

# Grand Coulee-Creston Transmission Line Rebuild Project Finding of No Significant Impact (FONSI)

Bonneville Power Administration  
DOE/EA-1950  
May 2014

## SUMMARY

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Bonneville Power Administration (BPA) announces its environmental findings on the Grand Coulee-Creston Transmission Line Rebuild Project. The project would rebuild nearly 28 miles of the Grand Coulee-Creston No. 1 115-kilovolt (kV) transmission line between the cities of Grand Coulee in Grant County and Creston in Lincoln County, Washington.

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.

Prior to issuing this FONSI, BPA prepared a Mitigation Action Plan (MAP) that lists all of the mitigation measures that BPA and its contractors are committed to implementing. That MAP is attached. 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 the MAP where there is no practical alternative.

## PUBLIC AVAILABILITY

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This FONSI and attached MAP will be mailed directly to individuals who previously requested a copy. A notification of availability will be mailed to other potentially affected parties. The Final EA, FONSI, and MAP will be posted on the project website:

[www.bpa.gov/goto/CouleeCrestonRebuild](http://www.bpa.gov/goto/CouleeCrestonRebuild).

## PROPOSED ACTION

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BPA proposes to rebuild 27.7 miles of the existing 28.2-mile-long Grand Coulee-Creston transmission line that extends from BPA's existing Grand Coulee Substation in Grant County, Washington to the existing Creston Substation in Lincoln County, Washington. The project is

needed because the Grand Coulee-Creston transmission line is old (originally built in 1941), physically worn, and structurally unsound in places. The original conductor has never been replaced and replacement parts are no longer available. A majority of the existing wood-pole structures, hardware, and conductors have exceeded their service life and show normal deterioration due to age and rot. The poor condition of the existing transmission line creates risks to public and worker safety and could lead to outages that would adversely affect power deliveries to BPA's customers in eastern Washington. The rebuild would include the replacement of wood pole structures, including replacement of the cross arms, cross braces, guy wires, anchors, and overhead conductor. The Proposed Action would also involve improvements to existing access roads and some new access road construction.

Access road improvements would likely begin in September 2014. Transmission line construction would likely begin in May 2015, or shortly thereafter, and all major construction activities would likely be completed by November 2015. Details of the Proposed Action are presented in Chapter 2 of the EA.

## **NO ACTION ALTERNATIVE**

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Under the No Action Alternative, BPA would not rebuild the transmission line and would continue to operate and maintain the existing transmission line. Construction activities associated with the Proposed Action would not occur. It is reasonable to expect that as the transmission line structures continue to fail intermittently, the ability of BPA to provide reliable electric service to its customers in the area would be adversely affected and the safety concerns that prompted this proposal for action would persist.

Right-of-way vegetation management would continue under the No Action Alternative, including the removal of 53 trees identified in the right-of-way. Further, BPA would continue to attempt to maintain the existing transmission line as its aged and rotting wood poles, hardware, conductor, and cross arms further deteriorate. Because of the condition of the transmission line, it is likely that the No Action Alternative would result in more frequent maintenance activities within the corridor than under the Proposed Action. It might be possible to plan some of this maintenance, but it is expected that the majority of repairs would occur on an emergency basis as various parts of the transmission line continue to deteriorate. Emergency repair activities could affect vegetation, wildlife, soils, water quality, and other natural resources in the immediate vicinity, and any downed transmission line resulting from structure failures would have a potential for causing fires in the vicinity of the downed transmission line.

## **SIGNIFICANCE OF POTENTIAL IMPACTS OF THE PROPOSED ACTION**

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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. The potential impacts associated with the Proposed Action are summarized below. To evaluate potential impacts from construction, operation, and maintenance activities, 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. Direct, indirect, and cumulative impacts were evaluated. 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.

## **GEOLOGY AND SOILS**

Impacts to geology and soils would be low.

