

Salem-Albany Transmission Line Rebuild Project

Finding of No Significant Impact

Bonneville Power Administration
DOE/EA-1946
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SUMMARY

Bonneville Power Administration (BPA) announces its environmental findings on the Salem-Albany Transmission Line Rebuild Project. The project would rebuild two of BPA's 115-kilovolt (kV) transmission lines that run between Salem and Albany, Oregon, through Marion, Polk, Benton, and Linn counties, Oregon. BPA needs to ensure the integrity and reliability of the Salem-Albany transmission lines. These lines serve BPA's utility customers, who in turn provide power to communities in the Willamette Valley in Oregon. No major rebuild work has been done on the lines since they were built in the 1940s. 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, or other forms of deterioration. The aging lines require replacement of wood-pole structures and other line components, as well as improvements to each 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 Preliminary 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 practicable 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/SalemAlbanyRebuild.

PROPOSED ACTION

Under the Proposed Action, BPA would replace the transmission lines and all associated components, other than fiber, for the Salem-Albany No. 1 and No. 2 lines, which extend for 24 and 28 miles, respectively. As part of the rebuild, BPA would realign the Salem-Albany No. 1 line to the center of the right-of-way and replace some of its existing wood-pole structures with steel monopoles. In addition, BPA would expand the access road system to both lines by constructing, reconstructing, and improving roads and would install, improve, or repair culverts. The project would also remove some vegetation along the transmission lines rights-of-way and access roads; establish temporary staging areas and pulling-tensioning sites; and revegetate areas disturbed by construction activities.

This FONSI is for the Proposed Action with the Access Road Option 1 for accessing the Salem-Albany No. 1 line from structures 11/6 to 12/4. Option 1 would involve constructing a 1-mile gravel access road in the BPA right-of-way adjacent to the Ankeny National Wildlife Refuge (Ankeny NWR). BPA and the Ankeny NWR also considered two other access road options that would have been located on the Ankeny NWR. Option 1 is preferred by both BPA and the Ankeny NWR.

The rebuild of both lines is needed because the lines are over 65 years old and have reached the end of their service life, being physically worn and, in places, structurally unsound. The rebuild and associated improvements would help BPA meet its obligations of ensuring the transmission system is safe, reliable, and has sufficient capability to serve its customers in this part of the Willamette Valley. The access road expansion is necessary to ensure safe and reliable access to the transmission lines, as year-round access was never adequately established when the lines were built in the 1940s. Additionally, the alignment adjustments and use of some steel monopoles on the Salem-Albany No. 1 line are needed due to safety concerns over the line's current proximity to property outside of the right-of-way and the narrow width of the existing right-of-way relative to a railroad. A few changes from two-pole to three-pole structures, shifting a few structures forward or back within the right-of-way, and removal of some structures along both lines are also needed to improve line design and safety.

Construction is expected to last for a total of about 16 months: May to December 2015 for Salem-Albany No. 2 and May to December 2016 for Salem-Albany No. 1. Details of the Proposed Action are presented in Chapter 2 of the EA.

NO ACTION ALTERNATIVE

Under the No Action Alternative, the rebuild and associated improvements of the Salem-Albany No. 1 and 2 lines and access roads would not be implemented as a single coordinated project. However, the reliability and safety concerns that prompted the need for the Proposed Action would remain. As the lines continue to deteriorate and fail intermittently, BPA's ability to provide reliable electric service to its customers in the area would be reduced. BPA would also continue to have inadequate access in the case of an emergency outage or line failure, particularly during the rainy season or inclement weather. BPA would continue to operate and maintain the existing transmission lines 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. In addition, the safety concerns dealing with the proximity of the Salem-Albany No. 1 line to adjacent properties would persist.

The No Action Alternative would likely result in more frequent and disruptive repair activities within the corridors than has been required in the past. Some repairs could be planned, but many would likely occur on an emergency basis as the lines continue to deteriorate. The risk of outages could increase, and the frequency of repair and maintenance vehicles traveling through properties along the line would increase as well, along with the associated ground disturbance in the rights-of-way and where established access roads are lacking. Impacts to natural resources, crops, residences, and other resources would occur more often as a result.

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 was evaluated and is presented in Chapter 3 of the EA. To evaluate potential impacts from the Proposed Action, 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 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, RECREATION, HABITAT CONSERVATION, AND TRANSPORTATION

Impacts to land use, recreation, habitat conservation, and transportation would either be low, low-to-moderate, or moderate; or there would be no impacts.

- Land used for residences, commerce, or industry or managed for conservation would not be removed from use. Although a total of about 45 acres of agricultural land (including row crops, unmanaged pasture, and annual and perennial grasslands) would be converted to access roads, the conversion would be primarily along the edges of fields and occur in small segments.
- Landowners would be compensated for landscaping outside of the rights-of-way that would be removed or damaged. Compensation for permissible landscaping inside the rights-of-way would be determined based upon easement documents or other applicable land use agreements.
- Disturbance (noise, dust, traffic) to residences, agricultural, commercial/industrial, recreation, and conservation activities during construction would be temporary and intermittent (periodically from about May through December in 2015 and 2016).
- Potential traffic delays from construction vehicles would be brief and localized to local streets and rural roads, and access to properties would be maintained during construction.
- BPA would coordinate with the adjacent railroads to ensure construction activities do not take place at the same time that trains are scheduled to pass through the rights-of-way.

