

Pacific Direct Current Intertie Upgrade Project

Finding of No Significant Impact

Bonneville Power Administration
DOE/EA-1937
August 2014

Summary

Bonneville Power Administration (BPA) announces its environmental findings on the Pacific Direct Current Intertie Upgrade Project. The project would upgrade equipment on BPA's 265-mile portion of the Pacific Direct Current Intertie (PDCI) transmission line from the Celilo Converter Station in The Dalles, Ore. to the Nevada-Oregon. The project crosses Wasco, Jefferson, Crook, Deschutes, and Lake counties.

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

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

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

Public Availability

The FONSI will be mailed directly to individuals who previously requested it, a notification of availability will be mailed to potentially affected parties, and the Final EA and FONSI will be posted on BPA's project Website www.bpa.gov/goto/PDCI_upgrade.

Proposed Action

Under the Proposed Action, BPA would upgrade its portion of the PDCI, which is also known as the Celilo-Sylmar ±500 kilovolt (kV) transmission line. Upgrades would include replacing hardware assemblies, insulators, dampers, and shunts on the existing lattice-steel transmission line towers; replacing about 1.8 miles of conductor; constructing four new dead-end structures within the existing transmission line alignment and right-of-way; improving about 210 miles of existing access roads; and constructing about 0.6 mile of new access road.

The work would increase the north to south transfer capability of the PDCI from 3,100 megawatts (MWs) to 3,220 MWs to correspond with the transfer capability of the southern

portion of the PDCI that runs from the Nevada-Oregon border to southern California. In addition, equipment upgrades would improve reliability by replacing aging and corroded equipment on the 50+-year old line, would bring the line into compliance with a more stringent BPA safety and reliability policy (the Longitudinal Failure Containment Policy), and would increase the ability to access the line for normal and emergency maintenance.

The proposed construction would likely begin in August 2014 and continue through November 2016. Details of the Proposed Action are presented in Chapter 2 of the EA.

No Action Alternative

Under the No Action Alternative, BPA would not perform a systematic upgrade of the transmission line and would continue to operate and maintain the existing transmission line in its current state. Construction activities associated with the Proposed Action would not occur. The No Action Alternative would not bring the line into compliance with BPA's Longitudinal Failure Containment Policy, and would not allow BPA to match the transfer capability of the southern portion of the PDCI. Due to the age and condition of the line, BPA would replace insulators and hardware on an as-needed basis through its maintenance program to prevent failure or corrosion of the line. In addition, road work would be done on an as-needed basis through the maintenance program.

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 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 of 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, with implementation of selected mitigation measures, would have no significant impacts.

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

Land Use and Recreation

Overall impacts to land use and recreation would be low.

- Most of the project work would occur on existing easements or authorizations—new easement rights would be limited to 26.2 miles for existing access roads where rights do not currently exist and 0.6 miles for new access road construction.
- Long-term changes in land use would be limited to the footprints of the four new dead-end towers, the 0.6 miles of new access road, and the increased width of various portions of existing access roads.
- Although about 127.5 acres of rangeland, 16.7 acres of agricultural land, and 0.8 acres of developed area would be permanently changed due to the facilities footprints, the impacts would be in localized areas spread over the 265-mile transmission line corridor and would not alter the land use adjacent to the impacted areas. Rangeland use within the right-of-way would

not change as cattle will still be able to roam in the transmission line right-of-way and access roads. Agricultural landowners would be compensated for the value of lost productivity.

- Although about 677.5 acres of rangeland, 54.9 acres of agriculture, and 2.2 acres of developed areas would be disturbed during construction, disturbance would be temporary and would be mitigated by revegetating disturbed areas, scheduling construction when fields are fallow if possible, compensating landowners for crop loss, and ensuring livestock gates are closed and fences are whole.
- There would be no long-term changes to recreation uses; impacts would be limited to temporary construction disturbance (noise, dust, potential traffic delays) to recreational users of areas adjacent to the existing right-of-way (Deschutes River, Crooked River National Grassland, Sid Luce Reservoir, Abert Rim, and BLM-managed land).
- Impacts to the two residences located within 100 feet of the existing transmission line would be limited to temporary construction disturbances (noise, dust, potential traffic delays).
- Traffic delays from increased construction traffic and single-lane closures would be temporary and traffic controllers would be used where appropriate.

Geology and Soils

Impacts to geology and soils would be low to moderate.

- Although sixty percent of the soils that would be disturbed, including soils at two of the proposed dead-end towers, are considered highly erodible, disturbance would be minimized with the implementation of BMPs—limiting disturbance during the critical erosion period (November to March) and avoiding operation of heavy equipment in wet areas to reduce compaction and erosion.
- Although paleontological resources could be disturbed (particularly in the Fossil Lake area), monitoring and recovery would be performed at sensitive sites during ground disturbance and boring samples would be taken at the dead-end tower near Fossil Lake to determine additional mitigation measures, as appropriate.

Upland Vegetation

In general, impacts to vegetation would be low. However, impacts to rare plants and weeds would be moderate at a site-specific level.

