Bonneville-Hood River Transmission Line Rebuild Project

Final Environmental Assessment

DEPARTMENT OF ENERGY

Bonneville Power Administration
DOE/EA-1981
June 2018

This document is the Final Environmental Assessment (EA) for the proposed Bonneville-Hood River Transmission Line Rebuild Project (project). Bonneville Power Administration (BPA) prepared this document as an abbreviated Final EA because there have been no substantial changes to the Proposed Action, alternatives, or environmental analysis presented in the Draft EA. This abbreviated Final EA provides changes made to the text of the Draft EA, as well as comments received on the Draft EA and BPA's responses to those comments. This Final EA should be used as a companion document to the Draft EA (DOE/EA-1981, dated September 2016), which contains the full text describing the project, its potential environmental impacts, and mitigation measures to reduce impacts. The Draft EA is available on the project webpage at https://www.bpa.gov/goto/HoodRiver.

Summary

BPA proposes to rebuild structures and replace conductor and/or hardware along about 22 miles of its existing 23-mile-long, 115-kilovolt (kV) Bonneville-Hood River transmission line and the existing approximately 400- foot-long Cascade Locks Tap, and also to improve the access road and foot trail system that allows BPA to get to and from the Bonneville-Hood River transmission line. The Bonneville-Hood River transmission line extends in an easterly direction from the existing Bonneville Dam Powerhouse on the Columbia River in Multnomah County, Oregon to BPA's existing Hood River Substation in Hood River County, Oregon. The Cascade Locks Tap connects the Bonneville-Hood River transmission line to the existing Cascade Locks Substation in the town of Cascade Locks.

Portions of the Bonneville-Hood River transmission line and associated tap are in poor condition due to normal deterioration and aging. Due to these conditions, portions of the line have begun to fail in recent winter months, resulting in outages requiring emergency repair. The age, continuing deterioration, and overall poor condition of the line create the risk of additional outages that would adversely affect power deliveries to BPA's customers in the Columbia River Gorge and eastern Oregon and pose safety risks for BPA transmission line workers and the public. In addition, the existing road and foot trail system that BPA uses to access the transmission line is in poor condition and does not extend to all structures, making both scheduled maintenance and emergency repairs unsafe.

BPA released the Draft EA for public comment on September 29, 2016; the comment period was open until October 31, 2016, BPA held a public meeting in Hood River, Oregon on October 12, 2016

to answer questions and accept comments on the Draft EA. The Draft EA describes the project, its potential environmental impacts, and mitigation measures to reduce those impacts. BPA sent the Draft EA to agencies and interested parties and notified other potentially affected parties about the availability of the Draft EA, as well as how to request a copy. For further information regarding the comment period and comments received, see the section titled "**Comments Received on Draft EA and BPA's Responses"** in this document.

Review of Eagle Creek Fire

Between the time the Draft EA was released and this Final EA was issued, a major wildfire occurred in the Columbia River Gorge near Cascade Locks, Oregon. This wildfire, known as the Eagle Creek Fire, burned a large area in the Columbia River Gorge, including areas in the vicinity of the Bonneville-Hood River transmission line. The following discussion summarizes information related to the Eagle Creek Fire. Information about the fire is provided, as is a summary of emergency response activities that BPA undertook to help protect the transmission line from the fire's aftermath. The effect of the wildfire on the environmental impact analysis contained in this EA also is addressed.

On September 2, 2017, the Eagle Creek Fire ignited in the Columbia River Gorge approximately 2.5 miles west of Cascade Locks, Oregon. This wildfire spread rapidly and by the morning of September 5th, it had grown to over 20,000 acres in size. At its peak, over 1,000 firefighters and other personnel were engaged in fighting this fire. During the fire, BPA coordinated with the U.S. Forest Sercice Fire Management Team 6 to temporarily take BPA lines and facilities in the Columbia River Gorge safely out of service (de-energize and re-energize) when needed. This provided fire crews with safe access to fight the wildfire while maintaining the reliability of the BPA transmission system.

The Eagle Creek Fire ultimately grew to approximately 49,000 acres before it was officially 100 percent contained on November 30, 2017. Within the 49,000-acre fire perimeter area, about 7,000 acres (approximately 15 percent) burned severely and about 15,000 acres (approximately 30 percent) burned moderately. The remaining 27,000 acres (approximately 55 percent) remained unburned or burned at low intensity (i.e., ground cover largely intact and soil structure unchanged) (U.S. Forest Service 2017a and b). Complete information regarding fire damage and suppression efforts can be found at the following link: https://www.fs.usda.gov/detail/crgnsa/fire/?cid=fseprd561692.

The area within the Eagle Creek Fire perimeter includes areas along the Bonneville-Hood River transmission line between the Bonneville Dam powerhouse and line mile 14. The fire damaged several transmission structures, burned thousands of trees along the transmission line, and damaged culverts along BPA's access road network; all of which immediately threatened the reliability of the power grid. To address these threats and ensure the transmission line remained operable, BPA undertook various emergency response activities described below in November and December 2017. BPA analyzed the potential effects of these activities in a Categorical Exclusion issued on October 25, 2017; a copy of the CX can be downloaded at the following link: https://www.bpa.gov/efw/Analysis/CategoricalExclusions/cx/20171025-Eagle-Creek-Fire-Emergency-Response-Actions.pdf. All emergency response activities were implemented in a manner consistent with the proposed action and mitigation measures described in this EA.

Emergency response activities performed by BPA included the following:

- Removal of about 2,000 burned and dead trees that were in danger of falling into the transmission line. During the tree removal, one tree fell on the conductors between structures 1/8 and 2/1, knocked-out power, and damaged the steel lattice structure 2/1. BPA line crews replaced structure 2/1 with a new, H-frame wood-pole structure.
- Replacement of guy wires and anchors damaged by the fire and installation of additional guy wires, anchors, and cross braces on structures 3/3, 5/3, 5/9, 6/4, and 6/8.
- Repair of access roads in select locations between line miles 1 and 7 of the transmission line to facilitate structural repairs and ensure access to the structures during inclement weather. Access road improvements included the replacement of culverts at stream crossings and addition of base rock, surface rock, water bars, drain dips, cross drain culverts, and ditching to help the roads withstand the increased stormwater runoff common in post fire landscapes.

In its assessment of the fire, the U.S. Forest Service determined that most of the moderately- to severely-burned areas within the Eagle Creek Fire perimeter area occurred at higher elevations in the Eagle Creek, Tanner Creek, Moffett Creek, and McCord Creek drainages (U.S. Forest Service 2017 a and b). These areas are located about 1.5 to 2 miles south and west of the Bonneville-Hood River transmission line. Much of the unburned to low-intensity burn occurred along the lower portions of the landscape adjacent to the Bonneville-Hood River transmission line. As a result, although there clearly is evidence of the fire in this lower portion, the overall landscape in this area remains largely similar to what existed prior to the fire. Therefore, existing conditions in the vicinity of the transmission line as a result of the fire have not significantly changed from what was described in the EA. The following discussion describes in more detail the effect of the Eagle Creek Fire on key environmental resources relevant to the proposed project.

Recreation

As described in Section 3.2 of the EA, the existing transmission line and access roads within the fire area pass through or are located near multiple recreation facilities, including trails and campgrounds, on lands within the National Forest System, which is managed by the U.S. Forest Service, and state-owned lands managed by either Oregon State Parks or Oregon Department of Fish and Wildlife (ODFW). The Mark O. Hatfield Wilderness Area is located south of the transmission line for about 9 miles.

As of spring of 2018, the U.S. Forest Service has assessed over 50 miles of the 90 miles of trails within the Eagle Creek burn area (USFS 2018). The trails in the burn area are closed and the U.S. Forest Service and land managers are working to restore access and ensure that the recreational facilities are safe for users. As such, most of the recreational areas located between line miles 1 and 13 of the transmission line are currently closed to recreationists. Near the project area, trails from Cascade Locks to the east are anticipated to be opened in the summer of 2018. No timeframe for reopening has been established for the facilities west of Cascade Locks as these are in the most severely burned areas.

Once reopened, it is anticipated that the trails and recreational facilities would function in a manner as described in the EA. The project would have the same or similar low to moderate impacts, such as temporary, intermittent closures and increased noise levels, on recreationist as those described in Section 3.2 of the EA. As no timeline has been identified for reopnening recreational facilities west of

Cascade Locks, it is possible that some facilities may still be closed during project construction, which would result in less disturbance to recreationists than what was discussed in the EA.

Landslide Hazard

As noted in Section 3.3.1 of the EA, the project area crosses extensive landslide deposits in the first 10 miles of the transmission line. While this area is not automatically prone to landslides (DOGAMI 2010), the Eagle Creek Fire has likely increased the risk of landslide by removing moss and other vegetation that help hold the steep slopes and fractured rock together (USFS 2017a and b). In light of the preexisting landslide hazards, BPA included several mitigation measures in the EA for the proposed project designed to minimize the risk and damage resulting from landslides. These mitigation measures (See Table 2.7-1), which include but are not limited to, preparation of site-specific Public Safety Plans, implementation of slope stabilization measures, and preconstruction geotechnical investigations, are adequate to address the increased landslide risk on the post-fire landscape.

Soils and Hydrology

Wildfires can damage soils and remove vegetation making the landscape more susceptible to surface runoff and erosion. For example, post-fire peak stream flow can increase to 100 times more than the pre-fire condition (Neary et. al. 2005). As stated above, the burn severity surrounding the Bonneville-Hood River transmission line ranges from unburned to low-intensity, meaning that soil structure and vegetative ground cover in the immediate project area are largely intact (USFS 2017a and b). However, in light of the size and severity of the Eagle Creek Fire, there likely will be an overall incremental increase in erosion and runoff in the project vicinity from the surrounding watersheds. Accordingly, any post-fire contribution from the proposed project to erosion and runoff effects would be proportionally smaller than what was analyzed in the EA. In addition, the proposed erosion and sediment control mitigation measures identified for the proposed project in Table 2.7-1 would be adequate to address any site-specific increases in surface runoff and erosion within the project area due to the proposed project.

Vegetation

As discussed in Section 3.4.2 of the EA, a small quantity of long-term vegetation loss would occur as a result of the project. A majority of the temporary project-related impacts would occur in previously disturbed habitats of managed right-of-way with a small amount of sensitive vegetation being temporarily disturbed by construction. Burn intensity from the Eagle Creek Fire near the proposed project ranged from unburned to low-intensity burn, meaning that vegetative ground cover in the immediate project area is largely intact (USFS 2017a and b). The greatest vegetation change near the project is the burning of trees along the transmission line and access road rights-of-way and their subsequent removal (about 2,000 in total). While a number of trees were removed during the emergency response, there remains relatively the same amount of forested lands in the general area with a large portion of that area being either unburned or only lightly-burned.

Vegetation impacts from the proposed project would continue to be low in the short term and long term due to the construction-related disturbances occurring over multiple construction seasons. These construction-related impacts are anticipated to be reduced based on the implementation of

mitigation measures identified in Table 2.7-1, which would include the minimization of project work spaces and revegetation of disturbance areas.

Wildlife

As noted in Section 3.8.2 of the EA, temporary and permanent impacts of the project on priority habitats would be relatively small compared to the quantity available in the general project area. This analysis remains valid considering that wildfires like the Eagle Creek Fire, that burned with varying degrees of severity, increase habitat complexity and the variety of habitat conditions and successional stages available to animals (Smith, Jane Kapler, ed. 2000). Similar to the effects on soils and hydrology discussed above, effects to wildlife resulting from the proposed project would be proportionally smaller than what was analyzed in the EA.

Overall wildlife impacts from the proposed project would continue to be moderate in the short term due to the construction-related disturbances occurring over multiple construction seasons. However, these construction-related impacts are anticipated to be reduced based on the implementation of mitigation measures identified in Table 2.7-1 to reduce incidental mortality through seasonal timing restrictions, species location identification through pre-construction surveys, and the minimization of work areas in sensitive habitats. The pre-construction raptor and northern spotted owl surveys would also help detect any changes in nesting locations and occupancy that may have resulted from changes to post-fire habitat conditions.

Visual Quality

As noted in Section 3.9.2 of the EA, visual impacts from the proposed project within the Columbia River Gorge National Scenic Area would likely be low to moderate given that areas cleared for road and trail improvements are screened from Key Viewing Areas by existing vegetation and topographic features. Transmission structures would generally remain lower in height than the trees adjacent to the right-of-way and therefore would not result in increased visibility where structures are currently screened by vegetation. Additionally, these cleared areas and transmission structures would appear small in scale compared to the larger scale of the surrounding landscape. These effects would remain effectively the same in post-fire conditions as much of the area along the transmission line experienced low-severity burning or did not burn at all; refer to figures C-26 to C-28 (Appendix C) showing post fire conditions in the transmission line right-of-way.

Accordingly, the impact analysis presented in the EA accurately describes the potential environmental impacts of the Project even in light of the Eagle Creek Fire, and the EA's mitigation measures are still appropriate for mitigating the Project's environmental impacts.

Changes to the Draft EA

Changes made to the draft EA primarily include the addition of clarifying language, refinement of calculations for access road and trail activities and associated impacts, updates to the visual resource assessment based on refined project design information, and minor revisions to mitigation measures. These revisions are presented below by the chapter and section in which they appear in the Draft EA. Where text has been modified, deleted text is indicated as "strikethrough" format (~~strikethrough~~) and new text is underlined and highlighted in blue.

