

In cooperation with the U.S. Forest Service

Hills Creek-Lookout Point Transmission Line Rebuild Project

Finding of No Significant Impact and Floodplain and Wetland Statement of Findings

DEPARTMENT OF ENERGY
Bonneville Power Administration
DOE/EA-1967
September 2017

Summary

Bonneville Power Administration (BPA) announces its environmental findings for the Hills Creek-Lookout Point Transmission Line Rebuild Project. The project involves rebuilding the Hills Creek-Lookout Point transmission line, which runs from Oakridge to Lowell in Lane County, Oregon. The existing 26-mile-long 115-kilovolt (kV) transmission line is aging, and BPA proposes to replace its wood-pole structures and other line components and improve its road system that provides access to the line.

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 those 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 practicable alternative.

Public Availability

BPA will mail this FONSI 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 are posted on the project webpage at www.bpa.gov/goto/HillsCreekLookoutPoint.

Proposed Action

Under the Proposed Action, BPA would remove and replace all 224 wood-pole transmission line structures; realign segments of the transmission line in line miles two and three; replace wood-pole structures with steel monopole structures in line mile five; replace existing conductors, overhead wire, and counterpoise; replace two disconnect switches; establish a temporary material storage yard, helicopter landing pads, and tensioning sites; enhance the access road and trail system; acquire new access road rights along the transmission line and new easements in line miles two and three; and remove trees and other vegetation.

BPA is working now to determine the best way to sequence the work over the next few years. BPA will issue a public notification of the construction schedule once it is determined.

No Action Alternative

Under the No Action Alternative, BPA would not rebuild the transmission line or upgrade access roads, or culverts, as a single coordinated project. The structures that are currently located in the rock fall area of line mile two and the landslide area of line mile three would be repaired in their current locations, but would be susceptible to future damage from rock falls and landslides. BPA would continue to operate and maintain the existing transmission line in its current condition, replacing aged and rotting structures as they deteriorate, maintaining access roads to allow access to structures on an as-needed basis, and managing vegetation for safe operation.

The No Action Alternative would likely result in more frequent and more disruptive maintenance activities than has been required in the past. The overall scale and scope of the repairs that would be done under the No Action Alternative would be smaller than what is planned under the Proposed Action. The maintenance program addresses immediate needs to keep the transmission line functioning, and would likely not include more comprehensive improvements such as access road work to improve water runoff and installation of fish-passable culverts. Access road work under the No Action Alternative would be limited to enhancements necessary to allow access to specific structures for as-needed repairs and maintenance.

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 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 summarizes the reasons the Proposed Action's potential impacts would not be significant.

Land Use, Recreation and Transportation

Impacts to land use, recreation, and transportation would be low.

- Most transmission structures would be replaced in the same locations, and most road work would be within existing road beds.
- Realignment of the transmission line in line miles two and three would result in the conversion of about 4 acres of forested Forest Service land and require the removal of approximately 1,100 trees; however, about 4 acres of existing transmission line right-of-way would be abandoned and rehabilitated, reverting back to forestlands.
- BPA would install or replace 51 gates at access road entrances to deter unauthorized use of BPA's access roads, thus limiting public access to Forest Service land and other public and private lands.
- Only 0.1 mile of new access road would be constructed and 0.5 mile of road would be abandoned and rehabilitated.
- Landowners would be able to keep or sell merchantable trees removed from their lands as a result of the Proposed Action.
- Impacts to commercial and residential uses adjacent to the transmission line in Oakridge would be short-term, such as increases in noise and dust, and temporary access disruptions.
- There would be no impact to flight traffic at the Oakridge State Airport and impacts to airport uses would be short-term – such as temporary traffic delays accessing the airport, and increase in noise and dust during construction.
- There would be no long-term impacts to recreation. Temporary disturbances to parks and trails near the transmission line and access roads may include temporary closures of portions of the facilities to ensure the safety of recreational users during construction, traffic delays to access the parks from public roadways, and dust and noise from construction activity.
- There would be no long-term impacts on transportation. Temporary impacts would include a short-term increase in traffic on local roads and state highways and potential traffic delays near construction staging areas. Improvements to LaDuke Road, a public roadway, would provide long-term benefits to other roadway users by enhancing the condition and safety of this road.

Geology and Soils

Impacts to geology and soils would be low.