- No federally Endangered Species Act (ESA)-listed plant species would be impacted as none are located along the project. Rare plant populations that were identified at 24 towers and along 2.5 miles of road would be avoided through flagging to restrict vehicle or equipment movement in these areas, but individual plants could be impacted.
- Although the project would permanently remove up to 134.5 acres of vegetation for tower and road footprints and would temporarily disturb 643.7 acres during construction activities, the impacts would be in localized areas spread over the 265-mile corridor, work areas would be confined to minimize disturbance, and vegetation impacts in sensitive habitats would be mitigated by removing juniper on 100 acres of sagebrush habitat within the BLM Lakeview District.
- The potential to spread existing noxious weeds—especially in high concentrations areas between line miles 1 to 91 and 214 to 265—would be minimized with implementation of

mitigation measures vehicle wash stations and prompt revegetation of disturbed areas with native seed.

Wildlife

Impacts on wildlife would be low to moderate.

- Permanent habitat removal would be limited to small amounts within the existing transmission line right-of-way associated with the construction of the four new dead-end towers, 0.6 miles of new access road construction or along edges of existing access roads in localized areas spread over the 265-mile corridor. Habitat impacts on sensitive habitats on BLM-managed lands would be mitigated through removal of juniper on 100 acres of sagebrush habitat within the BLM Lakeview District.
- Potential degradation of wildlife habitat due to the spread of noxious weeds would be mitigated through implementation of mitigation measures—vehicle wash stations and prompt revegetation of disturbed areas with native seed.
- Construction activities would result in temporary loss of vegetation in work areas but the degradation of wildlife habitat would be temporary and not expected to have lasting effects on wildlife.
- General wildlife would be disturbed or displaced during construction activities due to increased noise and activity levels, but disturbance would be temporary and localized and wildlife would be expected to return after work is complete.
- Where the project crosses sage grouse core/PPH habitat areas, low density/PGH areas, road improvements would be limited to the existing road width and no off-road travel would be allowed March 15-June 15 during the lekking and nesting season. In addition, access road construction/maintenance activities would be restricted from February 15-May 15 until 3 hours after sunrise for road segments within 2 miles of an active lek site.
- Improvement of 114 miles of the road network on federal lands could result in an increased use of roads, especially near Prineville where the population base is higher. Even if road use doubled it is estimated that only 1-2 vehicles per day would use a given road within the Project area, with only minimal effects to greater sage-grouse.
- Potential impacts to Western burrowing owls—5 active and 28 partially active burrows within or adjacent to the project—by direct vehicle strikes, noise, or dust, would be minimized through timing restrictions (March 1 – August 31).
- Potential impacts to a possible collection of pygmy rabbit burrows near line mile 23 would be minimized by limiting speed limits on roads adjacent to the area and qualified biologists would work with BLM and ODFW to relocate colonies, if necessary.
- Disturbance to active nests of golden eagle, bald eagle and other raptors would be avoided by applying spatial and seasonal buffers to all construction activities.

Fish and Water Resources

Impacts to fish and water resources would be low to moderate

- Clearing and grading activities at the 83 existing towers and one new dead-end tower that are located within 200 feet of a stream could result in minor, short-term water quality effects;

however effects would generally be within the range of current conditions and erosion and sediment controls would be implemented to avoid or minimize potential impacts.

- Stream crossing improvements include 6 ford improvements, 2 box culvert replacements at existing fords, 1 culvert replacement, and 8 existing fords that would have roadwork above their ordinary high water mark. Impacts to the streams would be minimized by improvements occurring during low or no flow conditions and temporary sediment control devices would be used to ensure that large releases of sediment are not transported downstream.
- To minimize the potential for sediment release during the use of fords, BPA would place rock along the streambanks (at the entry and exit points for vehicles) to reduce turbidity and avoid disturbance to the native substrate of the stream channel.
- Impacts to riparian vegetation would be limited to the removal of about 0.3 acres of cottonwood trees at two fish-bearing streams (Deep Creek and Trout Creek) as part of road improvements and would not be expected to increase stream water temperatures. Riparian vegetation is herbaceous and expected to recover within 1-3 growing seasons, assisted by replanting of disturbed areas with native plant species.

Wetlands

Impacts to wetlands would be low.

- Wetland impacts would be limited to filling a total of in 0.3 acres spread over 10 jurisdictional wetlands due to road improvements.
- No tower or other work would occur in wetlands, new access roads would not be constructed within 100 feet of a wetland, wetland areas would be flagged to ensure avoidance and erosion control and spill prevention measures would be implemented to protect wetlands near to work areas.

Floodplains

Impacts on floodplains would be low to moderate.

- Construction of properly designed access roads would improve stormwater conveyance by directing the flow of surface water to vegetated areas where water could slowly infiltrate soils.
- All streams with 100-year floodplains occur in the northern half of the project, north of Highway 20. Other small creeks and seasonal draws traverse the area, but no other floodplains have been designated by FEMA.
- About 5,334 linear feet of existing access road improvements would occur within 6 floodplains. These unavoidable impacts would compact soil but would only have minor effects to floodplain capacity and would not alter the course of flood waters.

Visual Quality

Temporary and permanent visual impacts would be low.

- Construction activities would temporarily detract from existing ROW viewsheds, particularly for area residents, recreationists, and motorists. The existing transmission line corridor is a prominent feature within the visual landscape.
- The new, long term impacts on visual resources would be limited to the addition of four new dead-end towers within the existing transmission line right-of-way; the towers would be consistent with the industrial look of the existing towers, tower spacing would be such that only

one new tower would be seen from any one view point, and the towers would be treated to dull the shininess of the galvanized steel.