- Clearing of vegetation and grading by heavy equipment during construction would result in soil compaction and an increased potential for erosion, but BPA would minimize erosion by limiting disturbance during the critical erosion period (November through March); avoiding operation of heavy equipment in wet areas to reduce soil compaction and erosion; installing erosion control devices; and revegetating disturbed areas after construction is completed.
- Implementation of additional mitigation measures such as using soil stabilization measures, proper road design, and the use of water bars would further reduce potential construction-related soil erosion.

## **LAND USE, RECREATION, AND TRANSPORTATION**

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

- Project construction would not result in direct conflicts with the city of Grand Coulee, Grant County, and Lincoln County zoning designations and comprehensive plans.
- Use of temporary travel routes through cultivated cropland could damage existing crops, if present at the time of construction. BPA would consult with landowners to identify travel routes across cultivated farmland that would minimize crop damage; restore disturbed farmland back to the pre-project conditions; and compensate landowners for the value of commercial crops damaged or destroyed by construction activities.
- Construction activities on Conservation Reserve Program (CRP) lands would be minimized, and BPA would provide compensation for affected acreage in the unlikely event that the Douglas County Office of Farmland Preservation does not certify that the project would have a minimum effect.
- The increase in construction-related traffic would represent a relatively low increase in daily traffic volume, when compared to the average daily traffic volumes for the roads in the project area and lane closures would result in only minor, temporary traffic delays.

## **WATER RESOURCES**

Impacts to surface water resources would be low in the short term and no impacts would occur in the long term. There would be no impacts to groundwater.

- Erosion from exposed soils is unlikely to affect waterbodies as all existing or proposed new structures are located at least 50 feet from any waterbody.
- NWI mapped wetlands are located at least 100 feet away from all structures. Implementation of avoidance and erosion control measures at structures located near

pothole wetlands would limit the potential for disturbance and sediment entering the wetlands.

- One culvert replacement in an intermittent waterbody would occur in the dry season to minimize potential increased turbidity.
- Reconstructed/improvements to access roads would decrease groundwater infiltration rates within their footprint, but would not likely have a noticeable effect on overall infiltration rates in the project area.

## **VEGETATION**

Impacts to vegetation would be low.

- Vegetation would be cleared and crushed during structure removal and replacement and road improvements/reconstruction leading to localized loss of mature native plants in some grassland-steppe and shrub-steppe areas. However, this impact would affect only a relatively small area in relation to the larger landscape and vegetation impacts would be minimized because structures and associated components would generally be replaced within their existing locations.
- The project would not be expected to affect special status plant species, except for Douglas constricted onion, a state sensitive species. Construction would likely avoid most Douglas constricted onion plant populations entirely, but some populations could be crushed during structure installation. Mitigation measures, such as flagging or fencing and pre-construction survey would minimize the potential for impacts.
- The fifty-three small trees (e.g., American elm, black locust, walnut, catalpa, willow, locust, aspen, apple, spruce, ponderosa pine, Jeffrey pine, unspecified hardwoods, and service berry) that would be removed are located in previously-developed areas with poor habitat quality and are relatively small (less than 8 inches in diameter at breast height).
- Although noxious weeds could spread and colonize disturbed areas as a result of the transport of weed seeds via construction equipment or soil, implementation of mitigation measures, such as wash stations, mulching, and revegetation, would minimize the potential to spread noxious weeds.

## **FISH**

Impacts to fish would be low.

- Erosion of exposed soils could result in indirect impacts to fish and their habitat from sediment deposition into adjacent streams, although this is unlikely due to the implementation of erosion control measures.
- One culvert replacement in an intermittent stream would occur in the dry, which would eliminate impacts to fish as no fish would be present at the time of installation.
- Hazardous materials entering waterbodies could impact fish and their habitat; however, the potential for accidents and hazardous material releases would be minimized through the implementation of spill prevention and response procedures.
- Tree removal would result in little or no change to stream shade and temperatures. Loss of riparian vegetation is unlikely because construction work is located away from riparian areas.

## **WILDLIFE**

Impacts to wildlife would be low-to-moderate.