- The existing structure holes would be reused where possible for the new structures, minimizing potential soil disturbance. The removal and installation of transmission structures would temporarily disturb about 51 acres of soils.
- Construction of new access roads and trails would disturb about 1 acre of soil and reconstruction of deteriorated access roads would disturb about 1.5 acres of soil. These permanent disturbance

areas would be stabilized by applying a certified weed-free gravel top layer to the roadways and trailbeds.

- Barrier wraps, or other encapsulating methods, would be installed on poles within 50 feet of wetlands or streams or within the 100-year floodplain to prevent potential leaching of pentachlorophenol (PCP) into surrounding soils.
- Realignment of portions of line miles two and three would reduce risk of damage to structures from rock falls and landslides.
- BPA would incorporate features such as water bars, culverts, and drain dips into the road design to reduce potential for erosion.
- Mitigation measures (e.g., sediment barriers, reseeding disturbed areas, and conducting construction activities during the dry season) would minimize potential erosion and compaction impacts to soils and geology during and following construction.

Vegetation

Impacts to vegetation would be low.

- A total of 51 acres of vegetation would be disturbed or cleared for construction activities, and up to 2,700 trees would be removed. Given the density of vegetation in the project area, and the fact that vegetation removal would be dispersed along the right-of-way, it would be expected that trees and shrubs would naturally revegetate areas where trees would be removed. Residual dormant seeds in the soil would also contribute to subsequent shrub and tree recruitment and disturbed site revegetation.
- There are no special-status plant species, sensitive plant species, or critical habitat in the project area, so none would be affected by the project.
- Mitigation measures (e.g., return temporarily disturbed areas to the original contours and conduct site restoration and revegetation at the beginning of the first growing season following construction) would help reestablish vegetation in disturbed areas.
- The potential spread of noxious weeds would be minimized through mitigation measures—pre- and post-construction weed treatments, avoidance of weed infested areas as possible, construction vehicle inspections or weed wash stations, and revegetation of disturbed areas.
- Abandoned BPA right-of-way would be rehabilitated using native seed, shrub plantings, weed-free straw, and slash from tree removal to revegetate these areas. Species compositions, including species that would benefit native pollinators, and quantities would be determined in coordination with the Forest Service.

Streams and Fish

Impacts to streams and fish would be low.

- There would be only 0.08 acre of permanent impact and only 0.03 acre of temporary impact to streams.
- Only three wood-pole structure replacements and 0.3 miles of access road work would be within 100 feet of waterways with the potential to cause temporary increases in erosion and runoff would occur. With implementation of erosion control measures, the amount of sedimentation potentially entering streams would be low.
- Although 325 trees would be removed within 150 feet of streams, tree removal would have little to no temperature impact on streams with total maximum daily load (TMDL) limits for temperature. Tree removal is unlikely to reduce stream shading because most tree removal would not be immediately adjacent to streams.
- Potential impacts to surface water quality from accidental oil or fuel spills from construction equipment use adjacent to streams would be minimized through mitigation measures including setback distances for fueling and staging areas from waterbodies, and contractor requirements to maintain spill kits and spill containment materials onsite.
- Potential impacts to fish would be limited to in-water work in three fish-bearing streams for three ford improvements (and two temporary construction bridge installations) and the replacement of an undersized culvert to improve fish passage. Potential fish impacts would be minimized through mitigation measures, including scheduling in-water work during approved time frames, isolating in-water work areas, and conducting fish salvage.
- 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 would be minimized.
- The installation of culverts, including fish-passable culverts, would improve flow control and provide localized habitat improvements.

Wetlands, Floodplains and Groundwater

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

- Impacts to wetlands would be limited to only 0.8 acre of permanent impact and 1.3 acres of temporary impact.
- Impacts to wetlands would be minimized with mitigation measures—working in the dry season if possible, flagging wetland boundaries, using wetland mats, reseeding disturbed areas, and monitoring disturbed areas for re-establishment of perennial vegetation.