Chapter 2 — Proposed Action and Alternatives

2.1 Proposed Action

2.1.2 Proposed Rebuild Project Overview

The fifth bullet in Section 2.1.2 (page 2-6) has been revised as follows:

- Improvement, reconstruction, extension, and decommissioning of existing access roads and trails.

Table 2.1-2 (page 2-18) has been revised as follows:

Table 2.1-2. Access Road and Vegetation Activities under the Proposed Action

Proposed Action Component	Quantity
Access Road Activities[1,2]	
Total length of access road activities	
Extension (miles)	Option 1: 0.2 Option 2: 0.1 Option 3: 0.1
Reconstruction (miles)	Option 1: 0.5 Option 2: 0.5 Option 3: 0.2
Improvement (miles)	22.6
Direction of Travel (miles)	6.2
Decommissioning (miles)	0.1
Total length of trail activities	
Extension (miles)	~~0.3~~ 0.2
Reconstruction (miles)	~~1.0~~ 1.1
Improvement (miles)	~~1.0~~ 0.7
Direction of Travel (miles)	4.9
Gates (replacements and new)	~~17~~ 16
Pedestrian Bridges (new)	2
Vehicle Bridges (Temporary)	1
Cross-Drain Culverts (new)	2
Fords (new or repair)	6
Vegetation Removal	
Removal or disturbance of low-growing vegetation within the transmission line right-of-way (acres)	0.3 (permanent) 42.4 (temporary)
Removal of trees along access roads	66

Table 2.1-2. Access Road and Vegetation Activities under the Proposed Action

Removal of danger trees adjacent to the transmission line right-of-way	211
Removal of trees under Cascade Locks Tap line	7
Removal of trees within pulling/tensioning work areas[3]	96

Notes:

[1] Where only one value is shown, quantity is the same for all Line Mile 19 options. Where quantities differ by option, the value for each Line Mile 19 options is shown.

[2] Access road activities would occur between structure 1/4 and the Hood River Substation.

[3] Conservative estimate based on a 200-foot by 200-foot pulling/tensioning work area. Tree clearing in these areas are expected to be less than the number depicted.

2.1.6 Access Roads and Foot Trails

The last two sentences of the second paragraph of Section 2.1.6 (page 2-27) have been revised as follows:

> At these locations, BPA would acquire about 4.4 miles of easement rights or permits to use various sections of the existing roads and trails. Generally, BPA obtains a 50-foot-wide easement or permit for access road rights-and 20-foot-wide easements or permits for foot trails.

The following has been added at the top of page 2-28 as the fourth bullet of the list of categories of access road work beginning on page 2-27, after the 'Improvements' bullet:

- **Decommissioning**— An existing access road that is approximately 450 feet in length would be decommissioned and restored. The existing roadbed would be decompacted and reseeded.

The three bullets at the bottom of page 2-28 describing categories of trail work have been revised as follows:

- **Extensions**— As with the road extensions, trail extensions would be constructed to either connect existing trails to a structure or to connect segments of existing trails together. Trail extensions would entail vegetation clearing where needed and the establishment of a trail bed. Trail extensions would be constructed at about 20 locations spread over the length of the line and would each range from 5 feet to 300 feet in length. Altogether, a total of about 0.~~3~~2 mile of trail extensions would be constructed.

- **Reconstruction**—Trail reconstruction would occur where the existing trails deteriorated to the point of being unusable or unsafe. Surface improvements such as stairways, ladders, and adjacent vegetation trimming would be conducted to make their use safe during construction. Trail reconstruction would occur at about 40 locations, each ranging in length from about 5 to 515 feet. Altogether, a total of about 1.~~0~~1 miles of existing trails would be reconstructed.

- **Improvements**— Trail improvements would involve minor adjustments, such as surface smoothing, of existing trails that provide access to the line. A total of about ~~1.0~~ 0.7 mile of existing trails would be improved.

2.1.7 Gates, Bridges, Fords, and Culverts

The first paragraph of Section 2.1.7 (page 2-29) has been revised as follows:

> Other access road improvements would include the installation of or improvements to 1~~7~~6 gates at the entrances to access roads to prevent public access to the transmission line right-of-way.

2.1.11 Anticipated Construction Schedule

The construction years have been revised as follows:

> The schedule for construction of the Proposed Action depends on the completion and outcome of the environmental review process, including the duration of regulatory agency reviews and timing of permit approvals. If the Proposed Action is implemented, construction would begin as early as spring 2017. Access road work would likely be conducted first with structure work being conducted afterwards. Construction work would be done in phases, with construction occurring on more than one structure at a time in different parts of the transmission line right-of-way. Line construction would occur over two or three construction seasons (late spring to early fall 2018, 2019~~8~~, 2020~~19~~ and/or 2021~~0~~; about seven months each season).

2.2 Line Mile 19 Options

The first paragraph in this subsection (page 2-32) has been revised as follows:

> At Line Mile 19, there is an existing access road that runs down the length of the transmission line easement. Unlike most other access roads along the line, however, this access road does not directly access the four transmission structures (19/4, 19/5, 19/6, 19/7) within this portion of the easement. Instead, this access road is located along the south edge (i.e., the high or upslope side) of the transmission line easement. Due to this location, this access road is about 30 to 40 feet higher in elevation than the bases of each of the four transmission structures at Line Mile 19. The access road also is located approximately 50 feet (measured horizontally) away from each structure.
>
> In addition, the existing access road at Line Mile 19 is only approximately 10 feet wide and severely out-sloped (i.e., tilted downhill), making it unsafe for even four-wheel drive trucks and SUVs. The road is particularly unsafe for BPA maintenance vehicles and construction equipment such as cranes and bucket trucks, which can be up to 10 feet wide (and up to 12 feet wide with outriggers in place), and which all require a level surface for safe operation.
>
> To address these conditions, three different design options are being considered as part of the Proposed Action within Line Mile 19. Under each of the options, the existing four structures would be removed and replaced with new structures. Differences in the design options would include access road configuration, structure type, and construction methods. This section describes each of the three options.

Line Mile 19 Option 1

The first and second paragraphs in this subsection (page 2-32) have been revised as follows:

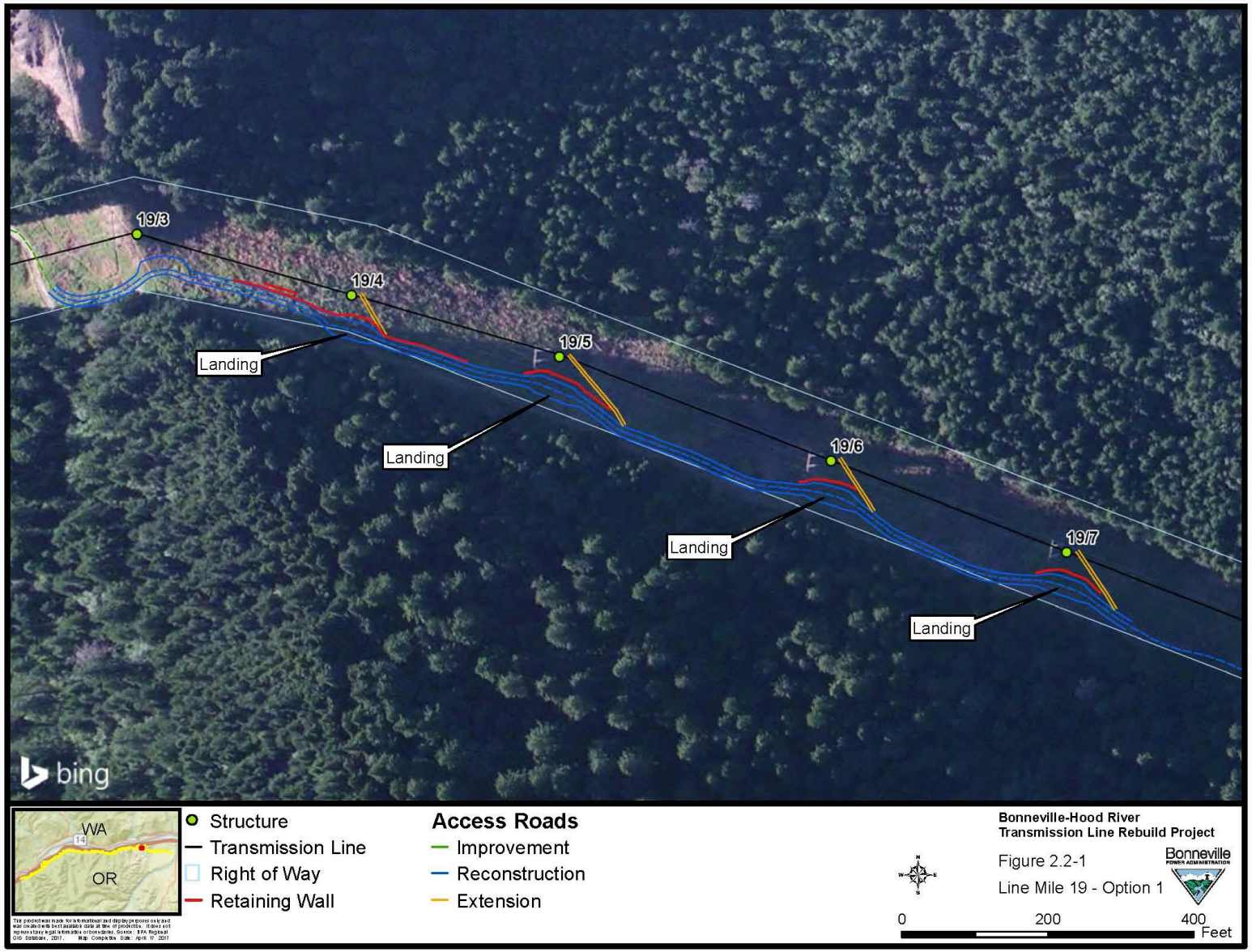
> Under Line Mile 19 Option 1, four steel monopoles would be directly embedded into the ground (i.e. ~~the existing structure would be removed and the new~~ a hole would be augured for each pole to the appropriate depth into which the new pole would be placed) (see Section 2.1.3, *Replacement of Transmission Structures*). Each of the four new structures would be located about 15 feet upslope from where the existing structures are located, to bring the new structures closer to the existing access road along the south edge of the transmission line easement.
>
> Under Line Mile 19 Option 1, BPA would reconstruct about 1,500 feet of the existing access road. BPA would regrade the existing road to level it out and to provide a uniform downhill slope from west to east. BPA also would widen the road by about 4 feet to provide a single, standard 14-foot wide travel lane. The finished road would be surfaced with a 4-inch depth of crushed rock surfacing aggregate, and downslope fills would be at maximum slopes of 1.5H:1V. Under this option, the road would be widened into the existing cut slope where cuts of less than 10 feet are feasible, minimizing the need for fill-side retaining walls. On each side of the first landing at structure 19/4 near the summit, where cut slope widening is impractical and a fill would not catch on existing steep slopes, fill-side (downslope side) retaining walls up to 5 feet high for a total distance of 100 feet would be required. These walls would be constructed with similar materials (Mechanically Stabilized Earth [MSE]) as described for the landings below.
>
> In addition to this road reconstruction, four landings would be constructed ~~using a portion of the existing access road~~ along the road at points near the four transmission structures at Line Mile 19. ~~to allow a bucket truck to be staged in a manner that construction and future maintenance crews could access the structure arms, conductor, and hardware~~. ~~The existing access road would be graded to provide a uniform slope between landings. Due to the steep topography in the area, several MSE retaining walls would be installed on the downslope side of the access road and landings.~~ These landings are necessary to allow BPA maintenance and construction equipment to physically reach the new structures from the access road. In addition, these landings would provide a safe workspace around maintenance vehicles where crews can temporarily stage materials and equipment. Each of the four landings would be about 80 feet in length and would taper out from the downslope edge of the reconstructed access road to a maximum width of 25 feet (i.e., 11 feet beyond the edge of the 14-foot wide reconstructed road) and then taper back to the road.
>
> Each landing would be supported on its downslope side by an MSE retaining wall with "black wire" (non-galvanized) welded wire gabion facing material. Like the landings themselves, each retaining wall would taper at its ends (i.e., shortest where landings begin and end, and tallest at a point where the landing is at its maximum width). The maximum height of each landing retaining wall would be as follows:
>
> - Landing near structure 19/4 – 14 ft. maximum height
> - Landing near structure 19/5 – 15 ft. maximum height
> - Landing near structure 19/6 – 9 ft. maximum height
> - Landing near structure 19/7 – 4 ft. maximum height

Each retaining wall would be constructed using typical 6-foot by 3-foot by 1.5-foot welded wire gabion baskets to build the wall, with backfill placed on the upslope side to create the landing. The gabion baskets would be stacked on top of each other to create the needed height, with each successive layer of baskets staggered (set back) a few inches so the wall would not be totally vertical. ~~The MSE~~ The outer face of the baskets (and thus the walls) would use welded, ¼-inch-thick non-galvanized wire ~~(that would rust)~~ on a three- to four-inch square grid. ~~On the upslope sides, soil nail walls would be used. The wall would have anchors drilled into the hillside on a five-inch square grid and a wire mesh would be installed as the facing. The mesh facing would be painted to match the background brown color. The MSE and soil nail walls would be up to ten feet in height.~~ Since the baskets would be non-galvanized, the wire would quickly rust (turn mottled brown and rust orange) and would therefore blend with the natural soil/rock color. Gabion baskets would be filled with local basalt rock that would also blend with the natural site background colors.