- Most wildlife species would avoid incidental mortality from construction equipment because animals are typically mobile and would flee if startled. However, some incidental mortality of individual small common animals may occur from direct contact with construction equipment. Incidental mortality would likely have no impact on regional populations.
- Wildlife would be temporarily displaced during construction due to noise and human activity and approximately 0.9 acre of habitat already subject to ongoing vegetation management activities would be lost due to structure replacement. Lost wildlife habitat is not high value as the individual disturbed areas are small and close to the existing structures.
- Disturbance to hibernating snakes in suitable rocky habits would be very limited as work near potential hibernacula would not occur during the snake dormancy periods.
- Approximately 10 miles of affected areas potentially contain suitable habitat for federally and/or state listed threatened and endangered species (e.g., sage grouse, ferruginous hawks, Washington ground squirrels, and gray wolf). Timing restrictions and pre-construction field surveys would minimize any impacts to these species.
- Bird mortality as a result of collisions with conductors and structures would likely remain at current levels because the structures and transmission line would generally remain in the same locations.

## **AIR QUALITY**

Impacts to air quality would be low.

- Construction activities would increase particulate matter, carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), and volatile organic compounds (VOC) levels on a temporary basis within a localized area. Vehicle and equipment emissions would be relatively small and comparable to current conditions found in agricultural and urban areas within the project area.
- Dust and particulate levels would be increased on a temporary basis in a localized area from construction activities, although dust control measures would minimize these impacts.
- Limited amounts of ozone and NO<sub>x</sub> would be emitted by the transmission line as a result of the corona effect. These substances would be released in small quantities and would be similar to current levels produced during operation of the existing transmission line.

## **CLIMATE CHANGE**

Impacts to climate change would be low.

- Greenhouse gas (GHG) emissions from construction activities would occur over approximately five months and result in an estimated total of 6,207 metric tons of carbon dioxide equivalent (CO<sub>2</sub>e) emissions, which is well below the EPA mandatory reporting threshold and would not represent a substantial change from current conditions.

## **SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND PUBLIC SERVICES**

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

- A small, positive impact on the regional economy would occur during construction through employment of local residents, the local procurement of materials and equipment, and spending by construction workers.
- Direct expenditures would generate economic activity in other parts of the economy through what is known as the multiplier effect, with direct spending generating indirect and induced economic impacts.
- The small positive impact on the local economy could also be realized by minority and low-income populations in the project area and the project would have no adverse or disproportionate impacts on minority or low-income populations.
- Sufficient water supply would be available for dust suppression and truck washing for weed management, sufficient waste facilities would be available for construction waste, and sufficient emergency services would be available to respond and to treat injuries to construction workers.

## **CULTURAL RESOURCES**

The Proposed Action would likely have a low-to-moderate effect on cultural resources.

- Impacts to the cultural resources known within the area of potential effect are unlikely given BPA's implementation of avoidance strategies and monitoring during construction activities, such as restrictions to avoid disturbances to cultural resource sites and the use of an archaeological monitor to oversee construction activities next to known sites.
- Three sites that cannot be fully avoided by project design are not eligible for listing in the National Register of Historic Places (NRHP) and would be protected through implementation of the project's Avoidance and Monitoring Plan.
- Construction activities have the potential to affect cultural resources not currently known to exist in the project area; however, the use of trained cultural resource monitors and other mitigation measures would ensure that previously undiscovered cultural resources are managed properly.

## **VISUAL RESOURCES**

Impacts to visual resources would be low.

- Temporary visual impacts to sensitive viewers such as motorists, local residents, and recreational users would occur from construction activities, including replacing structures, working on access roads, clearing vegetation, and storing construction equipment. Any temporary change in the visual landscape would be of short duration and would occur in limited areas that are visible to sensitive viewers.

- The long term visual quality in the project area would be relatively unchanged from current conditions because the overall dominance of the transmission line would not increase as the rebuilt transmission line would continue to be visually subordinate to the existing lattice steel structures that currently dominate the visual landscape within the project area.
- BPA proposes to move structure 2/5 from its existing location to approximately 160 feet to the south, which would reduce visual impacts to the nearby residents.