- Permanent impacts to wetlands would be mitigated by purchasing compensatory mitigation credits from the Coyote Prairie North Mitigation Bank and making a payment to the Oregon Department of State Lands' Payment-in-Lieu Program.
- Erosion control measures during construction would lessen potential sedimentation to wetlands adjacent to work areas.
- The underground portions of wood poles placed within 50 feet of wetlands and streams and within 100-year floodplains (most would be placed in the same holes from which they were removed) would be contained in barrier wraps, or other encapsulating methods, to help prevent potential leaching of the preservative material (PCP) into surrounding areas.
- Structure replacement work areas and access road widths would be reduced where practical in wetlands to reduce disturbance.
- Impacts to 100-year floodplain would be limited to approximately 5.2 acres of improvement (e.g., grading and rocking) to existing roads. This roadwork would only minimally decrease flood-storage capacity and would not alter the course of floodwaters. Replacement of 20 structures within an unmapped floodplain would not alter floodplain function or flood elevation.

Wildlife

Impacts to wildlife from habitat alterations would be low; impacts from construction noise and activity levels would be moderate.

- The 5.5 acres of habitat, including thermal foraging and hiding cover, that would be converted to right-of-way is located at the edge of an existing road and cleared right-of-way, so any displaced species would be expected to find habitat in adjacent forested areas. In addition, 4 acres of abandoned right-of-way would be rehabilitated for habitat use.
- Although approximately 200 coniferous trees would be removed from northern spotted owl habitat, no trees would be removed within a 300-meter radius of known nest patches; canopy cover would not be reduced below the recommended threshold of 60 percent canopy cover; and construction timing restrictions and no-fly helicopter zones would be implemented within 0.25 mile of active northern spotted owl nest sites during the critical breeding season.
- To compensate for the removal of 21 snags, up to 55 large snags would be created on Forest Service and Corps lands for roosting, perch, and foraging habitat.
- Tree removal would not be conducted between April 1 and July 15 to minimize displacement of nesting birds and to avoid injuring bats inhabiting trees that contain cavities or other features that could support bat natal colonies.
- Spiral bird flight diverters would be installed on the conductors at 19 locations along the right-of-way to reduce potential bird-conductor collisions.
- Potential impacts to western pond turtle would be avoided through preconstruction surveys for possible nesting activity, and marking of no-work zones or turtle relocations as appropriate.

- Installation and replacement of gates would benefit big game habitat by limiting unauthorized off-road vehicle access.
- Construction noise above ambient noise conditions, human intrusion, and other short-term disturbances could temporarily displace wildlife. However, disturbances at any single location would be intermittent and temporary and expected to return to ambient levels after construction is complete.

Cultural Resources

There would be no impacts to archaeological resources; impacts to historic resources would be low.

- The project has been designed to avoid disturbance of known archaeological resources. If ground-disturbing activities result in an inadvertent discovery of cultural resources, all activities near the find would be stopped per BPA's Inadvertent Discovery Plan. The BPA archaeologist, Oregon State Historic Preservation Office (SHPO), land management agencies, and affected Tribes would be notified immediately.
- The essential function of the Hills Creek-Lookout Point transmission line, a historic resource eligible for inclusion in the National Register of Historic Places as a contributing element to the BPA Pacific Northwest Transmission System, would not be altered. However, the realignments and structure changes in line miles two and three, coupled with the conversion of wood monopoles to steel in line mile five constitute an adverse effect. BPA and the SHPO have executed a Memorandum of Agreement (MOA) stipulating how the adverse effects to the transmission line will be resolved. No other historic resources would be altered in any way.

Visual Quality

Impacts to visual quality would be low.

- The majority of poles are located outside of urban areas where residents and workers (sensitive viewers) are located and most of the poles would be replaced in the same location as existing poles, resulting in minimal visual changes. The change in views during construction would be short-term and relatively un-intrusive for residents and workers.
- Most of the access road work would take place away from concentrations of sensitive viewers and would be improving or reconstructing existing roads, resulting in minimal visual impacts.
- The realignment sections of line miles two and three would require additional clearing of right-of-way, resulting in a wider cleared area along the transmission line corridor; however, there are very few sensitive viewers in these areas that would observe these visual changes.
- Replacement of 15 wood-pole structures with taller and lighter-colored steel monopole structures in an urban setting would have a minimal impacts in this area where there are many other structures and visual distractions.
- The Proposed Action would not introduce new sources of light or glare.

Socioeconomics and Public Services

Impacts to socioeconomics and public services would be low.

- The Proposed Action would not cause any permanent population changes in Lane County.
- Temporary changes could include an increase in population, stimulation of the local economy, and demand for lodging for construction workers.
- 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.
- Property owners who would be affected by new access road easement acquisition would be compensated at fair market value.
- There would be no disproportionate adverse effects to environmental justice populations.