- Because the 0.6 mile of new access road would be in short segments connecting existing roads to existing towers at various points along the corridor, the new road would likely not be visible.
- Approximately 29 residences are located within 0.25 miles of the line or access roads, near The Dalles and Prineville. Few residents have direct views due to topography, distance and position, but in those limited areas, impacts would be localized, temporary and short-term in duration.

Air Quality

Impacts on air quality would be low.

- Vehicle emissions and dust created during construction activities would temporarily increase air pollution, but impacts would be temporary and localized to work areas, emissions and dust levels would be comparable to current levels due to agricultural activities, and impacts would be minimized by implementing dust control measures.

Socioeconomics and Public Services

Impacts on socioeconomics and, environmental justice, and public services would be low and some effects would be beneficial.

- The approximately 21 month construction period would not induce any permanent changes in the study area population or permanently affect economic activities in the area.
- Because there would be no change in land ownership, the proposed action would not affect the amount of property taxes collected.
- Although there are high minority and low-income populations within certain census tracts crossed by the transmission line, the line is existing, crosses sparsely populated areas and thus would not have an impact on any individual or population.
- Construction employment and direct and indirect expenditures would temporarily benefit the local economy and would have a minimal impact on the number of available jobs in the five-county area. During peak construction (1 month each year) up to 128 workers would work along various segments of the 265 mile corridor. During non-peak periods (4-5 months each year), as many as 48 workers would be employed.

Cultural Resources

Impacts on cultural resources would be low to moderate.

- Construction and maintenance activities could result in some impacts on known and unknown cultural resources; those potential impacts would be low to moderate depending on the level and amount of disturbance and type of site.
- The PDCI transmission line is eligible for listing in the National Register of Historic Places (NRHP). However, because equipment would be replaced in kind with no loss of functionality or integrity, there would be no effect on historic properties.

Noise, Public Health, and Safety

Noise impacts from construction and maintenance work would be low to moderate.

- The majority of the project is located far from population centers and borders mostly undeveloped land. Noise impacts to sensitive receptors would be limited to a few residential areas (concentrated on the northwest side of Prineville) but would be limited in duration in any given location.
- Corona noise levels of the operation of the upgraded transmission line would increase by 2 dBA over existing conditions, but would continue to be compliant with noise regulations and would be under the minimum change in outdoor sound that can be generally be perceived by a person with normal hearing—typically 3 dBA.
- Health and safety risks associated with construction include increased risk of electrical shock or fires from high-voltage equipment and increased risk of fires and injury from the use of heavy equipment and hazardous materials near high-voltage lines. Standard construction safety procedures would be required to minimize safety risks.
- Although a small increase in electric fields is predicted within the ROW, this increase is small (12%) and would be below the range of perceptibility.
- A slight decrease in magnetic field levels (from 145 mG to 143 mG) is projected both within and outside of the ROW.

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

August 1, 2014
Date

**Mitigation Action Plan
for the
Pacific Direct Current Intertie Upgrade Project
DOE/EA-1937**

SUMMARY

This Mitigation Action Plan (MAP) is part of the Finding of No Significant Impact (FONSI) for the Pacific Direct Current Intertie Upgrade (PDCI) Project. The Bonneville Power Administration (BPA) has proposed to upgrade equipment on the Celilo-Sylmar 500-kilovolt transmission line from the Celilo Converter Station in The Dalles, Ore. to the Nevada-Oregon border (265 miles), where BPA's ownership of the 846-mile line terminates. The project crosses Wasco, Jefferson, Crook, Deschutes, and Lake counties.

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 implementing the mitigation measures during various phases of project construction. Relevant portions of this MAP will be included in the construction contract specifications. This will obligate the contractor to implement the mitigation measures identified in the MAP that relate to contractor responsibilities during construction and post-construction

If you have general questions about the project, contact the Project Manager, Erich Orth, at 360-619-6559 or etorth@bpa.gov

If you have questions about the MAP, contact the BPA lead for the environmental review, Carolyn Sharp: 503-230-7692, or e-mail casharp@bpa.gov.

If you have questions about the MAP during implementation, contact the BPA environmental lead for project implementation, John Howington: toll-free telephone 800-282-3713, direct telephone 503-230-7603, or e-mail jwhowington@bpa.gov.

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

Mitigation Measures

Mitigation measures that have been identified to avoid or reduce potential impacts associated with the Proposed Action are provided below.