## **PUBLIC HEALTH AND SAFETY**

Impacts to public health and safety would be low.

- The use of heavy equipment during construction carries the risk of accidental injury to workers, although construction safety procedures and other mitigation measures would reduce the potential for health and safety impacts.
- There would be a low risk of collisions between construction vehicles and vehicles driven by the public while construction is ongoing and risks to low-flying aircraft would not change appreciably from current conditions. Implementation of traffic control measures, such as the use of flaggers and coordination between Washington Department of Transportation and county road staff, would minimize potential vehicle collision risks.
- Contamination of vegetation, soil, and water from an accidental release of hazardous materials could result in indirect effects to public health and safety, although this risk is low due to the implementation of a Spill Prevention and Response Procedures that are designed to prevent and contain accidental spills.

## **ELECTROMAGNETIC FIELDS AND NOISE**

Impacts from electromagnetic fields (EMF) and noise would be low.

- Although construction equipment and vehicles could exceed applicable noise thresholds for some of the noise-sensitive land uses within the project area, these would be relatively short in duration (approximately 1 to 2 days) and would only occur during daylight hours.
- Noise associated with helicopter use for construction would be temporary and intermittent and it is estimated that helicopters would not be in any given line mile for more than 3 hours. Noise from helicopter inspection patrols would be extremely infrequent and limited in duration.
- The existing audible noise from high-voltage transmission lines, which occurs as a result of conductor corona activity, would not change from current conditions and would remain compliant with applicable state of Washington noise regulations.
- Newer, properly installed connecting hardware would reduce risks associated with aging hardware spark-discharge activity, which is expected to either not change or possibly slightly improve radio and television performance along impacted transmission line sections.

## **CUMULATIVE IMPACTS**

Cumulative impacts on assessed resources from the Proposed Action in combination with past, present, and reasonably foreseeable future actions would be low to none.

- The resources in the project vicinity have been substantially altered over the past century by a variety of human activities, including dryland farming, livestock grazing, the settlement of small towns and homesteads, construction of connecting roadways, and the development of Grand Coulee Dam and associated transmission lines and substations. Effects of the Proposed Action would have a small incremental increase in cumulative impacts and would be further reduced through the implementation of the various mitigation measures described above.

## **DETERMINATION**

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The FONSI includes a statement of findings on how the Proposed Action impacts wetlands and floodplains. The Proposed Action conforms to applicable state or local floodplain protection standards. BPA will allow 15 days of public review after publication of this statement of findings before implementing the Proposed Action.

Based on the information in the EA, as summarized here, and the implementation of the MAP, 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

May 27, 2014  
Date

# **Grand Coulee-Creston Transmission Line Rebuild Project Mitigation Action Plan (MAP)**

**Bonneville Power Administration**

**DOE/EA-1950**

**May 2014**

## **SUMMARY**

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This Mitigation Action Plan (MAP) is included with the Finding of No Significant Impact (FONSI) for the Grand Coulee-Creston Transmission Line Rebuild Project. This project would rebuild nearly 28 miles of the Grand Coulee-Creston No. 1 115-kilovolt (kV) transmission line between the cities of Coulee Dam in Grant County and Creston in Lincoln County, Washington.

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

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](mailto:etorth@bpa.gov).

If you have any questions about the MAP, contact the project environmental lead, Katey Grange at 503-230-4047 or [kcgrange@bpa.gov](mailto:kcgrange@bpa.gov)

If you have questions about the MAP during construction or post-construction, contact the environmental lead for project implementation, Laura Roberts at 503-230-5073 or [laroberts@bpa.gov](mailto:laroberts@bpa.gov).

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

## **CONSULTATION RELATED TO MITIGATION MEASURES**

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BPA evaluated the potential project impacts to species listed under Section 7 of the Endangered Species Act. No impacts are expected to occur to any federally-listed threatened or endangered species or their habitat. Implementation of the mitigation measures listed below will further reduce the possibility of impacts to habitat. A no effect memo is on file at BPA that documents the lack of project-related impacts.