- Remove all tree debris generated during vegetation removal from railroad rights-of-way.
- Communicate the proposed schedule of construction activities to Ankeny NWR personnel and post a notice at the Refuge, if requested by Ankeny NWR personnel, so landowners and visitors would know when they can expect to experience construction-related disruptions.
- Restrict use of the Ankeny NWR dike road for access to the right-of-way to times outside of the rainy season.

GEOLOGY AND SOILS

There would be no impacts to geology, and impacts to soils would be low.

- Mitigation measures (use of sediment barriers, reseeding disturbed areas, etc.) would minimize the risk of soil erosion during construction and would aid in soil recovery.
- Improved, reconstructed, and new gravel roads would be more stable than existing conditions and better capable of handling stormwater and reducing soil erosion and rutting.
- The majority of construction activities would occur during the dry season, which would minimize soil erosion and compaction.
- The majority of structures would be placed in the same locations as existing structures, which would minimize soil disturbance.
- Soil compaction from tree removal would be minor, temporary, and distributed along the transmission lines rights-of-way. Also, where trees are cut, stumps would be left in place.

VEGETATION

Overall impacts to vegetation would be moderate.

- The approximately 1,340 trees that would be removed would be distributed along the transmission lines (not clumped in one area) and would primarily be at the edges of existing woodlands or upland forests.
- Although 66 Oregon white oak trees (an Oregon strategy habitat species) would require removal, the adjacent Oregon white oak woodlands from which individual trees would be removed would remain intact. In addition, BPA would top or trim Oregon white oak trees wherever possible to minimize removal, a strategy that would allow 11 Oregon white oak trees originally marked for removal to remain. The 5 acres of low-growing vegetation in Oregon white oak woodlands that would be impacted by access roads or pulling-tensioning sites would be mostly within the existing managed right-of-way and would not substantially affect the woodlands. Five Oregon white oak trees have been marked for removal for access roads.
- Most of the vegetation that would be permanently impacted by structure and access road footprints is in disturbed herbaceous and shrub plant communities that typically have a high proportion of weeds, including high densities of Himalayan blackberry in much of the 10 acres of herbaceous and shrub vegetation and high densities of reed canarygrass in much of the 8 acres of riparian and wetland areas.

- Potential impacts of spreading weeds into small pockets of higher-quality plant communities in the area would be reduced through noxious weed control measures.
- The one known occurrence of an Endangered Species Act (ESA)-listed plant species (Nelson's checker-mallow [*Sidalcea nelsoniana*]) in the affected area would be avoided.
- Of the occurrences of the federal species of concern, thin leaved peavine (*Lathyrus holochlorus*), one would be impacted and one would be avoided.
- Of the occurrences of the plant species that is a state candidate for listing (meadow checker-mallow [*Sidalcea campestris*]), 13 occurrences would be avoided and 4 would be impacted.
- Mitigation measures would be implemented to revegetate disturbed areas and reduce the risk of spreading weeds into disturbed areas.

FISH AND WILDLIFE

Impacts to fish and wildlife and their habitat would be low or low-to-moderate. Additional impacts and mitigations to woodlands and other habitats are discussed under Vegetation, above.

- Most of the wildlife habitat that would be permanently lost or modified by access roads and structure footprints would be in the existing managed rights-of-way, which is already disturbed with high proportions of weeds, reducing the quality of habitat in 45 acres of agricultural habitat, 8 acres of riparian and wetland habitats, and 18 acres of herbaceous and shrub habitat.
- Migratory bird and other wildlife habitat would be affected through the removal of trees along the edge of the existing transmission lines rights-of-way, including the higher level Oregon Department of Fish and Wildlife (ODFW) habitat categories of Oregon white oak woodlands and other hardwoods. However, the tree habitat removed would be distributed along the rights-of-way (not clumped in one area), and frequently taken from the edges of adjacent woodlands.
- Wildlife habitat losses from access road construction in or adjacent to habitat conservations areas (e.g., Ankeny National Wildlife Refuge, E.E. Wilson Wildlife Area, Minto-Brown Island Park, and Sydney Landing) would primarily occur within the rights-of-way and not affect these conservation areas directly; adjacent habitats would remain intact. An access road at Bowers Rock State Park would be outside the right-of-way, but would be located on previously disturbed ground.
- Tree removal would generally take place between August 15 and March 1, outside of the bird nesting season, to reduce impacts to migratory birds.
- Wildlife disturbance associated with construction would be temporary and intermittent, and would affect wildlife already acclimated to noise and human presence associated with agricultural practices, trains, roads, and residential areas.
- Any incidental mortality to wildlife from construction activities and temporary displacement of wildlife near work areas would be low because of the short amount of time impacts would occur (construction would likely occur for approximately 1 or 2 days at a time in any given location, with some areas being revisited multiple times during the construction period), because impact areas would be small (generally confined to the rights-of-way or adjacent areas), and because more mobile wildlife species would be expected to avoid work areas during construction.