The fourth paragraph in this subsection (page 3-32) has been revised as follows:

During structure installation, an excavator would travel from the access road to each structure creating a temporary equipment access path. A helicopter would deliver each structure, and the excavator, with the assistance of a bucket truck staged on the access road and landing, would directly embed the structure. The disturbance caused by the excavator would remain after construction for future foot access to the structure. For the purposes of this analysis, it was assumed that the excavator trail would disturb an approximately 14-foot ~~feet~~ wide path during construction and about a 6-foot ~~feet~~ wide path would remain for ~~foot traffic~~ future emergency foot access to the structure. No prism or groundwork would be conducted in support of the excavator trail. Figure 2.2-1 shows the proposed access road and structure design for Line Mile 19 Option 1 between structures 19/4 and 19/7.

Figure 2.2-1 (Line Mile 19 – Option 1) has been revised so that it reflects the design changes described in the preceeding paragraphs:


19/3
19/4
19/5
19/6
19/7
Landing
Landing
Landing
Landing
bing
WA
OR
Structure
Transmission Line
Right of Way
Retaining Wall
Access Roads
Improvement
Reconstruction
Extension
Bonneville-Hood River
Transmission Line Rebuild Project
Figure 2.2-1
Line Mile 19 - Option 1
Bonneville
POWER ADMINISTRATION
0
200
400
Feet

2.5 Consultation, Review, and Permit Requirements

The following rows in Table 2.5-1 beginning on page 2-40 have been revised as follows:

Table 2.5-1. Potential Statutory, Regulatory, and Other Requirements for the Bonneville-Hood River Rebuild Project

Potentially Applicable Requirement	Relevant Project Information
Land Use	
Endangered Species Act (ESA) of 1973 16 U.S.C. § 1531 *et seq.*	In July 2016, BPA submitted a biological assessment in support of informal consultation to address potential impacts on the federally listed northern spotted owl. In an August 2016 letter, the U.S. Fish and Wildlife Service (USFWS) concurred with BPA's determination that the Proposed Action may affect, but is not likely to adversely affect northern spotted owl or northern spotted owl designated critical habitat. ~~BPA is planning to use a programmatic consultation that is in process with the National Oceanic Atmospheric Administration (NOAA) Fisheries to address effects on listed salmon.~~ There would be no effect on other ESA-listed species in the counties crossed by the project.
Oregon Fish Passage Law Oregon Revised Statutes (ORS) 509.580 - 509.910 Oregon Administrative Rules (OAR) 635, Division 412	BPA has consulted with ODFW and incorporated the ODFW biologist's recommendations to avoid and minimize potential impacts to fish resources. Two ford crossings and two pedestrian bridges would be installed or replaced in waterbodies identified as fish bearing. As a federal agency, BPA is not required to comply with state and local approvals or permits; however, BPA strives to meet or exceed these substantive standards and policies of state and local plans and programs to the maximum extent practicable. As such, BPA has prepared fish passage plans for ODFW review to ensure that the project components located in fish-bearing waterbodies do not present a fish passage issue. ODFW approved the project's fish passage plans on October 31, 2016.

Cultural and Historic Resources	
Antiquities Act of 1906 16 U.S.C. § 431-433 Historic Sites Act of 1935 16 U.S.C. § 461-467 National Historic Preservation Act (NHPA), as amended, inclusive of Section 106 16 U.S.C. § 470 *et seq.* Archaeological Data Preservation Act of 1974 (16 U.S.C. § 469 – 469-1) Archaeological Resources Protection Act of 1979, as amended 16 U.S.C. § 469 a-c Native American Graves Protection and Repatriation Act 25 U.S.C. § 3001 *et seq.* Indian Sacred Sites Executive Order 13007 American Indian Religious Freedom Act of 1978 (42 U.S.C. § 1996)	BPA identified and documented cultural resources in the project area and evaluated them for eligibility for listing in the National Register of Historic Places. BPA's compliance with these regulations is described in Section 3.12, *Cultural Resources*. BPA completed the Section 106 consultation of the National Historic Preservation Act on June 4, 2018. If previously unidentified cultural resources that would be adversely affected by the Proposed Action are found during construction, BPA would follow the procedures set out in Table 2.7-1 and in compliance with applicable regulations.

2.6 Comparison of Alternatives

The following rows in Table 2.6-1 beginning on page 2-46 have been revised as follows:

Table 2.6-1. Comparison of the Proposed Action and No Action Alternative

Purpose of Project	Proposed Action	No Action Alternative
Minimize environmental impacts	The environmental impacts (see Table 2.5-2 for a detailed comparison of impacts from the alternatives) due to rebuilding the line would be minimized by designing the Proposed Action to avoid sensitive resources, where possible, and to minimize potential adverse impacts through the mitigation measures and best management practices (BMPs) (see Table 2.7-1).	While the No Action Alternative would not have the effects of the Proposed Action over the 2018, 2019, 2020, and possibly 2021 ~~2017, 2018, 2019 and possibly 2020~~ construction seasons, over time structures would fail at increasing rates as they aged. BPA would be forced to either replace them in smaller segments or on an emergency basis. Working under emergency conditions may reduce BPA's ability to coordinate with landowners or avoid sensitive habitats (e.g., talus slopes [a slope formed by the accumulation of rock debris], streams, etc.), times of year (owl or eagle nesting season), or saturated soil conditions. Therefore, impacts on resources could be greater over time with the No Action Alternative than with the Proposed Action.

The following rows in Table 2.6-2 beginning on page 2-47 have been revised as follows:

Table 2.6-2. Comparison of the Direct and Indirect Environmental Impacts on Resources from No Action Alternative and Proposed Action

Land Use and Transportation	
Proposed Action	**Land Ownership** Underlying land ownership and surrounding land uses would not change. The Project would have **no** to **low** impacts on land ownership. **Land Use** Construction activities would temporarily disturb up to approximately 70 to 71 acres (depending on Line Mile 19 option) of land for structure replacement, access roads and trails. Structures would be replaced in the same location, if possible, and construction would be temporary, localized, and underlying land uses would not change; therefore, impacts would be **low** for land uses along the transmission line right-of-way. A total of 0.3 mile of easements or Special Use Permits for access roads would be acquired. In the context of the land uses in the two counties, and with mitigation measures applied (Table 2.7-1), the permanent and temporary impacts on land use associated with access roads would be **low** regardless of which option in line mile 19 is selected. **Transportation** The Proposed Action would result in short-term, site-specific transportation impacts from construction-generated traffic related to rebuilding the transmission line, as well as building, rebuilding, and improving access roads. Short-term impacts could be **high**, which would be reduced to **moderate** with the implementation of mitigation, in some site-specific areas from traffic congestion or delays and an increase in truck traffic. Traffic delays and disruptions to the pedestrian and bicycle network associated with lane/road closures would be temporary and would shift based on the construction schedule such that no one location would experience traffic increases or closures for more than a few days at a time. Construction activities would not close/block access to residences or businesses. **Low** long-term impacts are anticipated regardless of which option in line mile 19 is selected.
Geology and Soils	
Proposed Action	Project activities could result in soil contamination from PCP-treated poles; soil excavation from transmission line structure replacements; and soil compaction related to transmission line structure replacements, overland vehicle travel, and access road construction. Construction activities for structure replacement would temporarily disturb up to about 70 to 71 acres (depending on Line Mile 19 option), which would be revegetated or allowed to return to previous land use. An estimated ~~22~~ 20 to 20.3 acres (depending on Line Mile 19 option) would be temporarily disturbed for access road and foot trail work. By reusing structure sites and implementing design features and mitigation measures (Table 2.7-1), soil impacts would be **low**. The Proposed Action would not impact geological resources, and the likelihood of the project area to be affected by geologic hazards is **low**.
Vegetation	
Proposed Action	Construction activities would directly affect vegetation through vegetation removal and crushing. Permanent impacts would occur where the site would be modified so that it no longer supported vegetation, or where native plant communities would be permanently altered as a result of activities. Construction would temporarily remove or crush up to about 70 to 71 acres of vegetation. Up to ~~0.4~~ 0.5 acre of vegetation would be permanently removed to allow for project access. Impacts to general vegetation would be **low**. Some of these impacts would occur in sensitive habitats where the Proposed Action could temporarily affect a sensitive habitat present in the project area which could translate into a long-term loss of sensitive plants if reseeding is not effective in re-establishing high-quality native plant communities. With implementation of mitigation measures (Table 2.7-1) and allowing vegetation to recolonize disturbed areas impacts to special-status plants would be **low** levels for all Line Mile 19 Options. Impacts from the potential spread of noxious weeds would be **low** because noxious weed infestations already exist throughout the transmission line and BPA would implement mitigation measures (Table 2.7-1) to prevent further spread of weeds; therefore, the Proposed Action would not be expected to cause a major effect on the productivity of adjacent vegetation communities through noxious weed invasion.

Wetlands and Floodplains	
No Action	Because there are no delineated wetlands at structure locations and ~~small wetlands~~ the area of wetlands near access road stream crossings is small, implementation of the No Action Alternative would likely have **no** to **low** impact on wetlands. The timing of emergency repairs would not be preplanned, and construction work required during the wet season may result in an increased potential to impact wetlands through runoff from construction sites if work occurs during inundated, saturated, or unstable soil conditions. One existing structure, near the end of line mile 23, is within the 100-year floodplain of Indian Creek. This structure has been recently replaced and would not likely require emergency maintenance in the near future. Overall, the No Action Alternative would have **no** to **low** impacts on wetlands and floodplains, depending on where emergency or maintenance work occurred.

2.7 Mitigation Measures

The following rows in Table 2.7-1 beginning on page 2-55 have been revised as follows:

Table 2.7-1. Potential Mitigation Measures

Measure	Land Use and Transportation	Recreation	Geology and Soils	Vegetation	Waterways and Water Quality	Wetland and Floodplains	Fish and Wildlife	Visual Quality	Air Quality and Greenhouse Gases	Socioeconomics and Public Services	Cultural Resources	Noise, Public Health and Safety
Develop a SWPPP that requires the use of erosion control BMPs, such as silt fencing, wood chip wattles, mulching, and revegetation, before and during ground-disturbing activities as much as practical to limit erosion off site and into sensitive areas (i.e., wetlands, riparian areas, culturally sensitive areas, streams) and the spread of noxious weeds.	•		•	•	•	•	•					

Delineate construction limits within 100 feet of streams or use the National Scenic Area buffer width, whichever is greater. Delineate with a sediment fence, straw wattles, or a similarly approved method to eliminate sediment discharge into waterways. Leave erosion and sediment control devices in place until all disturbed sites are revegetated and erosion potential has returned to pre-project conditions.	•		•	•	•	•	•					
Conduct peak construction activities during the dry season, as much as possible, to minimize erosion and soil compaction. Do not conduct construction activities in unstable soil conditions, such as during or after a large rain or snowmelt event.			•		•	•	•					
Locate material storage and temporary staging areas in flat, previously disturbed, or graveled sites outside of sensitive areas (i.e., wetlands, riparian areas and reserves, culturally sensitive areas, streams) to minimize soil and vegetation disturbance, where practicable.			•		•							
Minimize the construction area to the extent practicable within native plant communities and sensitive habitats and riparian areas.				•		•	•					

~~Avoid removing Oregon white oak trees to the extent possible. For each mature tree removed, replant at 1:10 ratio. Replanted trees would be in 5-gallon containers at a minimum~~. Although no removal of Oregon white oak trees is proposed or anticipated at this time, should Oregon white oak require removal, work with the landowner or land manager and ODFW to determine appropriate replanting requirements.				•			•					
Retain and stockpile, as practicable, trees on U.S. Forest Service land that are ≥18" DBH at 30-foot lengths or greater.				•			•					
Avoid siting new structures and access roads within 100 feet of surface waters, or outside National Scenic Area waterbody buffers, or Riparian Reserves on National Forest System lands whichever is greater during the design process, where possible. Where this is not possible, restrict structure workspaces to 50 feet by 50 feet per structure to the extent possible.	•	•	•	•	•	•						
Revegetate and recontour disturbed areas in stream buffers following specific revegetation guidelines in permits; reseed pastures with an appropriate seed mix, as			•	•	•		•	•				

Restrict vehicle refueling and servicing to locations a minimum of 100 feet away from natural or human-made drainage conveyances (e.g., ditches, catch basins, ponds, wetlands, streams, and pipes), or outside National Scenic Area waterbody buffers, or Riparian Reserves on National Forest System land, whichever is greater. ~~and use~~ Use pumps, funnels, absorbent pads, and drip pans when fueling or servicing vehicles.					•	•	•					
Avoid blasting within 1-mile of active bald eagle, peregrine falcon, or other sensitive raptor species nests during the nesting period**,** unless otherwise authorized by ODFW and/or the USFWS.							•					
If an active eagle, falcon, or other sensitive raptor nest is identified prior to construction, a 0.25-mile construction buffer from the nest for all work and 0.5-mile buffer for helicopter use would be maintained until the young have fledged, unless otherwise authorized by ODFW and/or the USFWS.							•					
Locate staging areas in previously disturbed, ~~graveled~~, or paved areas to minimize soil and vegetation disturbance where practicable.			•	•	•				•			
Prepare and implement a mitigation plan for unavoidable adverse impacts on cultural resources eligible for listing in the National Register in consultation with the State Historic Preservation Offices (SHPOs), US Forest Service, Oregon State Parks, and consulting Tribes.											•	

Chapter 3 — Affected Environment and Environmental Consequences

3.1 Land Use and Transportation

3.1.1 Affected Environment

Land Ownership

Table 3.1-1 (page 3-2) has been revised as follows:

Table 3.1-1. Land Ownership in the Project Area

Landowner Type	Transmission Line (miles)	Access Roads (miles)	Trails (miles)
Private	4.8	6.~~5~~4	0.0
Public			
Federal (U.S. Forest Service)	11.2	14.6	3.1
State (State Parks, ODFW)	5.8	6.~~8~~6	2.~~6~~5
Total	**21.9**	**27.~~9~~6**	**5.~~7~~6**

3.1.2 Environmental Consequences–Proposed Action

Land Ownership

The paragraph in the Land Ownership subsection (page 3-7) has been revised as follows:

> A total of 0.3 mile of easements or permits for existing access roads would be acquired under the Proposed Action (0.1 mile on National Forest System lands and 0.2 mile on lands owned by the State of Oregon)~~, regardless of Line Mile 19 Option~~. The length of access roads requiring easement or permit would be the same, regardless of Line Mile 19 Option. No new right-of-way easements would be needed for the transmission line. Underlying land ownership and surrounding land uses would not change; therefore, acquisition of new easements would have **no** to **low** impact on land ownership.