BPA consulted with the Washington State Department of Archeology and Historic Preservation (DAHP), Spokane Tribe of Indians, and the Confederated Tribes of the Colville Reservation under Section 106 of the National Historic Preservation Act. On March 27, 2013, BPA initiated consultation with all parties. Two cultural resource surveys were conducted to identify historic properties in the area of potential effect (APE). Based on the results of these surveys, BPA made a finding of no adverse effect to historic properties in March 2014. DAHP did not respond to BPA’s findings within the 30-day review period nor did BPA receive objections from other consulting parties. An avoidance and monitoring plan with recommendations specific to each cultural resource has been developed through consultation with DAHP, the Spokane Tribe of Indians, and the Confederated Tribes of the Colville Reservation. The mitigation measures prescribed for cultural resources below include measures intended to minimize impacts on unknown cultural resources, should they be discovered during construction of the Proposed Action.

The installation of one culvert within an unnamed stream may require Pre-Construction Notification under Section 404 Clean Water Act. BPA is coordinating with U.S. Army Corps of Engineers regarding the need for Section 404 permitting. The mitigation provided below would avoid or minimize potential effects on waters of the United States.

## **MITIGATION MEASURES**

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The mitigation measures in Table 1 have been identified to reduce potential impacts to environmental resources from the project.

**Table 1. Mitigation Action Plan**

Environmental Resource	Mitigation Measures
Geology and Soils	<ul style="list-style-type: none"> <li>• Minimize the ground disturbance footprint, particularly in areas prone to erosion, such as along steep slopes (structures on slopes greater than 30 percent are: 1/8, 2/1, 3/2, 3/3, 3/4, and 18/2).</li> <li>• Design roads to limit water accumulation and install appropriate access road drainage (e.g., culverts, ditches, water bars, cross drainage, or roadside berms) to control and disperse runoff, prevent erosion, and reduce the risk of mass wasting.</li> <li>• Conduct work during the dry season, as possible, when stream flow, rainfall, and runoff are low to minimize erosion, sedimentation, and soil compaction.</li> <li>• Use stabilization and revegetation measures to limit soil exposure.</li> <li>• Prepare and implement a Stormwater Pollution Prevention Plan that addresses measures to reduce erosion and runoff and stabilize disturbed areas.</li> <li>• Inspect and maintain access roads, culverts, and other facilities after construction to ensure proper function and nominal erosion levels.</li> <li>• Inspect revegetation work and sites to verify adequate growth, and implement contingency measures as needed.</li> </ul>

Environmental Resource	Mitigation Measures
Land Use, Recreation, and Transportation	<ul style="list-style-type: none"> <li>• Distribute, post, and publicized the construction schedule so landowners and recreational users know when potential construction-related disruptions might occur.</li> <li>• Schedule construction during periods when active farms along the right-of-way are likely to be fallow, where possible, to minimize the potential for crop damage.</li> <li>• Consult with landowners to identify travel routes across cultivated farmland that would minimize crop damage.</li> <li>• Restore disturbed farmland back to the pre-project conditions and compensate landowners for the value of commercial crops damaged or destroyed by construction activities.</li> <li>• Work with applicable landowners to maintain their CRP status or provide compensation if the usage was not allowed by the Douglas County Office of Farmland Preservation.</li> <li>• 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 structures.</li> <li>• Maintain access to residences, farms, and businesses during construction.</li> <li>• Keep construction activities and equipment clear of residential driveways, to the extent possible.</li> <li>• Use water trucks or other measures to minimize fugitive dust during project construction.</li> <li>• Coordinate the routing and scheduling of construction traffic with WSDOT and county road staff.</li> <li>• Publicize road closures and traffic delays to minimize impacts to traffic.</li> <li>• Employ traffic-control flaggers and post signs warning of construction activities and merging traffic, when necessary, for short interruptions of traffic.</li> </ul>
Water Resources	<ul style="list-style-type: none"> <li>• Utilize standard BMPs, in accordance with the <i>Stormwater Management Manual for Eastern Washington</i> (Ecology 2004), where applicable.</li> <li>• Design and construct roads to minimize drainage from the road surface directly into water features.</li> <li>• Minimize erosion, sedimentation, and soil compaction by conducting as much work as possible during the dry season when stream flow, rainfall, and runoff are low.</li> <li>• Conduct the culvert installation/replacement work during the dry season, either when stream flows, rainfall, and runoff are low; when there is no flow; or by diverting flow from the stream culvert location during installation, as necessary.</li> <li>• Stabilize approaches to streams and stream crossings with clean rock or steel plates during construction, as needed.</li> <li>• Drainage control features, such as drain dips on access road should be used, as needed to control runoff and erosion.</li> <li>• Minimize the ground disturbances when working in or near waterbodies during construction, particularly in areas prone to erosion, and install stakes or flagging to restrict vehicles and equipment to designated routes and work areas.</li> <li>• Conduct as much work as possible during the dry season when stream flow, rainfall, and runoff are low.</li> <li>• 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.</li> </ul>