- The potential for bird collisions with transmission lines would be reduced by installing bird diverters on conductors and fiber in high bird-conductor collision risk areas (established flight corridors near wetlands and other waterbodies and along and within river and creek drainages that are likely to be frequented by large numbers of birds), including adjacent to the Refuge (SA1:10/1 to 13/5) and 49 spans in other areas. Use swan flight diverters over river crossings and on conductor and fiber at the Refuge, and bird flight diverters in other areas such as smaller streams.
- Although western pond turtles have been documented in the affected area, no nesting turtles were found. Potential impacts would primarily involve temporary disturbance of turtles during construction: aquatic habitat would not be directly affected, and access road construction or reconstruction would remove a small amount (0.07 acre) of potential poor-quality nesting habitat and 0.33 acre of overwintering habitat. Impacts to overwintering turtles would likely be avoided given the construction season.
- Construction activities could impact streaked horned lark documented in the area, but impacts would be reduced through mitigation measures identified during ESA consultation with U.S. Fish and Wildlife Service (USFWS). The Proposed Action could have beneficial impacts to streaked horned larks by constructing gravel access roads that could provide nesting habitat.
- Use of erosion control mitigation measures would minimize or eliminate the delivery of sediments from project activities into nearby streams and potential injury to aquatic wildlife from workers, equipment, or accidental spills of hazardous materials.
- Nine stream crossing locations have been identified as currently or historically providing habitat to native migratory fish, but work at these sites has been planned based on consultations with ODFW, and potential effects to fish due to work in these fish-bearing streams would be mitigated. Avoidance and mitigation measures would include routing access roads around stream crossings, use of box culverts outside of the active stream channel, use of a culvert designed for fish passage, and adherence to ODFW in-water work periods.

WATER RESOURCES

Impacts would be low-to-moderate for surface water, and low for groundwater resources.

- Mitigation measures (stormwater pollution prevention plans and use of best management practices [BMPs]) would reduce the potential for erosion and runoff during construction activities, help stabilize disturbed areas, and reduce potential water turbidity impacts.
- Indirect impacts to surface water from structure replacement would be temporary and minimal because most structures would be replaced in the same locations, resulting in a small amount of exposed soil from excavation.
- Spill Prevention and Response Plans and Procedures would be developed, and spill prevention and response equipment would be present at all construction sites.
- Potential contamination from wood pole preservative (Pentachlorophenol) would not be expected because Pentachlorophenol tends to adsorb to soils, thereby staying localized, and degrade moderately rapidly.

- Herbicide used to help minimize noxious weed invasions would be done according to appropriate applications rates and BPA's restrictions on use in proximity to water detailed in BPA's *Transmission System Vegetation Management Program Final Environmental Impact Statement and Record of Decision* (BPA 2000).
- Replacement of culverts would cause a temporary increase in turbidity and sedimentation, but would improve water resources in the long-term because the culverts would be properly sized and functional, allowing water to pass at a rate that is appropriate to the watershed's flood regime. Installation of new culverts would have similar temporary impacts but would be sized and installed so as not to impact water resources in the long term.
- The use of fords would cause a temporary reduction in water quality while vehicles move across the streams during construction.
- Improved, reconstructed, and new gravel roads would be more stable than existing conditions and better capable of handling stormwater and reducing sediment inputs into surface waters.

WETLANDS AND FLOODPLAINS

Impacts to wetlands and floodplains would be low.

- Although about 7.5 acres of wetlands would be permanently impacted, primarily due to road construction and reconstruction, impacts would be dispersed in small areas along the transmission lines rights-of-way, and the affected wetlands are already disturbed by land use practices and often high densities of invasive weeds such as reed canarygrass.
- BPA would mitigate wetland impacts by purchasing wetland mitigation bank credits under Clean Water Act Section 404 permitting by the U.S. Army Corps of Engineers (USACE) and Removal-Fill permitting with the Oregon Department of State Lands (DSL).
- The potential for sediment and erosion to affect wetlands in the project area would be reduced by a number of best management practices for construction near wetlands, including appropriate erosion control measures, placement of storage and staging areas away from wetlands, and use of geotextile fabric around work areas at stream crossings with associated wetlands.
- Temporary impacts to 12.9 acres of wetland vegetation and soils would be minimized by marking off a reduced 0.06-acre disturbance area around each structure where possible, using wetland mats to access structures in flooded or wet areas, where appropriate, constructing during the dry season where possible, and revegetating disturbed areas.
- Access roads in floodplains would be built level with existing grades so they would not restrict or change surface water flow and the proportion of each floodplain potentially cleared or compacted would be small relative to the size of the floodplain.
- Disturbed ground in floodplains would be revegetated.

VISUAL QUALITY

Impacts to visual quality would be low.

- The existing transmission lines are familiar elements of the landscape, particularly the two-pole wood structures, which would mostly be replaced in-kind.
- Portions of the affected area used by recreationists have already been altered through the construction of residences, park facilities, railroads, and agricultural resources, so that the contrast created by installing taller poles would be minimal. In addition, new reflective conductors would weather over time, reducing their visual impact.
- Although steel monopoles that replace two-pole wood structures would not blend in as well with the surrounding landscape in wooded areas, they would occupy less space, there would be no cross arm, and the conductors would be aligned vertically, resulting in simpler lines that would be less distracting to many viewers.
- Removal of danger trees would reduce the screening of the transmission line from residents, but would also open up additional views.
- Visual impacts from construction activities would be temporary and localized, and mitigation measures (reseeding disturbed areas, locating staging areas away from sensitive viewers, etc.) would reduce these impacts.