Land Use

Table 3.1-2 (page 3-7) has been revised as follows:

Table 3.1-2. Summary of Permanent Project Impacts on Land Use[1]

Land Use Categories	Structure Impacts (Acres)	Access Roads Extension (Acres)	Trails Extension (Acres)	Total (Acres)
Agriculture	0.0	0.0[2]	0.0	0.0
Forest	0.1	0.2 - 0.~~3~~4	0.1	~~0.3~~ 0.4 – 0.5
Developed	<0.1	0.0	0.0	<0.1
Total[3]	<0.1	0.2 - 0.~~3~~4	0.1	~~0.3~~ 0.4 – 0.5

Notes:
[1] Where only one value is shown, quantity is the same for all Line Mile 19 Options. Where quantities differ by option, a range is shown. More detail regarding impacts by option is included in the accompanying text.
[2] Routes of travel may require the orchard or vineyard clearing, but would not preclude the use of the land for other low-growing agricultural uses. Vineyard and orchard clearing may occur at up to 0.7 acre.
[3] Total reflects sum of actual values including specific values less than 0.1 acre and not the rounded numbers presented in this table.

Table 3.1-3 (page 3-8) has been revised as follows:

Table 3.1-3. Summary of Temporary Project Impacts on Land Use[1]

Land Use Categories	Structure Impacts (Acres)	Access Roads				Trails			Total (Acres)
		Extension (Acres)	Reconstruction (Acres)	Improved (Acres)	Direction of Travel – Overland (Acres)	Extension (Acres)	Reconstruction (Acres)	Improve (Acres)	
Agriculture	1.9	0.0	0.0	0.9	1.0[2]	0.0	0.0	0.0	3.8
Forest	41.4	~~0.1~~ 0.1 - 0.2	0.1 - 0.3	13.1	0.1	~~0.3~~ 0.2	~~0.9~~ 1.0	~~0.8~~ 0.6	~~56.8 - 57.0~~ 56.7 – 56.8
Developed	6.1	0.0	0.1	2.3	1.3	0.0	0.0	0.0	9.8
Total[2]	49.3	0.1 - 0.2	0.2 - 0.4	16.3	2.4	~~0.3~~2	~~0.9~~ 1.0	0.~~8~~6	~~70.4 - 70.6~~ 70.3 – 70.4

Notes:
[1] Where only one value is shown, quantity is the same for all Line Mile 19 Options. Where quantities differ by option, a range is shown. More detail regarding impacts by option is included in the accompanying text.
[2] Routes of travel may require the orchard or vineyard clearing, but would not preclude the use of the land for other low-growing agricultural uses. Vineyard and orchard clearing may occur at up to 0.7 acre.
[3] Acreages are displayed rounded to one decimal place. The total is calculated based on the original (not rounded) acreages.

Forest

The first three paragraphs in this subsection (page 3-9) have been revised as follows:

> Overall, during construction, ~~56.8 to 57~~ 56.7 to 56.8 acres of forest land (depending on Line Mile 19 Option) would be temporarily impacted by structure removal and replacement, hardware or conductor replacement, as well as access road and trail improvements and reconstruction (Table 3.1-3).
>
> Construction of structures and extension of the access road and trail system would result in permanent impacts on ~~0.3 to 0.4~~ 0.4 to 0.5 acre of forest land, depending on Line Mile 19 Option. Five structures would be moved to a new location within designated forest land, though in the existing cleared right-of-way resulting in 0.1 acre of permanent impacts from structures. Trail and access road extensions would result in a total permanent impact between ~~0.2~~ 0.3 and ~~0.4~~ 0.5 acre, depending on Line Mile 19 Option selected.
>
> Impacts to forest land would be similar between the Line Mile 19 Options. The overall project would have the least temporary (~~56.8~~ 56.7 acres) and permanent (~~0.3~~ 0.4 acre) impact to forest land uses under Line Mile 19 Option 3 as the line mile 19 access road extensions and road reconstruction would not occur. The overall project with Line Mile Options 1 and 2 would have very similar land use impacts and would deviate slightly (0.1 acre) in the quantity of access road extensions that would permanently impact the area.

Special Land Use Designations

Columbia River Gorge National Scenic Area

The second and third sentences in this subsection (page 3-10) have been revised as follows:

> Overall, between about ~~66.2~~ 66.3 and ~~66.4~~ 66.5 acres would be temporarily disturbed within the National Scenic Area, with between ~~54.2~~ 54.1 and 54.4 acres (depending on Line Mile 19 Option) of this disturbance occurring in SMA, 4.2 acres in GMA, and ~~7.8~~ 7.9 acres in Urban Areas. Between about ~~0.3~~ 0.4and ~~0.4~~ 0.5 acre (0.1 percent of the project area) of land would be permanently altered within the National Scenic Area by structures, access roads, and foot trails.

Wilderness Areas

The following sentence has been added as the last sentence of the paragraph in this subsection (page 3-10):

> No portion of the rebuild project, including the rebuilt transmission line or access roads, would be located in designated Wilderness. Further, there would be no use of helicopters over designated Wilderness.

Transportation

The third paragraph in this subsection (page 3-11) has been revised as follows:

> Construction activities may also necessitate lane or road closures near transmission line segments adjacent to or at road crossings, primarily within the Hood River area and

potentially along I-84 to provide rock fall safety during micropile installation. Traffic delays and disruptions to the pedestrian and bicycle network associated with lane/road closures would be temporary (likely spring to fall in 2018, 2019, ~~and possibly~~ 2020, and possibly 2021) and would shift based on the construction schedule such that no one location would experience traffic increases or road closures for more than a week at a time. Construction activities would not close/block access to residences or businesses.

The fifth paragraph in this subsection (page 3-11) has been revised as follows:

BPA would acquire additional permits or easements for access roads and trails. Acquisition of these permits or easements would have a **low** effect on future transportation planning in the area because most of the access roads and all of the trails already exist and provide necessary access to public or private lands.

3.2 Recreation

3.2.2 Environmental Consequences–Proposed Action

The following row in Table 3.2-2 beginning on page 3-20 has been revised as follows:

Table 3.2-2. Summary of Construction-Related Recreation Impacts

Recreation Resource	Proposed Action Activity	Impact	Rationale
U.S. Forest Service Managed Lands			
Eagle Creek Trail	Line stringing	Moderate, temporary	Over a span of up to 3 days, the trail may be temporarily closed for as little as a few minutes up to a few hours while the line is strung over the Eagle Creek canyon. Safety flaggers would be employed to stop hikers as the conductor is strung over the trail. As this trail is popular and a large number of visitors would be affected, the project would result in a **moderate** impact on recreation due to the brief periods of time the hikers would be delayed. In addition, most of the other trails in the area, including those originating at the Eagle Creek Day Use Area/Trailhead, would need to be temporarily closed during stringing in the area, requiring visitors to travel to a different area to participate in uninterrupted trail opportunities. BPA would schedule construction to occur on weekdays and work with ~~Oregon State Parks~~ the U.S. Forest Service to post announcements of trail work in advance to minimize recreation impacts.

3.3 Geology and Soils

3.3.2 Environmental Consequences

Geology

The fifth paragraph in this subsection (page 3-34) has been revised as follows:

The Line Mile 19 Options would result in a similar impacts associated with geologic hazards. The Line Mile 19 Options are located in an area with mapped landslide deposits, but as previously noted, the area would not necessarily cause problems during construction or in the future. The extension, reconstruction, and improvement of access roads and trails under the Proposed Action with Line Mile 19 Option 1 would temporarily affect ~~10.3~~ 11.1 acres and permanently affect ~~0.3~~ 0.4 acre of landslide deposits. Permanent effects would be up to ~~0.1~~ 0.2 acre less under Line Mile 19 Options 2 and 3. Temporary effects would be 0.1 acre less for Line Mile 19 Option 2 and 0.2 acre less for Line Mile 19 Option 3 as compared with Option 1. Access road work would occur on the curves or on steep slopes. These activities would be unlikely to trigger large-scale landslides (erosion is described below). Line Mile 19 Options 1 and 2 would include several MSE retaining walls to reduce the risk from geologic hazards and allow future road access to structures 19/4 through 19/7. Under Line Mile 19 Options 2 and 3, helicopters would be used to install transmission line structures and transport equipment, which would also reduce the risk of slides and erosion in that steep area with severe erosion potential.

Soils

Table 3.3-3 (page 3-35) has been revised as follows:

Table 3.3-3. Summary of Permanent Impacts by Soil Erosion Hazard[1]

Soil Erosion Hazard Rating	Structure Impacts (Acres)	Access Roads			Trails			Total(Acres)[2]
		Extension (Acres)	Reconstruction (Acres)	Improved (Acres)	Extension (Acres)	Reconstruction (Acres)	Improve (Acres)	
Not rated	<0.1	0.0	0.0	0.0	<0.1	0.0	0.0	<0.1
Slight	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moderate	<0.1	0.1	0.0	0.0	<0.1	0.0	0.0	0.1
Severe	0.0	~~0.1 – 0.3~~ 0.2 – 0.3	0.0	0.0	<0.1	0.0	0.0	~~0.1 – 0.3~~ 0.2 – 0.3
Total (Acres)[2]	<0.1	~~0.2 – 0.3~~ 0.2 – 0.4	0.0	0.0	0.1	0.0	0.0	~~0.3 – 0.4~~ 0.4 – 0.5

Table 3.3-4 (page 3-35) has been revised as follows:

Table 3.3-4. Summary of Temporary Impacts by Soil Erosion Hazard[1]

Soil Erosion Hazard Rating	Structure Impacts (Acres)	Access Roads				Trails			Total (Acres)[2]
		Extension (Acres)	Reconstruction (Acres)	Improved (Acres)	Direction of Travel – Overland (Acres)	Extension (Acres)	Reconstruction (Acres)	Improve (Acres)	
Not rated	7.2	0.0	0.0	1.6	0.0	0.1	0.1	~~0.5~~ 0.4	~~9.5~~ 9.3
Slight	0.4	0.0	0.0	0.3	1.5	0.0	0.0	0.0	2.2

Moderate	29.7	<0.1	0.1	10.5	~~0.7~~ 0.6	0.1	~~0.3~~ 0.4	0.2	~~41.7~~ 41.6
Severe	12.0	~~0.1~~ 0.1 - 0.2	0.1 - ~~0.3~~ 0.2	4.0	0.3	<0.1	~~0.4~~ 0.5	~~0.2~~ 0.0	~~17.1 - 17.3~~ 17.0 – 17.1
Total (Acres)[2]	49.3	~~0.1~~ 0.1 – 0.2	0.2 - 0.4	16.3	2.4	0.3	~~0.9~~ 1.0	~~0.8~~ 0.6	~~70.4 - 70.6~~ 70.2 – 70.5

Notes:
[1] Where only one value is shown, quantity is the same for all Line Mile 19 Options. Where quantities differ by option, the range is shown. More detail regarding impacts by option is included in the accompanying text.
[2] Total reflects sum of actual values including specific values less than 0.1 acre and not the rounded numbers presented in this table.
Source: NRCS 2014; U.S. Forest Service 1979.

The first paragraph following Table 3.3-4 (page 3-35) has been revised as follows:

> The extension of access roads and trails would result in a permanent loss of between about ~~0.3 and 0.4~~ 0.4 and 0.5 acre of soil, which are small quantities when compared to the 440.9 acres of soil in the project area (Table 3.3-3).

3.4 Vegetation

3.4.2 Environmental Consequences–Proposed Action

Vegetation Types

The first sentence of the first paragraph of this subsection (page 3-46) has been revised as follows:

> Construction of the Proposed Action would result in less than 1 acre of permanent impacts associated with long-term loss of vegetation, and ~~just less than 71~~ approximately 70 acres of temporary vegetation disturbance in the project area (Tables 3.4-4 and 3.4-5).