Environmental Resource	Mitigation Measures
Water Resources	<ul style="list-style-type: none"> <li>• Prepare and implement a Stormwater Pollution Prevention Plan that addresses measures to reduce erosion and runoff and stabilize disturbed areas.</li> <li>• Implement pollution and erosion control measures prior to construction and maintain them throughout the duration of the Proposed Action.</li> <li>• Store construction vehicles or equipment at least 50 feet from any stream or wetland or use secondary containment systems as necessary.</li> <li>• Locate refueling and servicing operations where spilled material cannot enter natural or manmade drainage conveyances (e.g., ditches, catch basins, ponds, wetlands, streams, and pipes). Use pumps, funnels, absorbent pads, and drip pans when fueling or servicing vehicles.</li> <li>• Keep spill response materials on site and with equipment.</li> <li>• Maintain vehicles and equipment in good working order to prevent oil and fuel leaks.</li> <li>• Ensure that temporary travel routes would avoid waterbodies and wetlands, whenever possible.</li> <li>• Flag or stake wetland boundaries in the vicinity of construction areas and ensure these areas are avoided during construction.</li> <li>• Locate tensioning sites at least 50 feet from streams or wetlands when possible.</li> <li>• Locate structure guy anchors outside of wetlands and buffers when possible.</li> <li>• Place erosion control materials around the work area when working within 25 feet of wetlands. Remove and stabilize material in an upland area, as needed</li> <li>• Require a BPA environmental specialist to meet with contractors and inspectors in the field and visit wetlands or Waters of the United States near or within construction areas to review mitigation measures and any permit requirements.</li> <li>• Inspect and maintain access roads, culverts, and other facilities after construction to ensure the proper function and nominal erosion levels.</li> </ul>
Vegetation	<ul style="list-style-type: none"> <li>• Cut or crush vegetation, rather than blade, in areas that would remain vegetated, to maximize the ability of native plants to resprout and maintain soil integrity. Soils would be prepared if needed prior to seeding.</li> <li>• Implement restoration or stabilization actions as soon as possible after ground disturbing activities.</li> <li>• Prior to seeding, prepare soils through decompaction, if needed.</li> <li>• Reseed all disturbed areas as soon as possible after construction, with an appropriate seed mix that is discussed with and agreed upon with landowners. Native seed mixes would be used where appropriate and effective.</li> <li>• Periodically inspect reseeded sites to verify adequate growth. If necessary, implement contingency measures to ensure adequate growth and vegetation cover.</li> <li>• Equip all vehicles with basic fire-fighting equipment, including extinguishers and shovels, to potentially put out small fires.</li> <li>• Reduce disturbance areas associated with structure replacement to a 50-foot by 50-foot (0.06 acre) area where special status plants occur (structures 4/4, 4/5, 5/1, and 14/4), if possible.</li> </ul>