Table 1: Mitigation Action Plan

Environmental Resource	Mitigation Measures	Timing of Implementation
Land Use and Recreation	Develop and distribute a schedule of construction activities to potentially affected landowners.	Before Construction
	Schedule construction during periods when active farms along the corridor are likely to be fallow, where and when possible, to minimize the potential for crop damage.	Before Construction
	Ensure gates are closed if livestock are in the area during construction. Repair/reconstruct any fences that are impacted during construction activities.	Before/During/ After Construction
	Compensate landowners for the value of commercial crops damaged or destroyed by construction activities or that cannot be planted due to construction activities.	After Construction
	Revegetate disturbed areas after the conclusion of construction, with the exception of those areas required to remain clear of vegetation to ensure the safety of the transmission line and access to the towers.	After Construction
	Keep construction activities and equipment clear of residential driveways, to the extent possible.	During Construction
	Use water trucks or other measures to minimize fugitive dust during project construction.	During Construction
	Coordinate the routing and scheduling of construction traffic with ODOT and county road staff, as appropriate.	Before/During Construction
	Publicize road closures and traffic delays to minimize impacts to traffic.	Before/During Construction
	Employ traffic control flaggers and post signs along roads warning of construction activity and merging traffic for temporary interruptions of traffic, where needed.	During Construction
Provide appropriate contact information for contractor liaisons and BPA staff to local residents for any concerns or complaints during construction.	During Construction	
Geology and Soils	Space and size culverts, cross-drains, and water bars properly.	Before/During Construction
	Work as much as possible during the dry season – when streamflow, rainfall, and runoff are low – to minimize erosion, sedimentation, and soil compaction.	During Construction
	Use mechanical barriers to erosion in disturbed areas, as specified in the stormwater pollution prevention plan (SWPPP).	During Construction
	Use appropriate BMPs, such as water trucks to apply water, in order to	During Construction

Geology and Soils <i>(continued)</i>	reduce wind erosion near sensitive receptors.	
	Minimize the work areas for heavy equipment to minimize soil compaction, particularly during the critical erosion period (November through March).	During Construction
	Reseed disturbed, non-farmed areas with native species. Minimize damage to sagebrush by crushing the plants, rather than mowing or clearing, and avoiding excavation to accommodate regrowth of the slow-growing native plant, when possible.	During/After Construction
	After construction, inspect and maintain access roads, culverts, and other facilities to ensure proper function and nominal erosion levels.	After Construction
	Inspect revegetation sites to verify adequate growth, and implement contingency measures as needed.	After Construction
	Monitor all identified paleontological resource areas during construction for exposed fossils.	During Construction
	Perform predisturbance data recovery to identify and collect visible fossils at identified paleontological resource sites identified within Fossil Lake and south of Fossil Lake. Also perform anthill collection of microfossils in adjacent areas.	Before Construction
	After pre-disturbance specimen recovery on access roads and landings in portions of the Fossil Lake area, use a layer of dune sand overlain by geotextile road mats to protect the resource.	Before Construction
	Take boring samples prior to excavating for the tower footings in the Fossil Lake area to provide more information on fossil layer depths and to develop monitoring and digging techniques for the tower construction.	Before Construction
	Monitor for paleontological resources during tower construction at the southern-most new dead-end.	During Construction
	Install two new gates and fencing on BPA access roads in the Fossil Lake area to protect paleontological resources.	After Construction
General Vegetation	Only improve existing 15-foot roadbed in areas defined as environmentally sensitive (i.e. ODFW greater-sage grouse low and core density habitat, winter range for deer and elk, and rare plant populations).	During Construction
	Disturbed areas ready for restoration: <ul style="list-style-type: none"> ▪ Perform seeding during the appropriate time period for germination, with a native seed mix, a seed mix recommended by BLM, USFS, or ODFW, or as agreed upon with landowners for use on their property. ▪ Perform additional noxious weed treatments until restored areas are relatively weed free. ▪ Monitor seed germination of seeded areas with at least 3 field visits per year until site stabilization (defined as at least 70 percent cover by native or acceptable nonnative species) is achieved; if vegetative cover is inadequate, implement contingency measures and reseed areas as appropriate to ensure adequate revegetation of disturbed soils. 	After Construction
	De-compact the soil in disturbed areas, if necessary.	After Construction

Rare Plants	Perform a preconstruction survey and report of the right-of-way and road impact locations on federal land for special status species populations prior to construction. Use data collected in GIS to locate and mark populations in the field for avoidance.	Before Construction
	Relocate special status species populations, where feasible. Where relocation isn't feasible, install protective fencing around identified special status species populations before initiating construction activities in that area.	Before Construction
	Place "Sensitive area" signage on or near fencing around any identified sensitive species populations to indicate that construction activities are prohibited within 25 feet of sign, or a distance determined by agencies.	Before Construction
	Remove encroaching woody vegetation species and noxious weeds in any special status species sensitive areas using a variety of manual weed control methods; spread any vegetation removed within the vicinity of special status species sensitive areas, including wood chips, sawdust, branches, and woody debris, outside of the 25-foot buffer surrounding special status species populations.	During Construction
	Control weeds near rare plant populations by hand methods rather than herbicides to avoid impacts to rare plants.	During Construction
	Explain special status species avoidance and minimization measures to construction contractors and inspectors during a preconstruction meeting covering environmental requirements.	Before Construction
	Provide contractors with preconstruction training on the identification of rare plant species that occur in the project area. Label known special status species populations as sensitive areas in construction documents and maps used by construction contractors, including a 25-foot buffer around populations.	Before Construction
Invasive and Noxious Weed Control	Incorporate a strategy of integrated weed management into construction layout, design, and project alternatives evaluation.	Before Construction
	Install stormwater Best Management Practices to prevent erosion and the potential transport of weedy material onto or off of the jobsite.	Before/During Construction
	A Weed Management Plan will be developed for the project based on the preconstruction Undesirable Plant Survey Report and will include baseline information on known weed occurrences gathered through agency coordination and 2013 field surveys; include specific actions in the management plan to minimize spread and control infestations, including construction BMPs, control actions (chemical, cultural, biological, and physical methods) both pre- and post-construction, and actions to be taken to monitor the spread of weeds into the project vicinity for at least 3 years after project implementation.	Before Construction
	Identify existing noxious weeds along access roads and control them before construction equipment moves into relatively weed-free areas. Flag all weed populations to be avoided during construction activities.	Before/During Construction