Noise, Public Health, and Safety

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

- Construction noise levels at 50 feet from a construction site would range from 80 dBA to 92 dBA with higher temporary-intermittent levels during helicopter and possible back-up generator use (over 100 dBA). These short-term noise disturbances could temporarily impact residents and recreational users near the transmission line.
- Existing audible noise levels (corona noise) from the transmission line would decrease with the rebuilt line.
- 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.
- Electric and magnetic fields would not change except in line mile five where steel monopole structures would replace wood-pole structures, resulting in a slight increase in electric and magnetic fields within the transmission line right-of-way. Despite the increase, the electric field would be well below the State of Oregon's regulated threshold, and the average magnetic field 25 feet from the edge of the right-of-way would be no stronger than magnetic fields typically present in residential buildings.
- New, properly installed connecting hardware would reduce potential safety risks associated with aging hardware.
- All of the new structures installed as part of the Proposed Action would meet BPA's current standards and specifications for wood poles, which exceed the Western Wood Preservers Institute BMPs for the use of PCP-treated wood in aquatic environments. Barrier wraps would be

installed on structures within 50 feet of wetlands or streams, or within the 100-year floodplain to prevent wood preservatives from contacting soil, surface water, and ground water.

Air Quality

Impacts to air quality would be low.

- Air quality impacts from construction would be localized and temporary 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 during prolonged periods of non-use) would minimize impacts to air quality.

Greenhouse Gases

Impacts to greenhouse gases would be low.

- Construction vehicles, equipment, and helicopters could emit an estimated 2,700 metric tons of carbon dioxide during construction. This amount is far below the U.S. Environmental Protection Agency mandatory reporting threshold of 25,000 metric tons for large emission sources.
- An estimated 6 acres of trees would be removed that would have the potential to sequester approximately 8,300 metric tons of carbon dioxide if all trees reached full maturity. This estimate is conservative as most of the removed trees are not currently at full maturity and many trees would not reach maximum maturity through natural attrition or other human-related disturbances.

Floodplain and Wetland Statement of Findings

In accordance with the Department of Energy's NEPA implementing regulations and compliance with Floodplain and Wetland Environmental Review Requirements (10 CFR Part 1021 and 1022), BPA assessed the project's potential impacts to floodplains and wetlands (see Section 3.5 of the EA), considered alternatives to avoid impacts, and identified measures to mitigate adverse effects.

Upgrades to existing access roads (grading and the addition of gravel) would occur in about 5.2 acres of floodplain—this unavoidable work within the floodplain would minimally decrease flood-storage capacity due to some additional soil compaction but would not alter the course of floodwaters.

About 0.8 acre of wetlands that could not be avoided would be permanently impacted as a result of the wood pole replacements and access road work. Impacts would be minimized by using existing road systems, where possible; narrowing road widths and structure work areas in wetlands; re-routing access roads around wetlands where practicable; complying with conditions in the US Army Corps of Engineers Section 404 Authorization; and purchasing compensatory mitigation from the Coyote Prairie North Mitigation Bank and the Oregon Department of State Lands' Payment-in-Lieu Program.

Additional measures that would be taken to minimize potential impacts to floodplains and wetlands include, working in the dry season, if possible; flagging wetland boundaries; using temporary equipment mats; implementing erosion control measures; using barrier wraps, or other encapsulating methods, on wood poles placed within 50 feet of wetlands and streams and within 100-year floodplains to help prevent potential leaching of PCP; depositing and stabilizing excess soils in upland areas outside of wetlands; and restoring and replanting disturbed areas.

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

September 5, 2017

Date

Hills Creek-Lookout Point Transmission Line Rebuild Project

Mitigation Action Plan

DEPARTMENT OF ENERGY
Bonneville Power Administration
DOE/EA-1967
September 2017

Summary

This Mitigation Action Plan is part of the Finding of No Significant Impact for the Hills Creek-Lookout Point Transmission Line Rebuild Project. The project would rebuild the aging 26-mile-long 115-kilovolt (kV) Hills Creek-Lookout Point transmission line in Lane County, Oregon.

This Mitigation Action Plan is for the Proposed Action and includes all of the integral elements and commitments made in the environmental assessment (EA) to mitigate 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 mitigation action plan will be included in the construction contract specifications, which will obligate the contractor to implement the mitigation measures identified that relate to contractor responsibilities during and after construction.