Environmental Resource	Mitigation Measures
Vegetation	<ul style="list-style-type: none"> <li>• Install signage, stakes, and/or flagging around areas found during the May 2013 surveys to have Douglas constricted onion present prior to construction to minimize disturbance.</li> <li>• Implement measures to minimize the introduction and broadcast of weed seeds during construction. Clean vehicles and other equipment that have been in weed infested areas at established blow or wash stations upon leaving the infested areas, to prevent spreading weeds to uninfested areas during construction.</li> <li>• Continue to implement weed control efforts in the right-of-way as part of ongoing vegetation management efforts. Utilize information from the pre-construction noxious weed survey conducted for the project (BPA 2013) to assess whether noxious weeds have spread or increased in abundance as a result of construction activities.</li> </ul>
Fish	<ul style="list-style-type: none"> <li>• Prepare and implement a Stormwater Pollution Prevention Plan that addresses measures to reduce erosion and runoff and stabilize disturbed areas.</li> <li>• Implement pollution and erosion control measures prior to construction and maintain them throughout the duration of the Proposed Action.</li> <li>• Design and construct roads to minimize drainage from the road surfaces directly into water features.</li> <li>• Minimize erosion, sedimentation, and soil compaction by conducting as much work as possible during the dry season when stream flow, rainfall, and runoff are low.</li> <li>• 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.</li> <li>• Stage construction vehicles and equipment at least 50 feet from any waterbody unless authorized by a permit or the vehicle is travelling on an existing road.</li> <li>• Conduct all culvert installation/replacement work in the dry streambed, when there is no flow so as to avoid any impacts to fish species, if possible.</li> <li>•</li> </ul>
Wildlife	<ul style="list-style-type: none"> <li>• Clear trees outside of the primary nesting period (February 1 through July 30) to minimize the impact to nesting birds, if possible.</li> <li>• Conduct ground disturbance work in rocky areas after snakes have emerged from hibernation (mid-April and when ambient temperatures are greater than or equal to 70°F) to protect both the snakes and workers.</li> <li>• Conduct walking surveys within suitable habitat for Washington ground squirrel during April to June prior to construction to determine the presence of this species within the project area.</li> </ul>
Air Quality	<ul style="list-style-type: none"> <li>• Use water trucks or other dust control measures to control dust during construction.</li> <li>• Keep construction vehicles at low speeds (15 miles per hour) on unpaved access roads to minimize dust.</li> <li>• Keep all vehicle engines in good operating condition to minimize exhaust emissions.</li> <li>• Certify that all construction equipment is in proper working condition according to manufacturer's specifications.</li> <li>• Shut down idling construction equipment, if feasible.</li> </ul>