Invasive and Noxious Weed Control (continued)		
	Provide contractors with preconstruction training on the identification of noxious weed species that occur in the project area and explain required actions to prevent their spread. Label known noxious weed populations in construction documents and maps used by construction contractors, including a 25-foot buffer around populations.	Before Construction
	Control weeds prior to construction, as possible, with a focus on species with small contained infestations. This can reduce the potential for widespread establishment and the need for long-term management.	Before Construction
	Build vehicle and equipment washing stations at each staging yard where vehicles and equipment in use will be washed daily prior to entering and leave the project area.	During Construction
	Remove seeds, roots, and rhizomes from clearing and reclamation equipment used to move vegetation and topsoil before the equipment is moved off-site using water or compressed air and hand tools. Record cleaning sites using global positioning equipment. This information would be reported to the local contact person or agency.	During Construction
	Stockpile cleared vegetation and salvaged topsoil in areas where noxious weed infestations have been identified or are noted in the field. Store cleared vegetation adjacent to the area from which it is stripped to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes. Treat these stockpiled materials as contaminated and allow no construction equipment to work in or on them. The contractor returns topsoil and cleared vegetation from infestation sites to the areas from which they were stripped.	During Construction
	Obtain all erosion control, sediment barrier installations, or mulch distribution from state-cleared sources that are free of primary noxious weeds.	During Construction
	Obtain road fill materials from weed-free quarries.	During Construction
	Restrict construction activities to the minimal area needed to work effectively to limit disturbance of native plant communities and prevent unnecessary spread of weed species.	During Construction
	Immediately target the area for control of known or potential invasive species on the site if vegetation has been removed from the surface or soil has been disturbed. Reestablish vegetation on all bare ground (including areas denuded by fire) to minimize weed spread. Revegetate using plant materials that have a high likelihood of survival.	During/After Construction
	Monitor all seeded sites for 3 years for weed infestation. Treat all weeds adjacent to newly seeded areas prior to planting and treat planted areas for weeds in the first growing season.	After Construction
	Conduct any weed control in riparian areas using approved methods and procedures that prevent the introduction of toxic herbicides into aquatic areas.	During Construction
If herbicides are used in riparian zones, follow HIP-III project design conditions as defined by consultation with NMFS.	During Construction	

Wildlife – General	Prepare a stormwater pollution prevention plan, addressing measures to reduce erosion and runoff and stabilize disturbed areas.	Before Construction
	Prohibit construction vehicles or equipment within 50 feet of any stream or wetland unless authorized by a permit or on an existing road.	During Construction
	Develop a spill prevention control and countermeasure plan to minimize the potential for spills of hazardous materials.	Before Construction
	Make spill prevention materials and equipment available onsite.	During Construction
	Maintain vehicles and equipment in good working order to prevent oil and fuel leaks.	During Construction
	Provide funding for the improvement or restoration of 100 acres of priority sagebrush habitat for the benefit of sage grouse, big game and other sagebrush obligates.	Before Construction
Wildlife - Greater Sage- Grouse	Limit motorized travel to designated roads and primitive roads, at a minimum.	During Construction
	From February 15 to May 15 restrict road maintenance (rocking) activity until 3 hours after sunrise for road segments within 2 miles of an active lek site.	During Construction
	From March 15 to June 15, restrict off-road travel in areas where sage grouse are likely to nest (sagebrush taller than 30 cm within 5 miles of an active lek).	During Construction
	Limit road improvements to the existing road width of 15 feet in ODFW core and low density habitat and BLM PPH and PGH areas.	During Construction
Wildlife - Migratory Birds and Bald and Golden Eagle	Where construction is required during the nesting season, survey the area of impact for nests prior to construction.	Before Construction
	If active migratory bird nests are encountered during the surveys, avoid land-disturbing construction activities while the birds are allowed to fledge. An appropriate species avoidance buffer, as determined in conjunction with BLM and local agencies, will apply to all active nests for migratory bird species.	Before Construction
	Minimize disturbance during preconstruction activities, such as land and road surveys, by remaining at least 0.5 mile from all active nests when possible.	Before Construction
	During construction, utilize spatial and seasonal buffers around active raptor nests.	During Construction
Wildlife - Western Burrowing Owl	Avoid clearing, grading, and construction activities within 0.25 mile of identified burrows between March 1 and August 31.	During Construction
	Implement reduced speed limits on roads adjacent to identified active burrowing owl nests between March 1 and August 31.	During Construction
	If necessary, qualified biologists would work with BLM and ODFW to relocate owls during the nonbreeding season. Following relocation, inactive owl nests would be excavated and refilled to prevent reoccupation.	Before Construction