Table 3.4-4 (page 3-46) has been revised as follows:

Table 3.4-4. Summary of Permanent Impacts on Vegetation[1]

Resource Categories	Structure Impacts (Acres)	Access Roads Extension (Acres)	Trails Extension (Acres)	Total[3] (Acres)
Managed ROW	<0.1	~~0.1 - 0.2~~ 0.2	0.1	~~0.3~~ 0.3 – 0.4
Non-Vegetated / Developed / Agroforestry	<0.1	<0.1	<0.1	<0.1
Coniferous Forest				
Mature[2]	0.0	<0.1	<0.1	<0.1
Mid-Seral	0.0	0.0	0.0	0.0
Regenerating	0.0	0.0	0.0	0.0
Talus Slope[2,3]	0.0	0.0 - 0.1	<0.1	<0.1 - 0.1
Pasture[1]	0.0	0.0	0.0	0.0
Cliff[2]	0.0	0.0	<0.1	<0.1
Riparian Habitat[2]	0.0	0.0	<0.1	<0.1
Oak Woodland[2]	0.0	0.0	0.0	0.0
Wetland[2]	0.0	0.0	0.0	0.0
Native Grassland	0.0	0.0	0.0	0.0

Total[3]	<0.1	0.2 - 0.3	0.1	~~0.3 - 0.4~~ 0.4 – 0.5
Total Sensitive Habitats[4]	0.0	<0.1 - 0.1	<0.1	<0.1 - 0.1

Notes: ROW = right-of-way.

[1] Where only one value is shown, quantity is the same for all Line Mile 19 Options. Where quantities differ by option, a range has been provided.

[2] Habitats considered sensitive.

[3] Includes all area classified as talus slope during vegetation mapping, including areas that do not support vegetation.

[4] Acreages are displayed rounded to one decimal place. The total is calculated based on the original (not rounded) acreages.

Table 3.4-5 (page 3-47) has been revised as follows:

Table 3.4-5. Summary of Temporary Impacts on Vegetation[1]

Resource Categories	Structure Impacts (Acres)	Access Roads				Trails			Total[4] (Acres)
		Extension (Acres)	Reconstruction (Acres)	Improve (Acres)	Direction of Travel – Overland (Acres)	Extension (Acres)	Reconstruction (Acres)	Improve (Acres)	
Managed ROW	32.6	0.1	0.2	9.0	<0.1	~~0.2~~ 0.1	<0.1	0.3	~~42.4~~ 42.2
Non-Vegetated / Developed / Agroforestry	6.3	<0.1	<0.1	0.7	1.3	<0.1	<0.1	<0.1	8.4
Coniferous Forest									
Mature[2,5]	3.4	<0.1	<0.1	~~5.3~~ 5.4	0.1	<0.1	0.1	0.1	~~9.0~~ 9.2
Mid-Seral	0.1	0.0	0.0	0.2	<0.1	0.0	0.0	0.0	0.3
Regenerating	0.0	0.0	0.0	<0.1	0.0	0.0	0.0	0.0	<0.1
Talus Slope[2,3]	4.7	~~0.0 - 0.1~~ 0.0 - <0.1	0.0 - 0.1	0.5	0.0	<0.1	~~0.7~~ 0.8	~~0.3~~ 0.1	~~6.2 – 6.4~~ 6.3 – 6.4
Pasture[2]	0.0	0.0	0.0	0.3	~~1.0~~ 0.9	0.0	0.0	0.0	~~1.3~~ 1.2
Cliff[2]	1.0	0.0	0.0	<0.1	0.0	<0.1	<0.1	0.1	1.1
Riparian Habitat[2]	0.5	0.0	0.0	0.2	0.0	<0.1	0.0	0.0	0.7
Oak Woodland[2]	0.7	0.0	0.0	0.1	0.0	0.0	<0.1	<0.1	0.9
Wetland[2]	0.1	0.0	0.0	<0.1	0.0	0.0	0.0	0.0	0.1
Native Grassland	<0.1	0.0	0.0	<0.1	0.0	0.0	0.0	0.0	<0.1
Total[4]	49.3	0.1	~~0.2 - 0.4~~ 0.1 – 0.3	16.3	2.4	~~0.3~~ 0.2	~~0.9~~ 1.0	~~0.8~~ 0.6	~~70.4 – 70.6~~ 70.2 – 70.3
Total Sensitive Habitats[4]	10.4	<0.1 - 0.1	<0.0 - 0.1	~~6.4~~ 6.5	~~1.1~~ 1.0	0.1	0.9	~~0.5~~ 0.3	~~19.3 – 19.4~~ 19.2 – 19.4

Notes: ROW = right-of-way.

[1] Where only one value is shown, quantity is the same for all Line Mile 19 Options. Where quantities differ by option, a range is provided.

[2] Habitat considered sensitive.

[3] Includes all area classified as talus slope during vegetation mapping, including areas that do not support vegetation.

[4] Acreages are displayed rounded to one decimal place. The total is calculated based on the original (not rounded) acreages.

[5] Note that the value provided for "Mature" equals the combined values for "Old Growth Forest" and "Snags and Logs" provided in Table 3.8-4

Sensitive Habitats and Sensitive Plant Species

Table 3.4-7 (page 3-51) has been revised as follows:

Table 3.4-7. Permanent Vegetation Loss within 1,000 Feet of Sensitive Plant Species

Species	Structure Replacement (Acres)	Access Road Extension (Acres)	Trail Extension (Acres)	Total[1] (Acres)
Howell's reedgrass	0.0	0.0	~~0.0~~ <0.1	~~0.0~~ <0.1
Long-bearded hawkweed	<0.1	0.0 - 0.1	~~0.1~~ <0.1	~~0.2~~ <0.1 – 0.2
Multnomah bluegrass	0.0	<0.1	0.0	<0.1
Oregon coolwort	0.0	0.0	<0.1	<0.1
Western mountain kittentails	<0.1	0.0	~~0.1~~ <0.1	0.1
Total[1]	<0.1	<0.1 - 0.2	0.1	0.2 – 0.3

[1] Acreages are displayed rounded to one decimal place. The total is calculated based on the original (not rounded) acreages. Acreages reflect results of field surveys conducted in 2016 and project design refinements.

3.5 Waterways and Water Quality

3.5.1 Affected Environment

Surface Water Resources

Streams and Water Quality

The fourth paragraph of this subsection (page 3-53) has been revised as follows:

> The Columbia River is on the 303(d) list as impaired and is not within the project area, although it receives runoff from the project area via smaller tributaries. Indian Creek (line mile 23) and Harphan Creek (approximately Line Mile 11) ~~is~~ are also listed in Category 5. Indian Creek is listed with TMDLs needed for Chlorpyrifos (an insecticide) and E.coli, while Harphan Creek is listed for biological criteria (Table 3.5-1). The other streams in the project area are in Category 2 or 3, indicating that they are attaining some criteria/uses (Category 2) or that there is some potential concern or an unknown pollutant, but insufficient data exist to place the stream in another category (Category 3).

The fifth paragraph of this subsection (page 3-55) has been revised as follows:

> The Management Plan requires the following ~~that a 100-foot-wide~~ undisturbed buffers be applied to ~~preserved around~~ waterbodies and wetlands (see also Section 3.6, *Wetlands and Floodplains)* to protect and enhance waterbody functions and associated uplands ~~(Gorge Commission 2011)~~:
>
> - In lands designated as SMA in the National Scenic Area, a 200-foot-wide buffer around perennial, non-fish-bearing streams/springs and fish-bearing streams, wetlands, reservoirs/manmade ponds, and natural ponds and lakes

has been established. A 50-foot-wide buffer has been established around intermittent, non-fish-bearing streams.

- In lands designated as GMA in the National Scenic Area, a 100-foot-wide buffer around perennial, non-fish-bearing streams/springs and fish-bearing streams has been established. A 50-foot-wide buffer has been established around intermittent, non-fish-bearing streams.

Further, Riparian Reserves have been designated on National Forest System lands through the Northwest Forest Plan (USFS and BLM 1994). The Northwest Forest Plan requires the following undisturbed buffers be applied on National Forest System lands:

- 150 feet or one tree length for perennial non-fish bearing streams/springs;
- 300 feet or two tree lengths for fish-bearing streams; and
- 100 feet for intermittent, non-fish-bearing streams.

Several portions of the project area overlap both National Forest System lands and the National Scenic Area and thus contain overlapping buffers. For the purpose of this analysis, the most conservative buffer was applied.

Table 3.5-1 (page 3-55) has been revised as follows:

Table 3.5-1. Surface Waters in or near the Project Area with Impaired or Limited Water Quality Parameters

Surface Water Name	Assessment Category[1]	Pollutant[2]	Affected Uses[3]
Columbia River (RM 98 to 142)	5/303(d)	Zinc	Resident fish and aquatic life, anadromous fish passage, drinking water
Columbia River (RM 0 to 319.3)	4	Chromium	Aquatic life, human health
Indian Creek (RM 0 to 7.8)	5/303(d)	Chlorpyrifos	Aquatic life, anadromous fish passage, Salmonid fish rearing, resident fish life,
	5/303(d)	E. Coli	Not specified
Harphan Creek	5/303(d)	Biological Criteria	Aquatic life, human health

Notes: RM = river mile.
[1] Category 5 are on the 303(d) list, Category 4 do not meet water quality parameters for one or more pollutants and need a TMDL to attain applicable water quality standards.
[2] Pollutant = A pollutant or condition that may impair water quality and that has an Oregon water quality standard.
[3] Affected Use = A beneficial use protected by the water quality standard.
[4] Changes in resident biological communities of freshwater macroinvertebrates (insects, crustaceans, snails, clams, worms, mites, etc.) are a form of pollution.
Source: ODEQ 2010, ODEQ 2012.

3.5.2 Environmental Consequences–Proposed Action

Surface Water Resources

Streams and Water Quality

The second paragraph of this subsection (page 3-58) has been revised as follows:

> Overall, 1.8 acres of existing vegetation within 100 feet of streams would be temporarily disturbed from structure work during project construction (Table 3.5-2). Concerning temporary impacts associated with structure work in GMA, SMA, and Riparian Reserve buffers, the following temporary impacts would occur:
>
> - GMA Fish Bearing 100-foot buffer: less than 0.1 acre at structure 23/10;
> - GMA Intermittent Non-Fish Bearing 50-foot buffer: less than 0.1 acre at structure 4/5;
> - SMA Fish Bearing 200-foot buffer: less than 0.1 acre per structure at structures 5/8, 6/11, 11/4, 11/5, 14/5, and 19/12;
> - SMA Intermittent Non-Fish Bearing 50-foot buffer: less than 0.1 acre per structure at structures 4/5, 6/9, and 19/6;
> - SMA Perennial Non-Fish Bearing 200-foot buffer: less than 0.1 acre per structure at structures 1/7, 2/1, 10/4, and 13/4; and
> - Riparian Reserve Perennial Non-Fish Bearing 150-foot buffer: less than 0.1 acre at structure 1/7.
>
> No structures would be located within GMA Perennial Non-Fish Bearing buffers, Riparian Reserve Fish Bearing buffers, or Riparian Reserve Intermittent Non-Fish Bearing buffers, so no temporary impacts from structure work would occur in these areas.
>
> Within ~~this area~~ 100 feet of streams, up to 23 trees would be removed ~~within 100 feet of streams~~, distributed among 12 different streams. Up to four trees would be removed within 100 feet of any one stream, with only one or two trees potentially removed within 100 feet of most streams. Within GMA, SMA, and Riparian Reserve buffers, up to 26 trees would be removed. Up to five trees would be removed within GMA buffers (two in Fish Bearing buffers and three in Intermittent Non-Fish Bearing buffers). In SMA buffers, up to 21 trees would be removed (eleven in Fish Bearing buffers, four in Intermittent Non-Fish Bearing buffers, and six in Perennial Non-Fish Bearing buffers). Four of the trees in the SMA buffers that may be removed are also located in Riparian Reserve buffers (two in Intermittent Non-Fish Bearing buffers and two in Perennial Non-Fish Bearing buffers).
>
> BPA would~~, however,~~ attempt to avoid tree clearing for pulling and tensioning near streams (and all areas) to the maximum extent practical (see Table 2.7-1). Given the limited potential tree clearing, the potential tree removal, if needed, would not alter water temperatures in project area streams or be considered a significant alteration of tree cover within established buffer zones.

The eighth and ninth paragraphs of this subsection (page 3-60) have been revised as follows:

> Overall, less than 0.1 acre of permanent disturbance and 1.1 acres of temporary disturbance associated with access road and foot trail work would occur within 100 feet of streams (Table 3.5-3). Also, less than 0.1 acre of permanent disturbance would occur in SMA, GMA, or Riparian Reserve buffers. At each location where temporary disturbance would occur, only 0.1 acre or less would be disturbed. For the Proposed Action as a whole, structure, bridge, access road, and foot trail work combined would result in less than 0.1 acre of permanent disturbance and 3.0 acres of temporary disturbance within 100 feet of streams.
>
> While work would occur within 100 feet of several streams (Table 3.5-2 and Table 3.5-3), existing water quality issues are a concern only in Indian Creek and Harphan Creek (Table 3.5-1). In Indian Creek, the Proposed Action would not be a potential source of Chlorpyrifos or E.coli, the two pollutants of concern for this stream, as the Proposed Action would not include the application of herbicides (*Cholorpyrifos* source) nor produce untreated animal or human waste (E.coli source). In Harphan Creek, all in-water work would be conducted during the in-water work window to minimize potential biological effects from sedimentation. Outside of the in-water work window, construction vehicles crossing Harphan Creek would cross on a temporary vehicle bridge and would not cause in-stream disturbances that would contribute to further water quality degradation.