AIR QUALITY AND GREENHOUSE GASSES

Impacts to air quality and greenhouse gasses would be low.

- Air quality impacts would be localized to construction sites, would be temporary in nature, and would not result in permanent regional impacts to air quality or a change in air quality that would likely create any risk to human health.
- 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.

SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND PUBLIC SERVICES

Impacts to socioeconomics and public services would be low. There would be no impacts to environmental justice populations.

- Local population levels would minimally be affected since the workforce would be small, would likely come from the project vicinity or temporarily reside in the area, and the work would be done seasonally over a 2-year period.
- Implementation of the Proposed Action would have a small benefit to the regional economy from the provision of local jobs and income, the local procurement of materials and equipment, and spending by construction workers.
- The permanent loss of 45 acres of agricultural land for access roads—most of which (33 acres) would be annual and perennial grass fields—would mostly be along field edges and landowners would be compensated for any new road easements.
- No property would be taken out of the county tax base; potential reductions in property taxes from new easement encumbrances would have a negligible effect on county property tax revenues.

- Potential impacts to public services, such as local fire departments, could occur if an emergency happens during construction, but mitigation measures (e.g., spill prevention and response plans, etc.) would be in place to lessen these potential impacts. The Independence High School could experience construction noise, dust, presence of workers, fence removal, and traffic disruptions during structure replacements where the Salem-Albany No. 2 line crosses school property, projected to occur in 2015: BPA would work with school personnel to minimize impacts.
- Any short-term traffic delays from construction vehicles moving through an area would not disrupt the ability of emergency services personnel to respond to emergencies.

CULTURAL RESOURCES

The Proposed Action would have no-to-low impacts on known archaeological sites and historic resources.

- The five archaeological sites identified in the affected area have been previously disturbed by agricultural and other land use activities, project activities would primarily be limited to vehicles driving over the ground, and mitigation and avoidance measures would be implemented to reduce or avoid impacts.
- The change from two-pole wood structures to steel monopoles would alter the original design character of the Salem-Albany No. 1 transmission line—which is considered eligible for listing in the National Register of Historic Places—but would not alter the integrity of design or workmanship of the line.

NOISE, PUBLIC HEALTH, AND SAFETY

Noise impacts would be short-term and low to moderate, while impacts to public health and safety would be low.

- Adverse effects from construction noise on residents, businesses, and recreational areas, which are more sensitive to increased noise, would be noticeable, but temporary and localized.
- Construction would be limited to daylight hours, and other measures would help minimize noise (appropriate use of mufflers on equipment, turning off equipment when not in use, etc.).
- Implementation of the Proposed Action would improve public safety by relocating the Salem-Albany No. 1 line to the center of the right-of-way and converting to steel monopoles in areas where the line is in close proximity to a railroad or residences in North Albany.
- Potential safety impacts during construction from vehicles, heavy equipment, and the conductors would be mitigated with construction safety practices, such as safety plans and tailboard safety meetings.

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

November 25, 2014

MITIGATION ACTION PLAN

SUMMARY

This Mitigation Action Plan (MAP) is part of the Finding of No Significant Impact (FONSI) for the Salem-Albany Transmission Line Rebuild Project (Proposed Action). The Proposed Action is to rebuild two existing Bonneville Power Administration (BPA) 115-kV wood-pole transmission lines—the 24-mile long Salem-Albany No. 1 line and the 28-mile long Salem-Albany No. 2 line. BPA would also improve the access road systems for the lines and install, replace, or repair culverts. The project would also remove some vegetation along the transmission lines rights-of-way and access roads; establish temporary staging areas and pulling-tensioning sites; and revegetate areas disturbed by construction activities. The Proposed Action is located in Polk, Marion, Linn, and Benton 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.

The Bonneville Power Administration (BPA) and its contractor are responsible for implementation of mitigation measures during various phases of the Proposed Action. To ensure that the contractor will implement mitigation measures, the relevant portions of this MAP will be included in the construction contract specifications developed for the project. This will obligate the contractor to implement the mitigation measures identified in the MAP that relate to contractor responsibilities during construction and post-construction.

If you have any questions about the project, contact the Project Environmental Manager, Doug Corkran, at 503-230-7646. If you have questions about the MAP, contact Aaron Shurtliff at 503-230-5376. This MAP may be amended if revisions are needed due to new information or if there are any substantial project changes.

MITIGATION ACTION PLAN

Minimization and mitigation measures have been identified to reduce potential impacts associated with the Proposed Action, and are provided below in Table 1. Timing restrictions for project construction are provided in Table 2.