Wildlife - Pygmy Rabbit	Stack vegetation slash piles at the perimeter of the right-of-way to provide alternate habitat, whenever possible to benefit other wildlife of the region.	During Construction
	Implement reduced speed limits on roads adjacent to delineated pygmy rabbit colonies near line mile 23.	During Construction
	If necessary, qualified biologists would work with BLM and ODFW to relocate rabbit colonies, using catch and release methods. Following relocation, unoccupied colonies would be mowed to prevent repopulations during project construction.	Before Construction
Fish and Water Resources	Design and construct access roads to minimize drainage from the road surface directly into streams.	Before Construction
	Size and space cross drains and water bars properly to accommodate flows and direct sediment laden waters into vegetated areas, in accordance with the WSDOT's Eastern Washington Stormwater Manual.	Before Construction
	Retain vegetative buffers, where possible, to prevent sedimentation into waterbodies.	During Construction
	Minimize temporary disturbance of riparian vegetation; if required, cut vegetation at ground level and leave roots intact.	During Construction
	Limit ground disturbance to the minimum necessary when working in or near waterbodies and install stakes or flagging to restrict vehicles and equipment to designated routes and areas.	During Construction
	Prohibit side-casting of road grading materials along roads within 300 feet of perennial streams.	During Construction
	Review water quality mitigation measures, required BMPs, and permit requirements with construction contractors and inspectors during a preconstruction meeting covering environmental requirements.	Before Construction
	Conduct peak construction activities during the dry season as much as possible, to minimize erosion, sedimentation, and soil compaction.	During Construction
	Prepare a stormwater pollution prevention plan, addressing measures to reduce erosion and runoff and stabilize disturbed areas.	Before Construction
	Delineate construction limits within 200 feet of waterbodies, as specified in the stormwater pollution prevention plan, with a sediment fence, straw wattles, or a similarly approved methods to eliminate sediment discharge into waterways and wetlands, minimize the size of construction disturbance areas, and minimize removal of vegetation, to the greatest extent possible.	Before Construction
	Install sediment barriers and other suitable erosion- and runoff-control devices, where needed, prior to ground-disturbing activities at construction sites to minimize offsite sediment movement.	Before Construction
	Inspect erosion and sediment controls weekly, maintain them as needed to ensure their continued effectiveness, and remove them from the site when vegetation is re-established and the site has been stabilized.	During/After Construction

Fish and Water Resources (continued)	Implement a Spill Prevention and Treatment Plan that requires storage of fuel and other potential pollutants in a secure location away from waterbodies, and that ensures that spill containment and cleanup materials are readily available on site and restocked within 24 hours if used, and that in the event of a spill, contractors are trained to 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
	Maintain vehicles and equipment in good working order to prevent oil and fuel leaks.	During Construction
	Restrict refueling and servicing operations to locations where any spilled material cannot enter natural or human-made drainage conveyances (e.g., ditches, catch basins, ponds, wetlands, streams, and pipes) and use pumps, funnels, absorbent pads, and drip pans when fueling or servicing vehicles.	During Construction
	Operate construction vehicles or equipment at least 50 feet from any stream, unless on an existing road.	During Construction
	Store, fuel, and maintain vehicles and equipment in designated vehicle staging areas located a minimum of 150 feet away from any stream.	During Construction
	Power wash all vehicles and equipment at an approved cleaning facility prior to entering construction work areas to remove any residual sediment, petroleum, or other contaminants; prohibit discharge of vehicle wash water into any stream without pretreatment to meet state water quality standards; inspect equipment and tanks on a weekly basis for drips or leaks and promptly make necessary repairs.	During Construction
	Check all equipment used for in-water work for leaks, and, prior to entering waterways, completely clean off any external petroleum products, hydraulic fluid, coolants, and other pollutants.	During Construction
	If herbicides are used, follow the HIP-III project design conditions (NMFS 2013).	During Construction
	Divert surface water to meet construction needs only if developed sources are unavailable or inadequate. Do not exceed 10 percent of available flow, ensure all pumps have fish screens to avoid juvenile fish entrainment, and operate pumps in accordance with current NMFS fish screen criteria.	During Construction
	Divert surface water to meet construction needs only if developed sources are unavailable or inadequate. Do not exceed 10 percent of available flow and ensure all pumps have fish screens to avoid juvenile fish entrainment, and operate pumps in accordance with current NMFS fish screen criteria.	Before/During Construction
	Inspect and maintain access roads, culverts, and other facilities after construction to ensure proper function and nominal erosion levels.	After Construction
	Cover approaches to streams and crossings of streams in clean cobble rock to minimize erosion and sedimentation from BPA and landowner use, where appropriate.	During Construction
Avoid the use of fords wherever an alternative route or method is available to minimize impacts on federally-listed fish.	During Construction	