If you have any general questions about the project, contact the Project Manager, Mark Korsness: toll-free telephone 800-282-3713, direct telephone 360-619-6326, or e-mail makorsness@bpa.gov.

If you have questions about the mitigation action plan, contact the BPA lead for the environmental review, Justin Moffett: toll-free telephone 800-282-3713, direct telephone 503-230-3233, or e-mail jtmoffett@bpa.gov.

If you have questions about the mitigation action plan 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 mitigation action plan may be amended if revisions are needed due to new information or if there are project adjustments.

Mitigation Measures

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

Mitigation Action Plan Table

MINIMIZATION AND MITIGATION MEASURE	IMPLEMENTATION
Land Use, Recreation and Transportation	
Provide a construction schedule to all potentially affected landowners.	Before and during construction (BPA)
Post a construction schedule at Oakridge Airport and all potentially affected recreational areas.	Before and during construction (BPA)
Coordinate the construction schedule with Forest Service recreation specialists to post alerts for construction activities that may impact users of recreational facilities.	Before and during construction (BPA)
Maintain existing access to residences and other areas during construction.	During construction (Contractor)
Coordinate with commercial timber landowners to ensure that access road enhancements, gates, and construction and maintenance activities would minimize disruptions to commercial forestry operations.	Before and during construction (BPA/Contractor)
Compensate landowners for the value of any property damaged by construction activities, as appropriate.	After construction (BPA)
Coordinate with local agencies to avoid construction activities that could conflict with their own construction activities.	Before and during construction (BPA/Contractor)
Prepare a notice about construction activities and a proposed schedule for posting on the ODOT's traffic advisory web site called Trip Check (http://www.tripcheck.com).	Before construction (BPA)
Schedule construction activities at the transmission line crossings of Highway 58 to avoid lane closures during peak travel times, as determined in coordination with ODOT.	Before and during construction (BPA/Contractor)
Use traffic safety signs and flaggers to inform motorists and manage traffic during construction activities on affected roads.	During construction (Contractor)
Install permanent gates at selected locations to minimize unauthorized use of BPA access roads and unauthorized entry to BPA right-of-way.	During construction (Contractor)
Where existing rural roadways are narrow, provide traffic control to ensure traffic safety.	During construction (Contractor)
Follow the applicable state, county, city, and railroad requirements for traffic control and lane closures.	During construction (Contractor)
Coordinate with ODOT to obtain any permits that may be required for new approaches to ODOT-managed state right-of-way, work within the state highway right-of-way, or use of oversized or over weight vehicles.	Before construction (BPA/Contractor)
Coordinate with Lane County Public Works to obtain any right-of-way permits that may be required for project activities, including hauling, within Lane County roadways and right-of-way.	Before construction (BPA/Contractor)

Mitigation Action Plan Table (continued)

MINIMIZATION AND MITIGATION MEASURE	IMPLEMENTATION
Geology and Soils	
Stabilize permanent disturbance areas by applying a weed-free gravel top layer, as certified by the Forest Service, to the roadways and trailbeds.	During construction (Contractor)
Place new structures in existing structure holes to the maximum extent practicable to reduce ground disturbance.	During construction (Contractor)
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.	During construction (Contractor)
Contact BPA geotechnical specialists if geotechnical issues, such as new landslides, arise during construction.	During construction (Contractor)
Install appropriate erosion-control devices where needed to minimize soil transport (FW-079).	Before and during construction (Contractor)
Retain vegetative buffers where possible to prevent soil from entering waterbodies.	During construction (Contractor)
Design access road enhancements using low grades, water bars, and drain dips to help control runoff and prevent erosion.	Before construction (BPA)
Properly space and size culverts on access roads.	Before and during construction (BPA/Contractor)
Use water trucks on an as-needed basis to minimize dust and reduce erosion due to wind.	During construction (Contractor)
Revegetate disturbed areas to help stabilize soils as soon as work in that area is completed and appropriate environmental conditions exist, such as moderate temperatures and adequate soil moisture.	During and after construction (Contractor)
Inspect revegetated areas to verify adequate growth and implement contingency measures as needed.	After construction (BPA/Contractor)
Inspect and maintain access roads and cross-drains to ensure proper function and nominal erosion levels after construction.	After construction (BPA)
Salvage, stockpile, and solarize (for 2 to 4 weeks with plastic to kill weeds) selected topsoil where practicable for replacement on cut/fill slopes to improve site restoration and plant establishment.	During construction (Contractor)
Install pole wraps, or other encapsulating methods, on structures located within 50 feet of wetlands or streams or within the 100-year floodplain.	During construction (Contractor)
Vegetation	
Use existing road systems, where practicable, to access structure locations.	During construction (BPA/Contractor)
Minimize the construction area (footprint) and disturbance to vegetation to the extent practicable, especially within Forest Service and Corps habitat restoration areas, wetlands, and waterbody crossings.	During construction (BPA/Contractor)
Locate materials storage and staging areas in previously disturbed areas.	During construction (Contractor)
In areas without wildlife or fire danger timing restrictions, conduct as much work as possible, including tree removal during the dry season to minimize erosion, and soil compaction.	During construction (Contractor)
Conduct tree removal in a manner that minimizes disruption to remaining trees and shrubs.	During construction (Contractor)
Cut trees and leave existing root systems intact to help prevent erosion.	During construction (Contractor)