Table 1. Mitigation Action Plan

Environmental Resource	Mitigation
Land Use, Recreation, Habitat Conservation, and Transportation	<ul style="list-style-type: none"> ▪ Maintain access to residences, farms, and businesses during construction. ▪ Distribute the proposed schedule of construction activities to all potentially affected landowners and post in recreational areas along the rights-of-way. ▪ Conduct construction activities in coordination with agricultural activities to the extent practicable. ▪ To the extent possible, avoid construction at E. E. Wilson Wildlife Area during the September 1 through October 31 hunting season. ▪ Instruct equipment operators and construction crews to leave gates as they find them to avoid disturbances to livestock and to stay within the rights-of-way to minimize impacts to crops. ▪ Coordinate with landowners regarding locations of new or temporary access roads and gates, to limit potential agricultural disruptions. ▪ Compensate landowners for the value of commercial crops damaged or destroyed by construction activities as required in easement documents or other applicable land use agreements. ▪ Landowners would be compensated for landscaping outside of the rights-of-way that would be removed or damaged. Compensation for permissible landscaping inside the rights-of-way would be determined based upon easement documents or other applicable land use agreements. ▪ Employ traffic-control flaggers and post warning signs of construction activities and merging traffic, when necessary, for short interruptions of traffic. ▪ 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). ▪ Coordinate with ODOT on road construction activities and transmission line crossings of U.S. Hwy 20, State Route 22, and State Route 51. ▪ Coordinate with BNSF Railroad on removal and installation of conductors where the lines cross the railroad and structure removals and installation in the railroad right-of-way. ▪ Repair damage to roads caused by construction. ▪ Coordinate with managers at Minto-Brown Island Park, E.E. Wilson Wildlife Refuge, Sydney Landing and Bowers Rock State Park, and Ankeny National Wildlife Refuge regarding seed mixes to be used for revegetation of disturbed areas on or adjacent to these areas to support habitat conservation efforts. ▪ Remove all tree debris generated during vegetation removal from railroad rights-of-way. ▪ Communicate the proposed schedule of construction activities to Ankeny NWR personnel and post a notice at the Ankeny NWR, if requested by Ankeny NWR personnel, so landowners and visitors would know when they can expect to experience construction-related disruptions. ▪ Coordinate with Ankeny NWR on use of Refuge access roads for tree removal to avoid road damage during the rainy season.
Geology and Soils	<ul style="list-style-type: none"> ▪ Place new structures back in existing structure holes to the maximum extent practicable to reduce ground disturbance. ▪ Conduct project construction, including danger tree removal, to the extent practicable, during the dry season when soil moisture, rainfall, and runoff are low to minimize erosion and compaction. ▪ Install sediment barriers and other appropriate erosion-control devices, and retain vegetative buffers where possible, to minimize erosion. ▪ Control runoff and prevent erosion on access roads by using low grades and installing water bars, drain dips, and outlet ditches.

Table 1. Mitigation Action Plan

Environmental Resource	Mitigation
	<ul style="list-style-type: none"> ▪ Properly space and size culverts. ▪ Use water trucks on an as-needed basis to minimize dust and reduce erosion due to wind. ▪ Assist farm operators in restoring the productivity of compacted soils through tilling or scarifying in agricultural lands. ▪ Reseed disturbed areas with an appropriate seed mix as soon as work in an area is completed. ▪ After construction, inspect and maintain access roads to ensure proper function and nominal erosion levels.
Vegetation	<ul style="list-style-type: none"> ▪ Flag vegetation clearing limits in sensitive areas such as wetlands and riparian areas. ▪ Demarcate construction areas with silt fencing or other barriers in sensitive areas to prevent vehicle turnaround, material storage, or other disturbance outside designated construction areas. ▪ Cut or crush vegetation rather than blade in areas that would remain vegetated, to maximize the ability of native plants to re-sprout and maintain soil integrity. ▪ Reseed disturbed areas in coordination with the underlying landowner or with a seed mix that matches the surrounding habitat as closely as possible in order to restore preconstruction conditions. ▪ Clearly mark trees for removal and demarcate tree removal disturbance limits in oak habitat areas. ▪ Use rights-of-way or roads to access and remove danger trees to reduce impacts to the surrounding plant community. ▪ Top or trim Oregon white oak trees rather than remove where possible. Flag Oregon white oak trees that are adjacent to road work areas but do not need to be removed for protection. ▪ Conduct construction activities in coordination with agricultural activities to the extent practicable. ▪ Implement noxious weed control measures in coordination with the county weed board and landowners. ▪ Use weed-free mulch, if mulch is used for erosion control. ▪ Equip all vehicles with basic fire-fighting equipment, including extinguishers and shovels, to potentially put out small fires. ▪ Conduct a preconstruction noxious weed survey of rights-of-way and access roads; treat identified noxious weed infestations following guidance from the State of Oregon in the spring prior to construction. ▪ Coordinate with managers at Minto-Brown Island Park, E.E. Wilson Wildlife Area, Sydney Landing, Bowers Rock State Park, and Ankeny National Wildlife Refuge regarding seed mixes to be used for revegetation of disturbed areas on or adjacent to these areas to support habitat conservation efforts. ▪ Flag the one Nelson's checker-mallow population, the one population of thin-leaved peavine that can be avoided, and 13 of the populations of meadow checker-mallow that can be avoided in the affected area during construction to avoid disturbance to these special-status plants. ▪ Monitor revegetated areas until approximately 70 percent cover is established. ▪ Manage vegetation along the rights-of-way and access roads according to BPA's <i>Transmission System Vegetation Management Program Final Environmental Impact Statement and Record of Decision</i> (BPA 2000). ▪ Recontour the soil surface if needed to reestablish pre-disturbance conditions prior to reseeding. ▪ Conduct a post-construction noxious weed survey; treat new noxious weed infestations or existing infestations that have spread beyond preconstruction survey