Fish and Water Resources <i>(continued)</i>	Conduct salmon redd monitoring prior to in-water work (including the use of fords) in streams that support steelhead if to be used between May 1 and July 1. Each construction season, have a qualified biologist survey and identify redd locations weekly starting two weeks before crossing streams that support steelhead. If steelhead redds are discovered in or near a ford crossing, avoid that crossing until July 1.	Before Construction
	Conduct all culvert replacement work in dry conditions, either when there is no flow or by diverting flow from the stream culvert location during replacement, as necessary. Implement work area isolation and fish salvage according to NMFS (2013) if bridge construction work area is not dry at the time of construction.	During Construction
	Do not use dust-abatement additives or stabilization chemicals (typically magnesium chloride, calcium chloride salts or ligninsulfonate) within 25 feet of water or stream channels and apply so to minimize the likelihood they will enter the stream.	Before Construction
	Do not use petroleum-based products for dust abatement.	During Construction
	Identify and implement floodplain mitigation opportunities such as riparian plantings that could benefit steelhead.	After Construction
	Use rock sizes recommended by US Fish and Wildlife Service for ford improvements in the Warner Basin.	During Construction
Wetlands	Locate roads and construction areas to avoid wetlands, whenever possible.	Before Construction
	Design construction activities within wetlands to minimize unavoidable impacts, and coordinate with the Corps and DSL for appropriate permits, if required.	Before Construction
	Flag or stake wetland boundaries in the vicinity of construction areas and avoid these areas during construction.	Before Construction
	Operate construction vehicles or equipment at least 50 feet from any wetland, unless authorized by a permit or on an existing road.	During Construction
	Limit disturbance to the minimum necessary when working in wetlands or their buffers.	During Construction
	Place geotextile fabric around the work area when working on structures within 25 feet of wetlands to avoid depositing excavated material into the wetlands.	During Construction
	Remove and stabilize excavated materials to an upland area.	During Construction
	Store fuel, refuel machinery, and stage construction vehicles or equipment at least 200 feet from wetlands and waterways and inspect regularly for leaks.	During Construction
	Require an environmental specialist to meet with contractors and inspectors in the field and visit wetlands near or within construction areas to go over mitigation measures and any permit requirements.	Before Construction
Install sediment barriers and other suitable erosion- and runoff-control devices, where needed, prior to ground-disturbing activities at construction sites to minimize offsite sediment movement near wetlands.	Before Construction	

Wetlands (continued)	Vegetate disturbed wetland and adjacent upland areas with appropriate native plant species and follow specific revegetation guidelines in permits.	After Construction
	Construct permanent access roads with adequate cross culverts or other methods to maintain the existing hydrologic regime.	During Construction
Floodplains	Minimize erosion, sedimentation, and soil compaction by conducting as much work as possible during the dry season when streamflow, rainfall, and runoff are low.	During Construction
	Restrict tensioning sites to areas outside floodplains, where possible. Locate all staging areas at least 200 feet from FEMA-designated floodplains.	During Construction
	Inspect and maintain access roads, culverts, and other facilities after construction to ensure proper function and nominal erosion levels.	After Construction
	Mitigate for floodplain impacts to 1.3 acres of Bakeoven Creek watershed through riparian plantings, removal of fill or riparian fencing as determined in consultation with NMFS.	After Construction
Visual Quality	Provide a schedule of construction activities to the owners/managers of potentially affected recreational facilities to allow the owners to advise visitors and appropriately schedule any events that could be disturbed by construction activities.	Before Construction
	Schedule all construction work during daylight hours to avoid use of nighttime illumination of work areas near residences or recreation areas.	During Construction
	Develop and distribute a schedule of construction activities to potentially affected landowners along the transmission line corridor.	Before Construction
	Keep construction activities and equipment clear of residential driveways, to the greatest extent possible.	During Construction
	Locate construction staging areas away from sensitive viewers (e.g., residences) as much as possible.	During Construction
	Require contractors to maintain clean construction sites.	During Construction
	Incorporate BMPs for the control of erosion and dust associated with construction of access roads to minimize permanent visual impacts on nearby residential viewers.	During Construction
	Revegetate temporarily disturbed areas after the conclusion of construction.	After Construction
Air Quality	Use water trucks to control dust during construction, as needed.	During Construction
	Set a speed limit for construction vehicles on unpaved access roads of no greater than 15 miles per hour to minimize dust.	During Construction
	Ensure that all vehicle engines are maintained in good operating condition to minimize exhaust emissions.	During Construction
Socioeconomics and Public Services	Employ a lands liaison to provide information, answer questions, and address concerns during project construction.	During Construction
	Develop and distribute a schedule of construction activities to potentially affected landowners along the transmission line corridor.	Before Construction

Socioeconomics and Public Services <i>(continued)</i>	Schedule construction during periods when active farms along the corridor are likely to be fallow, where possible, to minimize the potential for crop damage.	During Construction
	Compensate landowners for the value of commercial crops damaged or destroyed by construction activities.	After Construction
	Revegetate disturbed areas after the conclusion of construction.	After Construction
Cultural Resources	Restrict work areas, such as through the installation of exclusion fencing and matting, to avoid disturbance to archaeological and cultural resource sites.	During Construction
	Employ tribal monitors during all ground-disturbing activities with the potential to affect cultural resources.	During Construction
	Implement BPA's Inadvertent Discovery Procedure for projects. Should ground-disturbing activities reveal any unknown cultural materials (e.g., structural remains, Euro-American artifacts, or Native American artifacts), all activities in the vicinity of the find would cease. The BPA archaeologist, the Oregon State archaeologist, any affected federal landowners and affected tribes would be notified immediately.	During Construction
	The Inadvertent Discovery Procedure would also require crews to cease construction immediately within 200 feet of any human remains, suspected human remains, or any items suspected to be related to a human burial (i.e., funerary items, sacred objects, or objects of cultural patrimony) encountered during project construction. The area around the discovery will be secured and the BPA archaeologist, the State Historic Preservation Officer, affected federal landowners, and the affected tribes would be contacted immediately.	During Construction
	Minimize construction footprints in areas containing identified ethnobotanical species of concern, where practical.	Before/During Construction
	Minimize workspace footprints within any identified TCP boundaries, as much as practical.	Before/During Construction
	Revegetate TCP disturbance areas with native seed and vegetation species, as developed through consultation with interested tribes.	After Construction
Noise	Schedule all construction work during daylight hours near residences or recreation areas.	During Construction
	Locate construction equipment as far away from residential uses as possible.	During Construction
	Require sound control devices on all construction equipment powered by gasoline or diesel engines that are at least as effective as those originally provided by the manufacturer.	During Construction
	Operate and maintain all construction equipment to minimize noise generation.	During Construction
Public Health and Safety	Design, construct, and operate the upgraded transmission line to meet the NESC.	Before/During/After Construction
	Employ a lands liaison, who would be available to provide information, answer questions, and address concerns during project construction.	During Construction