3.6 Wetlands and Floodplains

3.6.1 Affected Environment

Wetlands

The second paragraph of this subsection (page 3-65) has been revised as follows:

> A wetland delineation of the project area was conducted in 2014, 2015, and 2016 ~~and 2015~~. These field surveys resulted in the identification of ~~four~~ eight small ***palustrine*** and two ***riverine wetlands*** in the project area, representing about ~~0.3~~ 0.8 acre and 0.2 acre, respectively, in total area (Table 3.6-1) (Turnstone 2015a, Turnstone 2016).

The third paragraph of this subsection (page 3-65) has been revised as follows:

> A depressional temporarily flooded ***Palustrine Emergent (PEM)*** wetland (5/7-1, less than 0.1 acre) was delineated within the transmission right-of-way near existing access roads near line mile 6. A seasonal PEM wetland (10/13-1, approximately 0.2 acre) was delineated within the right-of-way near structure 10/13. A seasonal riverine flow-through wetland/stream complex representing less than 0.2 acre was delineated within the right-of-way near line mile 18 (18/5-1, 18/5-2, 18/6-3). This wetland complex is associated with an unnamed tributary to the Columbia River. A seasonally flooded/saturated depressional PEM wetland (approximately 0.1 acre) was delineated within the right-of-way near line mile 19 (19/2-1). A 2016 delineation documented four additional palustrine wetlands (21/7-1, 22/4-1, 22/5-5, and 22/5-2) within the right-of-way, representing approximately 0.4 acre. Additional

information regarding waterways in the project area is presented in Section 3.5, *Waterways and Water Quality,* and Section 3.7, *Fish*.

Table 3.6-1 (page 3-65) has been revised as follows:

Table 3.6-1. Riverine and Palustrine Wetlands Delineated within the Project Area

Wetland ID[1]	Classification	Acres in Project Area	Percent of Project Area
5/7-1	Palustrine Emergent Wetland	<0.1	<0.1
10/13-1	Palustrine Emergent Wetland	0.2	<0.1
18/5-1	Riverine Intermittent Streambed	0.1	<0.1
18/5-2	Riverine Intermittent Streambed	<0.1	<0.1
18/6-3	Palustrine Forested Wetland	<0.1	<0.1
19/2-1	Palustrine Emergent Wetland	0.1	<0.1
21/7-1	Palustrine Emergent Wetland	0.2	<0.1
22/4-1	Palustrine Scrub Shrub	<0.1	<0.1
22/5-5	Palustrine Emergent Wetland	<0.1	<0.1
22/5-2	Palustrine Emergent Wetland	0.2	<0.1
Total[2]		~~0.8~~ 1.0	~~<0.1~~ 0.2

Notes:
[1] Wetland IDs are based on the nearest structure number (e.g., 5/7) followed by a unique identifier.
[2] Totals may not match summation of column because of rounding, but are based on the actual unrounded acreage values.
Source: Turnstone 2015a,c; Turnstone 2016.

The fifth paragraph of this subsection (page 3-66) has been revised as follows:

The following buffer zone widths for wetlands in GMA ~~and waterways~~ are identified in the Management Plan (Gorge Commission 2011):

- Wetlands with forest vegetation communities (palustrine forested wetlands): 75 feet
- Wetlands with shrub vegetation communities (palustrine scrub/shrub wetlands): 100 feet
- Wetlands with herbaceous vegetation communities (PEM wetlands): 150 feet

The following buffer zone widths for wetlands in SMA are identified in the Management Plan (Gorge Commission 2011):

- All wetlands: 200 feet

- ~~Waterways: 100 feet (see Section 3.5, *Waterways and Water Quality*)~~

3.6.2 Environmental Consequences—Proposed Action

Wetlands

The second paragraph of this subsection (page 3-66) has been revised as follows:

> While no access road or foot trail extensions are proposed in wetlands, proposed access road improvements, such as water bars and drain dip installation, would occur adjacent to delineated wetlands. These access road improvements would result in minor temporary disturbance of less than 0.1 acre to adjacent wetland areas in line mile 18. ~~Less than 0.2 acre of delineated wetlands would be temporarily disturbed by project construction. Of this temporary disturbance, less than 0.1 acre of wetland would be located in the workspace associated with structure 5/8.~~ Work at structure 5/8 would not require replacement of the structure itself nor associated ground disturbance. Vehicles accessing structure 5/8 to install new conductor and hardware would ~~crush vegetation and may create soil ruts within the wetland~~ avoid the wetland, and no associated permanent or temporary impacts would occur. ~~In these areas, wetland vegetation would be crushed or removed and wetland soils would be crossed by heavy equipment that could result in soil compaction. While no access road or foot trail extensions are proposed in wetlands, proposed access road improvements, such as water bars and drain dip installation would occur adjacent to delineated wetlands. These access road improvements would result in minor temporary disturbance of less than 0.1 acre to adjacent wetland areas in line mile 18.~~

The third paragraph of this subsection (page 3-67) has been revised as follows:

> A total of ~~2~~ 3.4 acres of temporary disturbance would occur within the wetland buffers under the Proposed Action (Table 3.6-2). Of this total, ~~1.6~~ 1.8 acres would be due to replacement of structures, hardware, and/or conductor near ~~two~~ one wetland~~s~~ and ~~0.4~~ 1.6 acre would be due to access road improvement near ~~four~~ five wetlands.

Table 3.6-2 (page 3-67) has been revised as follows:

Table 3.6-2. Temporary Work Spaces in Wetland Buffers

Wetland ID[1]	Structure Impacts (Acres)	Access Roads		Total (Acres)[2]
		Improve (Acres)	Direction of Travel – Overland (Acres)	
5/7-1	1.1	0.1	0.0	1.2
10/13-1	~~0.5~~ 0.7	0.1	0.0	~~0.6~~ 0.8
18/5-1	0.0	~~0.1~~ 0.7	0.0	~~0.1~~ 0.7
18/5-2	0.0	~~<0.1~~ 0.6	0.0	~~<0.1~~ 0.6
18/6-2	0.0	0.0	<0.1	<0.1
19/2-1	0.0	0.1	0.0	0.1
Total[2]	~~1.6~~ 1.8	~~0.4~~ 1.6	<0.1	~~2.0~~ 3.4

Notes:
[1] Wetland IDs were based on the nearest structure number at the time of delineation (e.g., 5/7) followed by a unique identifier where WW indicates a waterway and a number alone indicates a wetland.
[2] Totals may not match summation of column because of rounding, but are based on the actual unrounded acreage values.
Source: Turnstone 2015a,c.

3.7 Fish

3.7.2 Environmental Consequences–Proposed Action

The third sentence of the second paragraph of this section (page 3-72) has been revised as follows:

> ~~As there would be no~~ No more than four trees would be removed from within 100 feet of any one stream, thereby not reducing ~~any single stream's 100-foot-wide buffer, there would not be a large enough reduction of~~ tree canopy to an extent that would result in a measurable increase in solar loading at any of the fish-bearing waterbodies.

Fish Special-Status Species and Habitat

Table 3.7-3 (page 3-74) has been revised as follows:

Table 3.7-3. Proposed Acreages of Temporary Impacts within 1,000 Feet of Fish-Bearing Streams

Stream	Structure Impacts (acres)	Access Roads				Trails		
		Extension (acres)	Reconstruction (acres)	Improvement (acres)	Direction of Travel – Overland (acres)	Extension (acres)	Reconstruction (acres)	Improvement (acres)
Dry Creek	2.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Eagle Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<0.1
Herman Creek	3.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Lindsey Creek	0.9	0.0	0.0	0.3	0.0	<0.1	0.1	<0.1
Perham Creek	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Starvation Creek	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Viento Creek	0.5	0.0	0.0	0.4	0.0	~~0.0~~ <0.1	0.0	~~<0.1~~ 0.0
Warren Creek	0.7	0.0	0.0	0.1	0.0	<0.1	~~<0.1~~ 0.0	0.0
Total[1]	8.3	0.0	0.0	1.6	0.0	0.1	0.1	0.1

Notes:
[1] Total reflects sum of actual values including specific values less than 0.1 acre and not the rounded numbers presented in this table.

3.8 Wildlife

3.8.1 Affected Environment

The second paragraph of this subsection (page 3-77) has been revised as follows:

> Biologists recorded wildlife habitats, including National Scenic Area priority habitats, and incidental wildlife observations during field surveys in late July and early August 2014 and from April to June of 2015 and 2016. Two-year northern spotted owl protocol surveys were also completed in 2014 and 2015 and an annual spot check was completed in 2016. American pika surveys were conducted in late spring and early summer of 2016. Red tree vole, amphibians, and mollusks surveys were conducted in late summer of 2016. All field survey protocols were reviewed by biologists from the U.S. Forest Service, State Parks, and/or USFWS (depending on target species and location).

ESA-Listed Wildlife Species

The first sentence of the third paragraph of this subsection (page 3-79) has been revised as follows:

> The species' nesting period is from March ~~15~~ 1 to September 30 (USFWS ~~2012~~ 2015).

Forest Service and National Scenic Area Sensitive Wildlife Species

The following row has been added to Table 3.8-2 (page 3-80):

Table 3.8-2. National Scenic Area Sensitive or Special-Status Wildlife Identified as Potentially Occurring in the Project Area

Common Name Scientific Name	Status	Usual Habitats in Oregon	Potential for Occurrence in the Project Area
Reptiles and Amphibians			
Coastal Tailed-frog *Ascaphus truei*	OR-SV	Cold, clear, fast moving, rocky streams in mature forest.	Present. Identified during 2016 field surveys in Harphan Creek.

The last paragraph of this subsection (page 3-82) has been revised as follows:

> Survey and Manage wildlife species with potential to occur in the project area include red tree vole (*Arborimus longicaudus*) and Larch Mountain salamander (*Plerhodon larselli*). The red tree vole is listed as a Category 'C' Survey and Manage species, where the direction is to manage known sites and conduct pre-disturbance and strategic surveys. The red tree vole is an arboreal rodent whose habitat is closely associated with mature to old growth conifer-dominated forests, especially those hosting Douglas-fir. Tree voles use the discarded resin ducts, fine branches and other materials to create a nest that is generally located within the live crown of a tree. No red tree voles were identified during 2016 field surveys. The Larch Mountain salamander is also a Forest Service Region 6 Sensitive Species and a species identified as sensitive on the National Scenic Area list of species and is described further in Table 3.8-2.

3.8.2 Environmental Consequences–Proposed Action

Table 3.8-4 (page 3-83) has been revised as follows:

Table 3.8-4. Summary of Temporary Impacts on Priority Habitats[1]

Priority Habitats	Structure Impacts (Acres)[2]	Access Roads				Trails			Total (Acres)
		Extension (Acres)	Reconstruction (Acres)	Improve (Acres)	Direction of Travel – Overland (Acres)	Extension (Acres)	Reconstruction (Acres)	Improve (Acres)	
Cliffs	1.0	0.0	0.0	<0.1	0	<0.1	<0.1	~~0.1~~ <0.1	1.1
Old-Growth Forest	3.0	<0.1	<0.1	~~5.1~~ 5.2	0.1	<0.1	0.1	0.1	~~8.4~~ 8.6
Oregon White Oak Woodland	0.7	0.0	0.0	0.1	0.0	0.0	<0.1	<0.1	~~0.9~~ 0.8
Snags and Logs	0.4	0.0	0.0	0.2	0.0	0.0	<0.1	<0.1	0.6
Pastoral	0.0	0.0	0.0	0.3	~~1.0~~ 0.9	0.0	0.0	0.0	~~1.3~~ 1.2
Riparian	0.5	0.0	0.0	0.2	0.0	<0.1	0.0	0.0	0.7
Wetlands	0.1	0.0	0.0	<0.1	0.0	0.0	0.0	0.0	<0.1
Talus	4.7	0.0 - 0.1	0.0 - 0.1	0.5	0.0	<0.1	~~0.7~~ 0.8	~~0.3~~ 0.1	~~6.2 – 6.4~~ 6.3 – 6.4
Total (Acres)[3]	10.4	<0.1 - 0.1	<0.1 - 0.1	~~6.4~~ 6.5	~~1.1~~ 1.0	0.1	0.9	~~0.5~~ 0.3	~~19.3 – 19.4~~ 19.2-19.4

Notes:

[1] Where only one value is shown, quantity is the same for all Line Mile 19 Options. Where quantities differ by option, the value range for the Line Mile 19 Options is shown. Line Mile Option 1 is the highest and Line Mile Option 3 is the lowest value.

[2] Includes conservative estimates associated with potential pulling and tensioning sites.

[3] Total reflects sum of actual values including specific values less than 0.1 acre and not the rounded numbers presented in this table.

Forest Service and National Scenic Area Special-Status Wildlife Species

The second and third paragraphs in this subsection (page 3-87) have been revised as follows:

> Although Forest Service and National Scenic Area special-status wildlife discussed in this section are presumed to be present in the project area for the purposes of this impact analysis, additional species-specific surveys for aquatic mollusks and amphibians, Larch Mountain salamander, raptor nesting, and red tree voles will be conducted during the appropriate season in 201~~6~~9 through up to 202~~0~~1 (the last construction season) to more specifically identify species presence. ~~Red tree vole, mollusks, and amphibian surveys will occur in late summer 2016. The red tree vole surveys will be conducted on National Forest System lands only, as red tree voles are not included on the National Scenic Area list of sensitive species (Table 3.8-2 and Appendix B).~~ No aquatic mollusks or red tree voles were identified during 2016 field surveys. One occurrence of a special-status amphibian (the coastal tailed-frog) was identified in Harphan Creek during 2016 field surveys. Pre-construction surveys will be conducted for Larch Mountain salamander prior to construction

in potential habitat. Due to the dynamic nature of bird nesting locations, raptor nest surveys will not be completed until the spring prior to the start of construction. Raptor nest surveys will continue annually through the end of construction.