Table 1. Mitigation Action Plan

Environmental Resource	Mitigation
	<p>areas.</p> <ul style="list-style-type: none"> ▪ Clean vehicles and other equipment that have been in weed infested areas at portable wash stations upon leaving the infested areas to prevent spreading weeds to uninfested areas during construction, as determined from the noxious weed survey. In addition, include portable wash stations to remove weed propagules at other strategic locations as needed, including Ankeny NWR.
Fish and Wildlife	<ul style="list-style-type: none"> ▪ Isolate work areas and remove and relocate fish prior to commencing in-water work activities in known streams with ESA-listed fish and critical habitat (including Bowers Slough, Calloway Creek, and tributaries to the Luckiamute River, the Willamette River, Sydney Ditch, Bashaw Creek, and Soap Creek) in accordance with National Marine Fisheries Service (NMFS) guidelines (NMFS 2011). Isolate other in-water work areas prior to culvert installations. Dewater work area as necessary for construction and to minimize turbidity. Do not discharge turbid water to streams. ▪ Design stream crossings (culverts) to comply with fish passage design requirements and recommendations from Oregon Department of Fish and Wildlife (ODFW) and U.S. Fish and Wildlife Service (USFWS). ▪ Treat water generated during construction activities prior to its discharge to prevent the release of contaminated or sediment-laden water into the streams. ▪ Adhere to NMFS and ODFW requirements for utilizing the four fords planned for the project. At all other locations, prevent equipment from fording the stream sections during construction. ▪ Implement pollution and erosion control measures prior to construction and maintain them throughout the duration of the Proposed Action. ▪ Reseed disturbed areas during the appropriate season and in coordination with the underlying land owner using a seed mix that matches the surrounding habitat as closely as possible in order to restore preconstruction conditions. ▪ Minimize removal of mature trees adjacent to streams. ▪ Remove raptor nests on structures starting in January or prior to the nesting season, and continue to remove biweekly or provide alternate nesting structures. If eggs are present in nests, do not remove nests until the young have fledged. ▪ Install bird diverters on conductors and fiber in high bird-conductor collision risk areas (established flight corridors near wetlands and other waterbodies and along and within river and creek drainages that are likely to be frequented by large numbers of birds), including adjacent to the Refuge (SA1:10/1 to 13/5) and 49 spans in other areas. Use swan flight diverters over river crossings and on conductor and fiber at the Refuge, and bird flight diverters in other areas such as smaller streams. ▪ Utilize fire prevention and control training and equipment to protect habitats. ▪ Abide by any terms and conditions or mitigation measures agreed to with NOAA Fisheries during ESA consultation for steelhead and Chinook salmon. ▪ Complete in-water construction below the ordinary high water mark (OHWM) work by the ODFW recommended work period between July 1 and October 15. ▪ Conduct fish salvage according to NMFS/ODFW requirements. ▪ Finalize and implement a mitigation strategy for associated impacts to sensitive habitats, including migratory bird habitat. The anticipated mitigation strategy is to fund the restoration of riparian forest in the Bowers Rock State Natural Area Fitchett Tract mitigation site, coordinated by the Calapooia Watershed Council. ▪ Divert stream flow around the work area and maintain downstream flow during construction. Use screens per NOAA/ODFW's Fish Screening Criteria (NMFS 2008) to keep fish from entering pumps used to divert stream flow. ▪ Schedule tree removal (and other vegetation removal as much as possible) between August 15 and March 1 to minimize impacts to migratory birds. If active nests are found, do not remove trees until the young have fledged.