Mitigation Action Plan Table (continued)

MINIMIZATION AND MITIGATION MEASURE	IMPLEMENTATION
Vegetation (cont'd)	
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.	During and after construction (Contractor)
Revegetate disturbed areas with landowner-approved grasses, forbs, or shrubs to ensure appropriate vegetation coverage and soil stabilization prior to rainy season (November 1).	During and after construction (Contractor)
Keep pulling/tensioning equipment inside the transmission line right-of-way, to the extent practicable.	During construction (Contractor)
Conduct post-construction site restoration monitoring with at least three field visits per year until site stabilization is achieved.	During and after construction (BPA)
Prior to construction, identify noxious weed infestation areas for avoidance (as practicable) and/or treat noxious weeds adjacent to access roads and structure sites (FW-259).	Before and during construction (BPA – identify/Contractor – avoid/treat)
Perform follow-up monitoring and treat infestation areas after construction if needed (FW-261).	During and after construction (Contractor)
Implement measures to minimize noxious weed spread—inspect vehicles before entering construction areas, install and use weed wash stations, or use other appropriate equipment cleaning measures.	During construction (Contractor)
Perform weed treatment in disturbed areas along trails as needed for up to 3 years following construction.	After construction (BPA)
Develop a native shrub and forb planting plan that would benefit native pollinators for the abandoned and new right-of-way in line mile three.	Before construction (BPA)
Streams and Fish	
Conduct in-water work in the Middle Fork Willamette River subbasin between August 1 and August 31 in Buckhead and Burnt Bridge creeks, and between July 1 and August 31 in all other streams, or during ODFW biologist-approved extensions.	During construction (Contractor)
Divert stream flow around the work area and maintain downstream flow during construction.	During construction (Contractor)
Isolate in-water work areas prior to culvert and ford installations. Dewater work area as necessary for construction and to minimize turbidity. Do not discharge turbid water to streams.	During construction (Contractor)
Conduct fish salvage according to NMFS/ODFW requirements (NMFS, 2000; ODFW, 2014).	During construction (Contractor)
Install culverts and fords in accordance with NMFS/ODFW fish passage requirements (RF-6).	During construction (Contractor)
Comply with applicable Clean Water Act permits for work in wetlands or streams (FW-088).	During construction (Contractor)
Restrict construction vehicles and equipment to access roads and designated work areas.	During construction (Contractor)
Return temporary disturbance areas for ford, culvert, and road work to pre-construction contours; mulch, seed, and plant as per plans and specifications.	During construction (Contractor)

Mitigation Action Plan Table (continued)