Environmental Resource	Mitigation Measures
Climate Change	<ul style="list-style-type: none"> <li>• Locate staging areas as close to construction sites as practicable to minimize driving distances between staging areas and construction sites.</li> <li>• Encourage the use of the proper size of equipment for the job to maximize energy efficiency.</li> <li>• Recycle or salvage non-hazardous construction and demolition debris where practicable.</li> <li>• Dispose of wood poles in the local area where practicable.</li> <li>• Use local rock sources for road reconstruction/improvement where practicable.</li> </ul>
Socioeconomics, Environmental Justice, and Public Services	<ul style="list-style-type: none"> <li>• Distribute a schedule of construction activities to all potentially affected landowners.</li> <li>• Coordinate with local farmers and landowners to minimize potential construction-related disruptions.</li> <li>• Compensate landowners for the value of commercial crops damaged or destroyed by construction activities.</li> <li>• Coordinate the routing and scheduling of construction traffic with Washington State Department of Transportation (WSDOT) and county road staff.</li> <li>• Incorporate fire prevention measures in construction plans to limit the potential effects of the project on fire departments/districts.</li> <li>• Place guard structures over local utility lines and roadways during construction to ensure continued service and safe passage.</li> </ul>
Cultural Resources	<ul style="list-style-type: none"> <li>• Implement the cultural resources “Avoidance and Monitoring Plan for Bonneville Power Administration’s Grand Coulee-Creston No. 1 Transmission Line Rebuild Project, Grant and Lincoln Counties, Washington.”</li> <li>• Use existing access roads where possible to limit the possibility of new disturbance.</li> <li>• Restrict work areas to avoid disturbance to 19 cultural resource sites. Work areas would be accessed via specific routes to avoid two cultural resource sites. An archaeological monitor would be employed at 11 sites to further ensure impacts are avoided.</li> <li>• Stop ground-disturbing activities if they cause an inadvertent discovery per BPA’s Inadvertent Discovery Procedure.</li> <li>• Stop operations immediately within 200 feet of an inadvertent discovery if human remains, suspected human remains, or any items suspected to be related to a human burial are encountered during project construction.</li> <li>• Notify the BPA Archaeologist and Contracting Officer’s Technical Representative immediately if any inadvertent discoveries are made.</li> <li>• Notify the Grant County or Lincoln County coroner human remains or suspected human remains are identified.</li> </ul>
Visual Resources	<ul style="list-style-type: none"> <li>• Schedule all construction work during daylight hours to reduce the need for nighttime illumination of work areas.</li> <li>• Use non-reflective conductors and insulators on all replacement structures.</li> <li>• Avoid storing construction equipment and supplies on residential streets or access roads directly adjacent to residential property, to the greatest extent possible.</li> <li>• Reseed disturbed, non-farmed areas once construction is complete using a predominately native seed mix or a seed mix agreed upon with landowners.</li> </ul>

Environmental Resource	Mitigation Measures
Visual Resources	<ul style="list-style-type: none"> <li>• Inspect reseeded sites periodically to verify adequate growth. If necessary, implement contingency measures, such as reseeded, to ensure development of adequate growth and vegetation cover. Monitor areas replanted with woody species until a 70-percent establishment rate is met.</li> <li>• Require the contractor to maintain clean construction sites to minimize the visual impacts of the temporary use of these areas.</li> </ul>
Public Health and Safety	<ul style="list-style-type: none"> <li>• Keep spill prevention materials on site and with equipment.</li> <li>• Prepare and implement Spill Prevention and Response Procedures to prevent and contain accidental spills, including notification procedures.</li> <li>• Conduct crew safety meetings at the start of each workday to review potential safety issues and concerns.</li> <li>• Conduct monthly meetings between BPA and the contractor to discuss safety concerns.</li> <li>• Secure the site at the end of each workday, as much as possible, to protect equipment and the general public.</li> <li>• Comply with all fire safety laws, rules, and regulations of the State of Washington and prepare a fire prevention and suppression plan to meet BPA, local authority, and land manager requirements.</li> <li>• Construct and operate the new transmission line to comply with the National Electrical Safety Code (NESC).</li> <li>• 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.</li> </ul>
Electromagnetic Fields (EMF) and Noise	<ul style="list-style-type: none"> <li>• Locate equipment as far away as is practical from noise-sensitive areas.</li> <li>• Require all construction equipment powered by gasoline or diesel engines to have sound-control devices that are at least as effective as those originally provided by the manufacturer.</li> <li>• Require all equipment to be operated and maintained to minimize noise generation.</li> <li>• Prohibit gasoline or diesel engines from having unmuffled exhaust.</li> <li>• Distribute the construction schedule to all landowners within 1000 feet of the Proposed Action to inform the landowners of when they might experience construction-related noise.</li> <li>• Limit construction noise to daylight hours (7:00 a.m. to 5:00 p.m.).</li> <li>• Turn off construction equipment during prolonged periods of non-use.</li> <li>• Investigate legitimate radio or television interference complaint received by BPA. Take corrective action if BPA facilities are determined to be the cause of the interference.</li> </ul>

## REFERENCES

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BPA (Bonneville Power Administration). 2013. Grand Coulee-Creston No. 1 115-kV Transmission Line Rebuild Project Final Pre-Construction Undesirable Plans Survey Report.