Table 1. Mitigation Action Plan

Environmental Resource	Mitigation
	<ul style="list-style-type: none"> ▪ Abide by any terms and conditions or mitigation measures agreed to with USFWS during ESA consultation for streaked horned larks. ▪ Continue to coordinate construction activities with the Ankeny NWR to reduce impacts during sensitive periods for waterfowl, water birds, shorebirds, and streaked horned lark; and during raptor and migratory bird nesting periods. ▪ Coordinate with Ankeny NWR on use of Refuge access roads for tree removal to avoid road damage during the rainy season.
Water Resources	<ul style="list-style-type: none"> ▪ Monitor site restoration following ground disturbance activities; implement contingency measures if site restoration should fail and soil erosion occur. ▪ Replace culverts during the dry season when stream flow, rainfall, and runoff are low or if flows are present at fish bearing streams, temporarily divert streams around the construction site. ▪ Minimize ground disturbances near waterbodies during construction, particularly in areas prone to erosion. ▪ Retain vegetative buffers, where possible, to prevent runoff into waterbodies. ▪ Prepare and implement a Stormwater Pollution Prevention Plan. ▪ Install sediment barriers and other suitable erosion- and runoff-control devices, prior to ground-disturbing activities at construction sites to minimize offsite sediment movement. ▪ Properly space and size culverts. ▪ Stabilize approaches to streams and stream crossings with clean rock or steel plates during construction to minimize erosion and sedimentation. ▪ Prepare and implement a Spill Prevention and Response Plan and Procedures to prevent, contain, and report accidental spills. ▪ 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. ▪ Park construction vehicles or equipment at least 50 feet from any stream or wetland unless authorized by a permit or on an existing roadway. ▪ Place sorbent materials or other impervious materials underneath individual wood poles at pole storage and staging areas to contain leaching of preservative materials. ▪ Soil excavated in proximity (within approximately 12 inches) to existing wood poles may contain wood preservatives. Any potentially-contaminated excess soil, beyond the needs of backfill, would be removed, handled, transported and disposed of according to all applicable regulations. ▪ Use herbicides in accordance with BPA's <i>Transmission System Vegetation Management Program Final EIS and Record of Decision</i> (BPA 2000). ▪ Complete work below the ordinary high water mark during the ODFW recommended in-water work period between July 1 and October 15. ▪ Construct, widen, and resurface access roads during the dry season as much as possible, when stream flow, rainfall, and runoff are low.
Wetlands and Floodplains	<ul style="list-style-type: none"> ▪ Design construction activities to minimize impacts to wetlands, and obtain the appropriate permits. ▪ Implement all mitigation measures—which may include the purchase of wetland mitigation bank credits—required under Section 404 permitting through U.S. Army Corps of Engineers (USACE) and Oregon Removal-Fill permitting with Department of State Lands. ▪ Place materials storage and staging areas outside of waterways and wetlands. ▪ Park construction vehicles and equipment at least 50 feet from any wetland, unless

Table 1. Mitigation Action Plan

Environmental Resource	Mitigation
	<p>they are being used to conduct a permitted activity (e.g., road construction or structure replacement in a wetland).</p> <ul style="list-style-type: none"> ▪ Store fuel and refuel machinery at least 150 feet from wetlands and waterways, and inspect regularly for leaks. ▪ Place geotextile fabric around work areas at stream crossings with associated wetlands within 25 feet of wetlands to avoid depositing excavated material into the wetlands. ▪ Require a BPA environmental specialist to meet with contractors in the field, and visit wetlands near or within construction areas to review mitigation measures and any permit requirements. ▪ Install sediment barriers along with other suitable erosion- and runoff-control Best Management Practices (BMPs), where needed, prior to ground-disturbing activities at construction sites to minimize off-site sediment movement near wetlands and floodplains. ▪ Revegetate disturbed wetland and adjacent vegetation with appropriate species based on existing conditions following specific revegetation guidelines in any applicable permits. ▪ Deposit and stabilize all excavated material not reused in an upland area outside of wetlands and floodplains. ▪ Soil excavated in proximity to wood poles would not be used as backfill or overburden in wetland areas, and would be removed, handled, transported and disposed of according to all applicable regulations. Only clean fill would be used in wetland areas, and only in accordance with all permit conditions. ▪ In areas where danger trees are removed in wetlands, the tree would be cut above the ground, with stumps left in place, and work would not disturb the root structure in order to avoid wetland impacts. ▪ Flag wetland boundaries in the vicinity of construction areas where possible to ensure these areas are avoided during construction: do not exceed a 0.06-acre disturbance area around structures located in wetlands. ▪ Construct new access roads level with existing grades in floodplain areas to avoid restricting or changing water flow. ▪ Reduce road widths to a maximum 16 feet (12-foot-wide roadbed with 2-foot shoulders) in wetlands. ▪ Monitor revegetated areas until approximately 70 percent cover is established. Wetland sites should be monitored for 3 years to assure establishment. ▪ Locate staging areas outside of wetlands.
Visual Quality	<ul style="list-style-type: none"> ▪ Schedule construction work during daylight hours to reduce the need for nighttime illumination of work areas. ▪ Avoid storing construction equipment and supplies on residential streets or access roads directly adjacent to residential property, to the greatest extent possible. ▪ Incorporate erosion control BMPs into the construction of access roads to minimize permanent visual impacts on nearby residential viewers. ▪ Reseed disturbed, non-farmed areas once construction is complete using a seed mix appropriate to site conditions, or a seed mix agreed upon with landowners. ▪ Locate construction staging areas away from sensitive viewers as much as possible. ▪ Require the contractor to maintain clean construction sites to minimize the visual impacts of the temporary use of these areas.