MINIMIZATION AND MITIGATION MEASURE	IMPLEMENTATION
Streams and Fish (cont'd)	
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.	During construction (Contractor)
Conduct soil-disturbing activities during dry conditions to the greatest extent practicable.	During construction (Contractor)
Outslope access roads (e.g., 2 to 5 percent), maintaining natural drainage patterns and minimizing interceptions and concentration of upgradient runoff when practicable (RF-5).	During construction (Contractor)
Design headwaters culverts (non-fish drainages) for the 100-year storm event to minimize future maintenance needs (RF-4).	Before construction (BPA)
Develop and implement a spill prevention and spill response plan (FW-091).	Before construction (Contractor)
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.	During construction (Contractor)
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.	Before and during construction (BPA/Contractor)
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.	During construction (Contractor)
Maintain emergency spill control materials, such as oil booms and spill response kits, on-site at each ford or culvert replacement site at all times and ready for immediate deployment.	During construction (Contractor)
Install cross-drains per BPA access road design specifications.	During construction (Contractor)
No use of fertilizers when revegetating disturbed areas.	During and after construction (Contractor)
Locate water drafting sites (locations where contractor may fill water trucks) to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows (RA-4).	During construction (Contractor)
Wetlands, Floodplains and Groundwater	
Avoid and minimize wetland impacts where possible by marking wetland boundaries, using temporary equipment mats, or only crossing wetlands during the dry season.	During construction (BPA/Contractor)
Obtain and comply with applicable Corps Clean Water Act and State of Oregon removal/fill permits for all work in wetlands or streams (FW-088).	Before and during construction (BPA – obtain permits/Contractor – comply with permits)
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 (FW-079).	During construction (Contractor)
Do not deposit excavated material in wetland areas.	During construction (Contractor)
Do not locate construction staging, equipment or materials storage, or vehicle fueling in or adjacent to wetland areas.	During construction (Contractor)

Mitigation Action Plan Table (continued)

MINIMIZATION AND MITIGATION MEASURE	IMPLEMENTATION
Wetlands, Floodplains and Groundwater (cont'd)	
Use existing roads to access structure locations. Clearly mark road sections to be decommissioned before construction.	During construction (Contractor)
Remove any temporary equipment mats and revegetate.	During construction (Contractor)
Restore all temporary disturbance areas to original contours and decompact, if necessary.	During construction (Contractor)
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 to ensure adequate cover. Use herbicides to control vegetation near wetlands in accordance with BPA's Transmission System Vegetation Management Program Final Environmental Impact Statement/Record of Decision (BPA 2000) and the Forest Service's EIS and Record of Decision for Preventing and Managing Invasive Plants (U.S. Forest Service 2005) to limit impacts to water quality.	During and after construction (Contractor)
Revegetate decommissioned road segments through wetlands.	During construction (Contractor)
Purchase 0.7 wetland mitigation bank credits at the Coyote Prairie North Mitigation Bank to replace lost wetland area, functions and values for 0.69 acres of wetlands impact in the Middle Fork Willamette River watershed that are within the service area of the bank (west of Oakridge).	Before construction (BPA)
Purchase 0.07 credits from Oregon Department of State Lands' Payment-in-Lieu Program to compensate for lost wetland area, functions and values outside to service area of any mitigation bank or fee-in-lieu program (east of Oakridge).	Before construction (BPA)
Limit the placement of fill for access road work in floodplains to the minimum required.	During construction (Contractor)
Install erosion-control measures prior to work in or near floodplains (FW-079).	During construction (Contractor)
Prepare and implement a storm water pollution prevention plan.	Before construction (Contractor)
Use pole wraps, or other encapsulating methods, on structures located within 50 feet of wetlands or streams or within the 100-year floodplain.	During construction (Contractor)
Wildlife	
Install bird diverters where the line crosses rivers, wetlands, or other high bird-use areas, and it would be technically feasible: transmission line spans 1/1-2/4, 2/4-2/7, 3/1-3/2, 4/4-5/1, 6/2-7/4, 7/4-8/1, 8/1-8/4, 9/3-10/1, 10/1-11/1, 11/1-11/7, 12/3-12/5, 12/8-12/10, 14/1-14/7, 15/10-16/5, 17/2-17/6, 18/5-19/1, 20/8-20/9, 22/3-22/4, and 23/1-23/2.	During construction (Contractor)
Trim or girdle up to 20 of the trees identified for removal on Forest Service land between line miles 9 and 16 within the right-of-way to provide habitat/structure for wildlife, particularly northern spotted owls, small mammals and amphibians (FW-128, FW-129).	During construction (Contractor)
Trim or girdle up to 35 of the trees identified for removal on Forest Service Corps land between line miles 15 and 22 within the right-of-way to provide habitat/structure for wildlife.	During construction (Contractor)
Restore areas disturbed by construction to pre-construction condition.	During construction (Contractor)
Avoid tree removal between April 1 and July 15 to minimize displacement of nesting birds (FW-133).	During construction (Contractor)

Mitigation Action Plan Table (continued)