In addition, several mitigation and minimization measures similar to those described above and some unique to the Forest Service and National Scenic Area Special-Status wildlife species would be employed to minimize potential project related impacts (Table 2.7-1). Some of these minimization measures would include using the results of pre-construction species-specific surveys to avoid and minimize project disturbance within 1,000 feet of sensitive species; relocation of some species, such as Larch Mountain salamander, coastal tailed-frog, and aquatic amphibians and mollusks, out of work areas; implementation of timing restrictions to limit impacts to breeding and reproduction; and minimizing ground disturbance and tree clearing as much as practical to limit habitat disruption. Due to the limited quantity of habitat disturbance relative to available habitat in the area potentially occupied by these special-status wildlife species combined with the mitigation measures, project-related impacts on the sensitive wildlife species are anticipated to also be **moderate** in the short-term.

3.9 Visual Quality

3.9.2 Environmental Consequences–Proposed Action

National Scenic Area

The fourth sentence of the third paragraph in this subsection (page 3-95) has been revised as follows:

> The retaining walls associated with Line Mile 19 Options 1 and 2 would be visible; ~~but since~~ however, they would be constructed in ~~natural~~ openings using locally sourced rock similar in color to the natural rock outcrops in the landscape, and would not ~~involve~~ require vegetation removal in line mile 19.~~, and would use rock with similar color to the natural rock outcrops in the landscape~~, ~~they~~ Consequently, this feature would not appear dominant in the landscape. ~~be noticeable and would be easily overlooked~~.

3.12 Cultural Resources

3.12.1 Affected Environment

The following row in Table 3.12-1 (page 3-118) has been revised as follows:

Table 3.12-1. Historic Archeological Resources Identified within the Project APE[1]

Site	Date Recorded	Type	Site Description	National Register Eligibility Determination[2]
35HR86	Previously Recorded	Site	Civilian Conservation Corps and Civilian Public Service camp	~~Unevaluated~~ Not Eligible

The following row in Table 3.12-2 (page 3-119) has been revised as follows:

Table 3.12-2. Built Resources Identified within the Project APE

Site	Date Recorded	Year Constructed	Description	National Register Eligibility Determination
Historic Columbia River Highway	Previously Recorded	1912	Highway	~~Eligible~~ Listed

3.12.2 Environmental Consequences–Proposed Action

The second paragraph on pages 3-119 and 3-120 has been updated at follows:

> With avoidance of known resources, as described further below, the project, including all Line Mile 19 Options, is not expected to affect known cultural resources, except for the Bonneville-Hood River transmission line. ~~BPA is completing their determinations of eligibility and project effects analysis in the context of NHPA Section 106 consultation. Any changes in information as a result of the NHPA Section 106 consultation process will be updated in the Final EA, as needed.~~ BPA completed the NHPA Section 106 consultation process on June 4, 2018 with consulting parties signing a Memorandum of Agreement for the project's adverse effects to the Bonneville-Hood River transmission line.

3.14 Cumulative Impacts

3.14.1 Reasonably Foreseeable Projects

The list ofproposed BPA projects on page (3-134) have been updated.

- BPA is planning four projects in the National Scenic Area in Multnomah or Hood River counties at the Bonneville-Hood River Transmission Line, Big Eddy-Troutdale Transmission Line, Wautoma-Ostrander Transmission Line, and the Bonneville Dam. The other proposed BPA transmission line projects in the National Scenic Area would occur on the north side of the Columbia River and east of The Dalles and are, therefore, not anticipated to contribute to cumulative impacts for the Proposed Action.
    - Bonneville-Hood River Transmission Line Wood Pole Replacements – This is a routine maintenance project that would include replacement of five deteriorating wood-pole structures in-kind. Poles would be placed in the same holes and all access road work would be contained within the existing road prisms. The structure replacement project is anticipated to occur in 2016. This 2016 project would occur within the project area of the Proposed Action, but the construction period would not overlap with the Proposed Action.
    - Big Eddy-Troutdale Transmission Line - This project would include ~~insulator replacement and~~ road work on the Big Eddy-Troutdale Transmission Line, which is located over 20 miles west of the Bonneville-Hood River project area near the town of Troutdale. This construction period is proposed to occur in 2020~~18~~, which would

overlap with the timeline for the Bonneville-Hood River Transmission Line Rebuild project.

- Wautoma-Ostrander Transmission Line – This project would include spacer replacement and road work along 2.4 miles of the line. The eastern terminus of the Wautoma-Ostrander Transmission Line is located at the Bonneville Powerhouse, and construction would begin in 2019~~8~~, likely overlapping with the Bonneville-Hood River Transmission Line Rebuild project.
- Bonneville Dam Powerhouse – This project would include replacement of less than 1 mile of fiber optic cable. ~~The construction period for this project has not yet been determined~~ This construction period is proposed to occur in 2019, which would overlap with the timeline for the Bonneville-Hood River Transmission Line Rebuild project.

The following bullet on page 3-134 has been deleted:

- ~~The U.S. Forest Service is analyzing the effects of the Government Flats fire on two stewardship sales in the North Fork of Mill Creek watershed, about 5 miles east of the city of Hood River. Their analysis includes an assessment in changes in road, vegetation, and fuels management, as well as changes in forest product availability on over 1,000 acres (U.S. Forest Service 2014r). All of these actions would likely affect natural resources, scenic qualities, and possibly recreational uses.~~

3.15 Consistency with Land Use Plans and Programs

3.15.2 Columbia River Gorge National Scenic Area Management Plan

Management Plan Land Use Designations

The fourth sentence of the first paragraph of this subsection (page 3-147) has been revised as follows:

> The Primary role of the U.S. Forest Service in the National Scenic Area is administering SMA lands, managing ~~71,000~~ 82,000 acres of national forest land, and determining consistency of proposed federal actions in the National Scenic Area with the Scenic Area Act and Management Plan.

Table 3.15-3 (page 3-151) has been revised as follows:

Table 3.15-3. Summary of Temporary Impacts by Land Use in the SMA[2]

Resource Categories	Structure Impacts (Acres)	Access Roads				Trails			Total (Acres)[2]
		Extension (Acres)	Reconstruction (acres)	Improve (Acres)	Direction of Travel – Overland (Acres)	Extension (Acres)	Reconstruction (Acres)	Improve (Acres)	
Open Space	28.1	~~0.1~~ 0.2	0.1 - 0.3	7.3	0.1	~~0.3~~ 0.2	~~0.9~~ 1.0	~~0.8~~ 0.6	~~37.6 – 37.9~~ **37.6 – 37.8**
Forest	10.3	<0.1	<0.1	4.1	0.0	0.0	0.0	0.0	**14.4**
Large Woodland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Small Woodland	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	**0.1**
Public Recreation	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	**0.1**
Agriculture	0.7	0.0	0.0	0.2	0.0	0.0	0.0	0.0	**1.0**
Small-Scale Agriculture	0.7	0.0	0.0	0.2	0.0	0.0	0.0	0.0	**0.9**
Total[2]	**39.8**	~~**0.1**~~ **0.2**	**0.1 – 0.3**	**12.1**	**0.1**	~~**0.3**~~ **0.2**	~~**0.9**~~ **1.0**	~~**0.8**~~ **0.6**	~~**54.2 – 54.4**~~ **54.1 – 54.4**

Notes:
[1] Where only one value is shown, quantity is the same for all Line Mile 19 Options. Where quantities differ by option, the value range for the Line Mile 19 Options is shown. Line Mile 19 Option 3 would have the smallest temporary impact while Line Mile 19 Option 1 would have the greatest reported impact.
[2] Acreages are displayed rounded to one decimal place. The total is calculated based on the original (not rounded) acreages.

Natural Resources

The second, third and fourth paragraphs of this subsection (page 3-155) have been revised as follows:

Wetlands. See Section 3.6, *Wetlands and Floodplains*, for a full description of potential project-related impacts on wetlands and associated minimization measures. ~~Up to about 0.2~~ Less than 0.1 acre of wetlands may be temporarily disturbed by structure work areas and access road improvements. No structures or new access roads or trails would be located within wetlands and there would be no permanent project impacts on wetlands. A total of ~~2~~ 3.4 acres of temporary disturbance would occur within the wetland buffers under the Proposed Action. Of this total, ~~1.6~~ 1.8 acres would be due to replacement of structures, hardware, and/or conductor near ~~two~~ one wetland~~s~~ and ~~0.4~~ 1.6 acre~~s~~ would be due to access road improvement near ~~four~~ five wetlands.

Streams, Ponds, Lakes, and Riparian Areas. See Section 3.5, *Waterways and Water Quality*, for a full description of potential project-related impacts to water resources and associated minimization measures. No structures or access road or trail extensions would be placed in waterbodies. Overall, 1.8 acres of existing vegetation within 100 feet of streams would be temporarily disturbed during project construction. Within ~~this area~~ 100 feet of streams, up to 23 trees would be removed ~~within 100 feet of streams~~, distributed among 12 different streams. Up to four trees would be removed within 100 feet of any one stream, with only

one or two trees potentially removed within 100 feet of most streams. Within GMA, SMA, and Riparian Reserve buffers, up to 26 trees would be removed. Up to five trees would be removed within GMA buffers (two in Fish Bearing buffers and three in Intermittent Non-Fish Bearing buffers). In SMA buffers, up to 21 trees would be removed (eleven in Fish Bearing buffers, four in Intermittent Non-Fish Bearing buffers, and six in Perennial Non-Fish Bearing buffers). Four of the trees in the SMA buffers that may be removed are also located in Riparian Reserve buffers (two in Intermittent Non-Fish Bearing buffers and two in Perennial Non-Fish Bearing buffers). Access road and trail improvement and reconstruction would occur within 100 feet of 25 streams. All access road improvement work would occur within already disturbed areas (e.g., the original road prism), so there would be no new permanent disturbance areas near streams. Road work would require the construction of new fords across streams in five locations, one at a tributary to Grays Creek in line mile 10, one at Harphan Creek in line mile 11, two on an unnamed tributary to the Columbia River in line mile 18, and a fifth on a tributary to Phelps Creek in line mile 20. One existing ford would be repaired at Dry Creek in line mile 5.

Wildlife Habitat. See Section 3.8, *Wildlife*, for a full description of potential project-related impacts to wildlife habitat and wildlife species. The project would temporarily disturb up to 19.4 acres of priority wildlife habitats and permanently remove up to 0.1 acre of priority wildlife habitat. Field surveys have been completed in 2014, 2015 and ~~2015~~ 2016 and will continue in ~~2016~~ 2017 through 2021~~0~~ to more specifically identify certain sensitive wildlife species such as ~~aquatic mollusks and amphibians,~~ northern spotted owls, raptor nesting, ~~red tree voles~~ Oregon slender salamander, and Larch Mountain salamander~~, and American pika~~ prior to construction. In those areas where sensitive wildlife species are found, BPA would implement mitigation measures, such as timing or work space restrictions to minimize potential impacts.

Chapter 6—References

6.1 Printed References

The following references have been added to this section as follows:

Neary, Daniel G.; Ryan, Kevin C.; DeBano, Leonard F., eds. 2005. (revised 2008). Wildland fire in ecosystems: effects of fire on soils and water. Gen. Tech. Rep. RMRS-GTR-42-vol.4. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 250 p. Available at: https://www.fs.fed.us/rm/pubs/rmrs_gtr042_4.pdf. Accessed March 2018.

Turnstone. 2016. Final Field Report: Special-status Species, Rare Plants, and American Pika Surveys for the Bonneville-Hood River Transmission Line Rebuild Project. December 2016.

U.S. Fish and Wildlife Service (USFWS). 2015. Statewide Programmatic Consultation for Washington State Department of Transportation: July 2, 2015. USFWS Reference: 01EWFW00-2014-F-0286, 01EWFW00-2014-FC-0287. Washington Fish and Wildlife Office, Lacey, Washington.

US Forest Service 2018. Fire Management: Ongoing Response Work After the Fire. https://www.fs.usda.gov/detailfull/crgnsa/fire/?cid=fseprd569570&width=full. Accessed May 2018.

US Forest Service. 2017a. Eagle Creek Fire: At-a-Glance Facts. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd565120.pdf. Published Nov. 30, 2017. Accessed March 2018.

US Forest Service. 2017b. Eagle Creek Burned Area Emergency Response (BAER): Soil Burn Severity Map. https://inciweb.nwcg.gov/photos/ORCGF/2017-09-03-1149-Eagle-Creek/picts/2017_10_04-19.43.14.983-CDT.pdf. Published Oct. 4, 2017. Accessed March 2018.

U.S. Environmental Protection Agency (EPA). 2012. Water Quality Assessment Database. Oregon's 2012 Integrated Report: Water Bodies added to the 303d list in 2012. Available at: http://www.deq.state.or.us/wq/assessment/rpt2012/results303dnew12.asp. Accessed December 2016.

Appendix A: Detailed Project Mapping

Certain maps contained in Appendix A of the Draft EA have been updated to depict slight refinements that have been made in the access road and trail plan.

