wetlands.
Avoid construction within wetlands to protect wetland functions and values, where possible. Avoid using these areas for construction staging, equipment or materials storage, or fueling of vehicles.
Use existing road systems, where possible, to access structure locations.
Remove all temporary fill and geotextile fabric and revegetate temporary roads built in wetlands after use.
Restore all temporary disturbance areas to original contours and decompact, if necessary.
Replant all temporary disturbance areas within wetlands with native species and remove or control invasive plants until native plants are well-established. Monitor revegetated wetland areas for three years. Use herbicides to control vegetation near wetlands in accordance with <i>BPA's Transmission System Vegetation Management Program Final Environmental Impact Statement /Record of Decision</i> (BPA 2000) to limit impacts to water quality.
Purchase wetland mitigation bank credits and/or in-lieu fee program mitigation credits, and/or participate in payment-in-lieu programs as mitigation for 264,905 square feet (6.08 acres) of permanent wetland impacts.
Purchase 3.2 credits at the Coyote Prairie North Mitigation Bank to replace lost wetland functions and values for 3.2 acres of wetland impact in the Coast Fork Willamette River watershed.
Purchase 2.40 credits from either the Cow Hollow Mitigation Bank or the Umpqua Interior Foothills In-Lieu Fee Program to replace lost wetland functions and values for the 2.39 acres of wetland impact in the Upper and South Umpqua River watersheds.
Purchase 0.28 credit at either the Cow Hollow Mitigation Bank or the Umpqua Foothills In-Lieu Fee Program to mitigate for 0.49 acre of impacts and purchase of 0.21 credit from the Oregon State Payment-in-Lieu Program.
Deposit and stabilize all excavated material not reused in an upland area outside of floodplains.
Install erosion-control measures prior to work in or near floodplains.
Avoid construction within floodplains to protect floodplain function, where possible.
Prepare and implement a storm water pollution prevention plan.
Inspect and maintain tanks and equipment containing oil, fuel, or chemicals for drips or leaks to prevent spills onto the ground or into waterbodies.
Maintain and repair all equipment and vehicles on impervious surfaces away from all sources of surface water.
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.
Place sorbent materials or other impervious materials underneath individual wood poles at pole storage and staging areas to contain leaching of preservative materials.
Place poles located in wetlands inside metal culverts backfilled with crushed rock to help prevent leaching of the preservative material into surrounding areas.
Install erosion control measures prior to work in or near floodplains.
Monitor revegetation and site restoration work for adequate growth; implement contingency measures as necessary.
Monitor erosion control BMPs to ensure proper function and nominal erosion levels.
Wildlife
Install bird diverters where the line crosses rivers, wetlands, or other high bird-use areas, and would be technically feasible.
Minimize the construction area to the extent practicable.
Leave a small percentage of cut and felled danger trees as snags in upland and wetland areas within the transmission line as additional habitat/structure for wildlife, particularly small mammals and amphibians.
Top, trim, or girdle a percentage of designated danger trees to create snags (e.g., in higher quality habitat areas) to reduce

impacts to vegetation and wildlife species, such as small mammals and amphibians.
Limit removal of Fender's blue butterfly host or nectar plants to the minimum necessary for construction.
Restore areas cleared for construction to pre-construction condition.
Re-vegetate disturbed areas with weed-free seed mixes and plantings that include nectar plants for Fender's blue butterfly.
Implement the following construction timing restrictions:
Northern spotted owl critical breeding period: No work within established disturbance distance between March 1 and July 7 (See Section 2.1.7 of the Final EA for additional information on wildlife restrictions).
Marbled murrelet MAMU A locations: No work between April 1 and August 5. Between August 6 and September 15, start work two hours after dawn and stop work two hours before dusk. Marbled murrelet MAMU B locations: Start work two hours after dawn and stop work two hours before dusk between April 1 and September 15 (See Section 2.1.7 of the Final EA for additional information on wildlife restrictions and Section 3.6 for more information on MAMU A and B locations).
Fender's blue butterfly adult flight season: No work in line miles 1 and 2 between April 15 and July 7.
Provide support for USFWS's research activities benefiting ESA-listed species.
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.
Develop an Inadvertent Discovery Plan that details crew member responsibilities for reporting in the event of a discovery during construction.
Stop construction in the area immediately should human remains 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.
Implement any additional mitigation measures for cultural resources identified by the Oregon SHPO through the Section 106 consultation process.
Visual quality
Use non-reflective insulators (e.g., non-ceramic insulators or porcelain) to reduce refraction and glare.
Focus construction lighting on work areas to minimize spillover of light and glare.
Require that contractors maintain a clean construction site and remove all construction debris.
Socioeconomics and public services
Maintain access to all businesses, residences, and public facilities during construction.
Coordinate with utility providers that share BPA right-of-way to determine the exact locations of utilities and minimize service disruptions to other utility lines.
Compensate landowners at market value for any new land rights required to acquire new, temporary, or permanent access roads on private lands and apply for applicable permits to obtain new access rights on public lands.
Noise, public health, and safety and electromagnetic fields
Since there would be no significant changes to the noise environment in the vicinity of the line, and no impacts would result from operational activities, no avoidance, minimization, or mitigation measures would be needed.
BPA would implement spill prevention and response BMPs as described earlier in this table under the Streams and Fish section to avoid, minimize, or mitigate impacts to public health and safety from the Proposed Action.
Since there would be no significant changes to the electric and magnetic fields in the vicinity of the line, and no impacts would result from operational activities, no avoidance, minimization, or mitigation measures would be needed.
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 (http://www.tripcheck.com).
Schedule construction activities at transmission line crossings of Interstate 5 and Oregon Route 99 so as to avoid lane

<p>closures during peak travel times, as determined in coordination with ODOT.</p>
<p>Use traffic safety signs and flaggers to inform motorists and manage traffic during construction activities on affected roads.</p>
<p>Repair damage to roads caused by construction.</p>
<p>Keep construction activities and equipment clear of residential driveways to the extent possible.</p>
<p style="text-align: center;">Air quality and Greenhouse gases</p>
<p>Use water trucks to control dust during construction.</p>
<p>Keep all vehicles in good operating condition to minimize exhaust emissions.</p>
<p>Turn off construction equipment during prolonged periods of non-use.</p>
<p>Drive vehicles at low speeds (less than 5 miles per hour) on access roads and the BPA easement to minimize dust during high dust conditions.</p>