MINIMIZATION AND MITIGATION MEASURE	IMPLEMENTATION
Wildlife (cont'd)	
Provide maps of areas to be avoided by helicopters to minimize impacts to wildlife.	Before construction (BPA)
Avoid all work within 0.25 mile of occupied northern spotted owl sites during the critical breeding period: March 1 and July 15 (FW-170, FW-173).	During construction (Contractor)
If construction coincides with emergence of western pond turtle hatchlings at a known pond turtle site, conduct pre-construction surveys by visual observation for nesting activity, including checking for evidence of nesting and hatchling emergence, in April to July of the year of construction. If nests are identified in or near the work areas, mark those areas as no work zones and relocate any hatchlings and adult turtles to suitable habitat outside the work area.	Before and during construction (Contractor)
Cultural Resources	
Locate transmission structures, equipment and material storage area, and access roads so as to avoid known cultural resource sites and limit ground disturbance.	Before and during construction (BPA/Contractor)
Provide cultural resource monitors, as necessary, to observe ground-disturbing activities in areas of previously documented cultural sites (FW-263, FW-267).	During construction (BPA/Contractor)
Develop an Inadvertent Discovery Plan that details crew member responsibilities for reporting in the event of a discovery during construction. In the event of an inadvertent discovery, stop work immediately and notify appropriate BPA personnel, land management agency (e.g., Forest Service, Corps), the Oregon SHPO, and the interested tribes.	Before and during construction (BPA to develop and implement plan, Contractor to adhere to requirements)
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.	During construction (BPA/Contractor)
Implement any additional cultural resource mitigation measures identified through the Section 106 consultation process (FW-273).	Before and during construction (BPA/Contractor)
Visual Quality	
Locate construction staging and storage areas away from locations that would be clearly visible from residences and recreation facilities.	Before and during construction (Contractor)
Use non-reflective insulators (e.g., non-ceramic insulators or porcelain) to reduce refraction and glare.	During construction (Contractor)
Focus security lighting at staging areas and the material storage yard inward to minimize spillover of light and glare.	During construction (Contractor)
Require that contractors maintain a clean construction site and remove all construction debris.	During construction (Contractor)

Mitigation Action Plan Table (continued)

MINIMIZATION AND MITIGATION MEASURE	IMPLEMENTATION
Socioeconomics and Public Health	
Maintain access to all businesses, residences, and public facilities during construction.	During construction (Contractor)
Notify local agencies, residences, and business owners of upcoming construction activities and potential disruptions associated with the Proposed Action.	Before and during construction (BPA/Contractor)
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.	Before and during construction (BPA/Contractor)
Compensate landowners at market value for any new land rights required for new, temporary, or permanent access roads on private lands and apply for applicable permits to obtain new access rights on public lands.	Before construction (BPA)
Noise, Public Health and Services	
Use sound-control devices on construction equipment with gasoline or diesel engines and limiting construction noise to daylight hours (7:00 a.m. to 5:00 p.m.) to reduce noise impacts.	During construction (Contractor)
Implement spill prevention and response plan (FW-091).	During construction (Contractor)
Air Quality	
Use water trucks or other dust control measures to control dust during construction.	During construction (Contractor)
Keep all vehicles in good operating condition to minimize exhaust emissions.	During construction (Contractor)
Turn off construction equipment during prolonged periods of non-use.	During construction (Contractor)
Drive vehicles at low speeds (less than 5 mph) on access roads to minimize dust during high dust conditions.	During construction (Contractor)
Greenhouse Gases	
Locate staging areas as close to construction sites as practicable to minimize driving distances between staging areas and construction sites.	During construction (Contractor)
Locate staging areas in previously disturbed or graveled areas to minimize soil and vegetation disturbance where practicable.	During construction (Contractor)
Encourage the use of the proper size of equipment for the job to maximize energy efficiency.	Before and during construction (BPA)
Recycle or salvage non-hazardous construction and demolition debris where practicable.	During and after construction (Contractor)
Dispose of wood poles off-site at an appropriate facility in the local area where practicable.	During and after construction (Contractor)
Use local rock sources for road construction where practicable.	During construction (Contractor)
Obtain approval to operate temporary backup diesel generators under Lane County's General Air Contaminant Discharge permit administered by Lane Regional Air Protection Agency.	Before construction (BPA)
<p>References: Bonneville Power Administration (BPA) 2000. <i>Transmission System Vegetation Management Program Final Environmental Impact Statement/Record of Decision</i></p>	