Table 1. Mitigation Action Plan

Environmental Resource	Mitigation
Air Quality and Greenhouse Gasses	<ul style="list-style-type: none"> ▪ Use water trucks to control dust from construction. ▪ Keep all vehicles in good operating condition to minimize exhaust emissions. ▪ Turn off construction equipment during prolonged periods of non-use. ▪ Drive vehicles at low speeds (less than 5 mph) on unpaved access roads and the BPA rights-of-way to minimize dust. ▪ Encourage use of carpooling and shuttle vans among construction workers to minimize construction-related traffic and associated emissions. ▪ Reduce electricity usage in the construction office by using compact fluorescent bulbs and turning off computers and other electronic equipment every night. ▪ Recycle or salvage non-hazardous construction and demolition debris where practicable. ▪ Locate staging areas as close to construction sites as practicable to minimize driving distances between staging areas and construction sites. ▪ Locate staging areas in previously disturbed or graveled areas to minimize soil and vegetation disturbance where practicable. ▪ Encourage use of the proper size of equipment for the job to maximize energy efficiency. ▪ Use local rock sources for road construction where practicable.
Socioeconomics, Public Services, and Environmental Justice	<ul style="list-style-type: none"> ▪ Distribute a schedule of construction activities to all potentially affected landowners and businesses. ▪ Coordinate with local farmers and landowners to minimize potential construction-related disruptions. ▪ Coordinate with public service providers to determine exact locations of utilities and minimize service disruptions in the transmission line easements within the railroad rights-of-way. ▪ Compensate landowners for the value of commercial crops damaged or destroyed by construction activities as required in easement documents or other applicable land use agreements. ▪ Coordinate the routing and scheduling of construction traffic with Oregon State Department of Transportation (ODOT) and county roads staff. ▪ Work with school personnel at Independence High School to minimize impacts to the school during construction.
Cultural Resources	<ul style="list-style-type: none"> ▪ In the event of an inadvertent discovery, stop work immediately and notify appropriate BPA personnel, the Oregon State Historic Preservation Office (SHPO), and the interested tribes. 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 through the Section 106 consultation process. ▪ Site transmission structures and access roads to avoid known cultural resource sites and limit ground disturbance, as determined during Section 106 consultation. ▪ Provide cultural resource monitors, as necessary, to observe ground-disturbing activities in the vicinity of three previously documented cultural sites near one structure on Salem-Albany No. 1 and two structures on Salem-Albany No. 2. Provide fencing as needed to avoid disturbance. ▪ Locate staging areas outside of areas with known cultural resources.

Table 1. Mitigation Action Plan

Environmental Resource	Mitigation
<p>Noise, Public Health and Safety, and EMF</p>	<p>Noise</p> <ul style="list-style-type: none"> ▪ Locate equipment as far away as is practical from noise-sensitive areas. ▪ Require all construction equipment powered by gasoline or diesel engines to have sound-control devices (mufflers) that are at least as effective as those originally provided by the manufacturer. ▪ Require all equipment to be operated and maintained to minimize noise generation. ▪ Provide a construction schedule to all potentially affected landowners. ▪ Limit construction noise to daylight hours. ▪ Turn off construction equipment during prolonged periods of use. ▪ Post a construction schedule in affected recreational areas. <p>Public Health and Safety</p> <ul style="list-style-type: none"> ▪ Prepare and maintain a Spill Prevention and Response Plan that would detail how to manage hazardous materials such as fuel, and how to respond to emergency situations. This plan, prepared prior to the start of construction, would be kept on site at all times. ▪ Conduct crew safety meetings at the start of each workday to review potential safety issues and concerns. ▪ Conduct monthly meetings between BPA and the contractor(s) to discuss safety concerns. ▪ Secure the site at the end of each workday, as much as possible, to protect equipment and the general public. ▪ Comply with all fire safety laws, rules, and regulations of the state of Oregon and prepare a Fire Prevention and Suppression Plan to meet BPA, local authority, and land manager requirements. ▪ Construct and operate the new transmission lines to comply with the National Electric Safety Code (NESC). ▪ Notify the BPA Contracting Officer's Technical Representative 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 the site is properly cleaned up. ▪ Ground fences and other metal structures on and near the transmission line rights-of-way during construction to limit the potential for shocks. ▪ Require a flagger to be present for any work within 25 feet of a railroad. ▪ Remove felled trees and high brush in their entirety from the railroad right-of-way.

Table 2. Timing Restrictions

Salem-Albany Timing Restrictions		Timing Details												Reason for Restriction	
Location	Restricted Activity	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec		
Ankeny Wildlife Refuge (SA1)	All work from structure 11/5 to 12/4	○	○	○	○	X	X	X	X	○	○	○	○	Avoiding impacts to streaked horned lark	
	Helicopters from structure 10/6 to 13/4	○	○	○	○	X	X	X	X	○	○	○	○	Avoiding impacts to streaked horned lark	
Segment 3 (SA2: South Tap to Adair Tap)	All work	○	○	○	X	X	X	X	X	○	○	○	○	Avoiding impacts to streaked horned lark	
EE Wilson Wildlife Area (SA2: 21/9–22/12)	All work	○	○	○	○	○	○	○	○	X	X	○	○	Avoiding hunting season	
	Tree removal	○	○	X	X	X	X	X	X	X	X	○	○	Avoiding hunting season & impacts to migratory birds	
All Locations	Tree removal	○	○	X	X	X	X	X	X	○	○	○	○	Avoiding migratory birds	
All Locations	In water work	X	X	X	X	X	X	○	○	○	○	X	X	X	Avoiding impacts to fish
	X	Red cells = no work allowed													
	○	Dotted cells = work allowed													

REFERENCES

Bonneville Power Administration (BPA). 2000. *Transmission System Vegetation Management Program Final Environmental Impact Statement and Record of Decision.*

National Marine Fisheries Service (NMFS). 2008. Anadromous Salmonid Passage Facility Design. Portland, OR: NMFS, Northwest Region. Website: http://www.habitat.noaa.gov/pdf/salmon_passage_facility_design.pdf. Accessed October 30, 2014.