Public Health and Safety <i>(continued)</i>	Prepare a Safety Plan in compliance with state requirements before starting construction.	Before Construction
	Specify how to manage hazardous materials, such as fuel and any toxic materials found in work sites; include a Fire Prevention and Suppression Plan, and detail how to respond to emergency situations; keep the Safety Plan on site during construction and maintain and update, as needed.	Before/During Construction
	Require the construction contractor to hold safety meetings with workers at the start of each work week to review potential safety issues and concerns.	During Construction
	Require monthly meetings, attended by the construction contractor and BPA staff, to discuss safety issues.	During Construction
	Employ traffic control flaggers and post signs along roads warning of construction activity and merging traffic for temporary interruptions of traffic, where needed.	During Construction
	Secure the work area at the end of each workday, as much as possible, to protect the general public and to safeguard equipment.	During Construction
	Install temporary guard structures (wood-pole towers) over local utility lines and county roads, where needed, to ensure continued service and safe passage in locations where conductor is replaced, or, if guard structures are not used along some county roadways, employ flaggers to ensure safe passage.	During Construction
	Ground fences and other metal structures on and near the right-of-way during construction to limit the potential for nuisance shocks.	During Construction
Climate Change	Encourage carpooling and the use of shuttle vans among construction workers to minimize construction-related traffic and associated emissions.	During Construction
	Locate staging areas as close to construction sites as practicable to minimize driving distances between staging areas and construction sites.	Before Construction
	Locate staging areas in previously disturbed or graveled areas to minimize soil and vegetation disturbance where practicable.	Before Construction
	Encourage the use of the proper size of equipment for the job to maximize energy efficiency.	During Construction
	Ensure that all vehicle and equipment engines are maintained in good operating condition to minimize exhaust emissions.	During Construction
	Turn off equipment engines when not in use to minimize exhaust emissions.	During Construction
	Use alternative fuels for generators at construction sites, such as propane or solar, or use electrical power where practicable.	During Construction
	Recycle or salvage non-hazardous construction and demolition debris where practicable.	During/After Construction
	Use local rock sources for road construction where practicable.	During Construction
	Revegetate disturbed areas after the conclusion of construction, with the exception of those areas required to remain clear of vegetation to ensure the safety of the transmission line and access to the towers.	After Construction

Table 2: Seasonal Timing Restrictions

Category of Restriction	Work Description	Timing Description
Soil compaction/erosion	Minimize work areas for heavy equipment	November - March
Roadwork in Fifteenmile Creek Watershed	Mile 3-9	Approved ODFW in-water work window July 15 -October 31
Roadwork in Deschutes River Watershed	Mile 24-90	Approved ODFW in-water work window July 1 -October 31
Roadwork in Warner Lakes Watershed	Mile 230-262	Approved ODFW in-water work window July 15 -October 31
Western burrowing owl	Avoid clearing, grading, and construction activities within 0.25 mile of identified burrows	March 1 and August 31
Western burrowing owl	Implement reduced speed limits on roads adjacent to identified active burrowing owl nests	March 1 and August 31
Greater sage-grouse	Restrict road maintenance (rocking) activity until 3 hours after sunrise for road segments within 2 miles of an active lek site	From February 15 to May 15
	Restrict off-road travel in areas with sagebrush taller than 30 cm and within 5 miles of an active lek	From March 15 to June 15
In water work on steelhead bearing streams	Conduct salmon redd monitoring prior to in-water work (including the use of fords) in streams that support steelhead. Each construction season have a qualified biologist survey and identify redd locations weekly starting two weeks before crossing streams that support steelhead	May 1 and July 1. If steelhead redds are discovered in or near a ford crossing, avoid that crossing until July 1

Table 3: Raptor Nest Spatial Buffers

Species	Spatial Buffer (miles)	Seasonal Buffer
Bald eagle	0.25 mile non-line of sight, 0.5 mile line of sight, 1.0 mile blasting	Jan. 1 – Aug. 31
Golden eagle	0.5	Jan. 1 - Aug. 31
Northern harrier	0.25	April 1 - Aug. 15
Ferruginous hawk	0.5	March 1 - Aug. 1
Red-tailed hawk	0.33	March 15 - Aug. 15
Sharp-shinned hawk	0.25	March 15 - Aug. 31
Swainson’s hawk	0.25	March 15 - Aug. 31
Turkey vulture	0.5	May 1 - Aug. 15
Peregrine falcon	1.00	Feb. 1 - Aug. 31
Prairie falcon	0.5	April 1 - Aug. 31
American kestrel	0.125	April 1 – Aug. 15
Osprey	0.5	April 1 – Aug. 31
Great horned owl	0.125	Dec. 1 – Sept. 31