Appendix C: Visual Resource Analysis

C.3 Affected Environment

C.3.1 Determination of Affected KVAs

Dog Mountain KVA

The second paragraph of this subsection (page C-8) has been revised as follows:

> From the top of the Dog Mountain KVA, the right-of-way is visually dominant where it passes through forested areas, about 2 miles away, but structures are not visually evident because of the distance (Figures C-10 and C-11). The right-of-way is a dark linear feature visible for some distance both to the west and east.

C.4 Environmental Consequences – Proposed Action

Road Construction and Improvements

The second paragraph of this subsection (page C-10) have been revised as follows:

> Line Mile 19 Options 1 through 3 have different proposed access road designs between structures 19/3 and 19/7 that would result in minor differences in visual impacts. Within Line Mile 19, ~~six~~ four retaining walls are proposed for Line Mile 19 Options 1 and 2 between structures 19/3 and 19/7. The tallest retaining wall would be ~~16~~ 15 feet at its tallest point, and the longest would be approximately ~~500~~ 300 feet long. The retaining walls would be situated immediately adjacent, ~~above or~~ below, the access road in areas already free of vegetation due to steep slopes. Retaining walls would be brown to grey in color and would blend with the surrounding exposed rock, appearing consistent with natural openings in the vegetation. The color of the retaining walls may appear brighter than the natural un-vegetated areas the first few years after construction, but would fade with time, such that they would easily be overlooked by viewers and appear consistent with the existing condition (See Figures C-22 through C-24). Additionally, the access road would be tucked along the southern edge of the right-of-way, which would take advantage of the surrounding vegetation to provide screening and blending of the access road and associated retaining walls. The texture of the retaining walls would appear somewhat rough and granular from the KVAs, and be consistent with the natural outcrops of the surrounding natural landscape, which appear as horizontal, diagonal, and sometimes vertical lines and irregular shapes along the hillside. The additional equipment trails to structures 19/4 through 19/7 associated with Line Mile 19 Option 1 would add some additional visual disturbance from vegetation disturbance, but wouldrecover upon completion of construction.

Visual Simulations

Simulation 2: Pacific Crest Trail

The paragraph in this subsection (page C-11) has been revised as follows:

> ~~A comparison of existing and simulated conditions shows that new wooden structures are nearly identical to existing structures and thus have no appreciable visual impact from the structures~~ The structure at the trail crossing would be replaced in kind with a 3-pole wood H-frame structure and would appear large in scale and dominant from this vantage point. From this point on the trail, the simulation demonstrates the closest structure in the foreground (structure 5/3) would remain as-built, as this structure would not be replaced. The two structures further east of the project trail crossing would each have one of the existing poles replaced, thereby maintaining their existing character. Collectively, the structure work in this area would appear similar in form and stature to existing structures, thereby resulting in minimal change from existing conditions (Figures C-14 and C-15). ~~However, road~~ Road improvement and ground disturbance within the existing ROW ~~would~~ could create a moderate-strong temporary visual contrast that would create new impacts that may last up to 5 years, or until vegetation recovery is advanced. Ground disturbance areas would be ~~revegetation~~ revegetated and, if needed, the road surface would be treated with Permeon or a similar colorant to conform the road bed to more natural background colors. Following re-establishment of vegetation surrounding the access roads, visual contrast is expected to be reduced to levels similar to pre-project conditions with a weak-moderate level of visual contrast, as shrubs would obscure roadway edges. Further, the visual simulation depicts the road visibility during the fall leaf-off period; access road visibility would be expected to decrease as the shrub layer grows and foliage returns during the spring/summer season when the trail has the greatest level of use. The Proposed Action is not expected to be visible from additional locations along the Pacific Crest Trail because of heavy vegetation screening along the trail.

Simulation 3: Starvation Creek/I-84

The paragraph in this subsection (page C-11) has been revised as follows:

> A comparison of existing and simulated conditions shows the retirement of two structures and the rebuild of one existing H-frame structure ~~that the new~~ as a weatherizing steel monopole~~s~~. The new monopole would ~~have slightly lower visual contrast as compared to the existing galvanized steel lattice structures when viewed against the hillside (Figures C-16 and C-17. The weatherized steel monopole structure would~~ stand out slightly more than the existing galvanized structure when viewed against the skyline. Due to the viewer distance, the weatherizing steel structure is not expected to dominate the view. Road improvement or vegetation clearings would be noticeable from this viewpoint, but would be located in the same location as the existing access road.

Simulation 4: Historic Columbia River Highway at Viento State Park

The paragraph in this subsection (page C-11) has been revised as follows:

> A comparison of existing and simulated conditions shows the existing steel H-frame in the foreground would be removed, and therefore would eliminate the existing visual impacts caused by this structure ~~that the new weatherized steel monopoles would have slightly lower visual~~

~~contrast when viewed against the land as compared to the existing galvanized steel lattice structures, thus reducing visual impacts~~ (Figures C-18 and C-19). ~~However,~~ Structure 16/1 would be replaced with a ~~the~~ weatherizing steel structure that would ~~be viewed against the~~ appear skylined and ~~would be~~ more visually apparent than the existing structure. Proposed road improvement work would accentuate the curvilinear form of the cleared roadway, ~~which further pronounces its~~ which contributes to visual impacts from project-related features ~~that reduces scenic quality at this location~~, and fails to be visually subordinate. Few other areas along the Historic Columbia River Highway are expected to be impacted by the Proposed Action in a similar manner.

Simulation 5: SR14 at Drano Lake

The paragraph in this subsection (page C-12) has been revised as follows:

The visual simulation demonstrates the removal (retirement) of structure 18/6 and a wooden 2-pole H-frame that would replace an existing steel lattice H-frame (18/7). Given the removal of one structure and the replacement of the other with a structure type that is more consistent with the line and color of the surrounding forest vegetation, the project is expected to result in ~~A comparison of existing and simulated conditions shows that new wooden structures are nearly identical to existing ones and thus have~~ no appreciable visual impact (Figures C-20 and C-21). Vegetation clearing and road improvements are not noticeable from this viewpoint. However, other areas along SR 14 may be more visually exposed to elements of the Proposed Action, including roads and vegetation clearing.

Simulation 6a: I-84 at Mitchell Point – Line Mile 19 Option 1

The paragraph in this subsection (page C-12) has been revised as follows:

Simulations were produced from a photograph taken at an I-84 frontage road, approximately 0.5 mile northeast of Line Mile 19 Options ~~1,~~. This location is considered ~~representing~~ representative of views from the I-84 KVA in the only short segment of I-84 where Line Mile 19 would be visible. ~~A comparison of existing and simulated conditions shows that the new weatherized steel monopoles would have slightly lower visual contrast as compared to the existing galvanized steel lattice structures.~~ The simulations demonstrate potential visibility of the replacement structures using a weatherizing steel finish. Under the simulated conditions, the structures would result in weak visual contrast, as the dark shadow cast on the steep slope causes the structures to blend with the existing landscape. The structures appear consistent with the existing vertical lines of trees in the area. As the steel ages, it is expected to further blend with the colors of the landscape. During certain periods of the day, the sun is expected to shine on this portion of the project, thereby increasing visibility of the structures and associated access road. The monopoles would introduce moderate contrast against the existing landscape; however, the structures would remain consistent in form and line to the surrounding trees. Visual impacts of the structures would not be different from that experience under current conditions.

The retaining walls would introduce weak-moderate visual contrast, largely due to the horizontal line created by the access road. Though ~~be~~ visible, ~~but since~~ they would be constructed ~~in natural openings in the vegetation and would use~~ using locally sourced rock and treated with Permeon if needed that would be ~~with~~ similar in color to the natural rock outcrops in the

landscape~~, thereby~~ would ~~minimizing~~ minimize visual contrast of this feature ~~they would not be noticeable and would be easily overlooked~~. The cleared right-of-way would continue to be the most noticeable aspect of the transmission line in this area~~,~~. ~~and since~~ There would be no additional vegetation clearing in this area under the Proposed Action with Line Mile 19 Option 1~~,~~; therefore, the landscape would appear ~~nearly the same as under~~ similar to existing conditions. There are no turn offs or exits along the stretch of I-84 where Line Mile 19 Option 1 is located, so viewers would be traveling at highway speeds when this portion of the project would be visible and; in addition, views from I-84 of the project area are intermittent due to dense vegetation along the I-84 corridor. Therefore, viewers on I-84 would have intermittent, short duration views of Line Mile 19 Option 1, further diminishing noticeable visual changes to the landscape from the I-84 KVA.

C.5 Representative Photos and Photosimulations

The following changes have been made to ~~five~~ seven of the photosimulations included in this section of Appendix C (revised photosimulations immediately follow this summary of changes):

Figure C-15. The photosimulation has been revised to:

- Render structure 5/3 as-built, as this structure is not proposed for replacement under the Proposed Action. The simulation presented in the Draft EA showed these structures as a new structure (full rebuild).
- Render structures 5/4 and 5/5 as single pole replacements, as these structures are not proposed for full rebuild under the Proposed Action. The simulation presented in the Draft EA showed these structures as new structures (full rebuild).
- Render the proposed access road with darker coloration more demonstrative of anticipated appearance of locally sourced rock, and the potential application of Permeon color treatment.

Figure C-17. The photosimulation has been revised to remove structures 15/4 and 15/6 as these structures are scheduled for retirement under the Proposed Action. The Draft EA included these structures as full rebuilds, depicted as monopoles with weathering steel finish.

Figure C-19. The photosimulation has been revised to:

- Remove structure 16/2 as this structure is scheduled for retirement under the Proposed Action. The Draft EA included this structure as a full rebuild, depicted as a monopole with weathering steel finish.
- Render the proposed access road with darker coloration more demonstrative of anticipated appearance of locally sourced rock, and the potential application of Permeon color treatment.

Figure C-21. The photosimulation has been revised to remove structure 18/6 as this structure is scheduled for retirement under the Proposed Action. The Draft EA included this structure as an H-frame.

Figure C-22. This figure includes a new photograph of Line Mile 19 under direct sunlight conditions; the right-of-way in the previous photo was obscured by shadows.

Figure C-23. This photosimulation of Line Mile 19 Option 1 has been revised to include the new base photograph in Figure C-22. The new photosimulation has a lighten hillslope to better assess potential visibility of new structures and road improvements.

Figure C-25. This photosimulation of Line Mile 19 Option 3 has been revised to include the new base photograph in Figure C-22. The new photosimulation has a lighten hillslope to better assess potential visibility of new structures and road improvements.

In addition, Figures C-26 through C-28 have been added to Appendix C to show representative views of post-fire conditions along the transmission line righ-of-way he (additional figures immediately follow the revised photosimulations referenced above):

Figure C-15. Photosimulation of the Proposed Action Looking East Along the Transmission Line at the Location Where the Pacific Crest Trail (a KVA) Crosses the Right-of-Way in Line Mile 5

Figure C-17. Photosimulation of the Proposed Action Looking Southeast from the Starvation Creek Parking Area in Line Mile 15

Figure C-19. Photosimulation of the Proposed Action Looking West along the Transmission Line from near Viento State Park in Line Mile 16

Figure C-21. Photosimulation of the Proposed Action Looking South from the Drano Lake Boat Launch and Parking Area on the North Side of the Columbia River (along the SR 14 KVA) at the Right-of-Way in Line Mile 18

Figure C-23. Existing Conditions Looking South from Mitchell Point Drive (Just south of the I-84 KVA) toward the Right-of-Way in Line Mile 19.

Figure C-23. Photosimulation of the Proposed Action with Line Mile 19 Option 1 looking South from Mitchell Point Drive (Just south of the I-84 KVA) toward the Right-of-Way in Line Mile 19

Figure C-25. Photosimulation of the Proposed Action with Line Mile 19 Option 3 looking South from Mitchell Point Drive (Just south of the I-84 KVA) toward the Right-of-Way in Line Mile 19

Figure C-26. View to East Showing Post-fire Conditions in Line Mile 2 of Right-of-Way.

Figure C-27. View to West Showing Post-fire Conditions in Line Mile 7 of Right-of-Way.

Figure C-28. View to West Showing Post-fire Conditions in Line Mile 12 of Right-of-Way.

Comments Received on Draft EA and BPA's Responses

To solicit comments on the Draft EA, a notice of its availability or a copy of the Draft EA was e-mailed or mailed to 263 individuals, organizations, tribes, and government agencies. In addition, BPA posted the Draft EA on the project website. The comment period ran from September 29 through October 31, 2016, and 10 comment letters were received.

Comment letters were numbered consecutively as they were received, as shown below (breaks in the number sequence are the result of comment letters that were subsequently deleted because they were submitted in error or determined to be SPAM). In each comment letter, individual comments have also been numbered. In some instances, the comments were further subdivided by subject, and each subject was responded to individually. Comment letter numbers and the associated author and affiliation are summarized below. The comments contained in these letters are then reproduced by comment letter, with responses to each letter's comments immediately following.

Comment Number	Commenter
BonHR16160004	Michael Cerbone, AICP; Multnomah County Department of Community Services, Land Use Planning Division
BonHR16160005	Zimmerman; City of Cascade Locks
BonHR16160006	Hartman; Oregon Department of State Lands
BonHR16160007	Behling; Oregon Department of Forestry
BonHR16160008	McCoy; Friends of the Columbia Gorge
BonHR16160009	Hiseler
BonHR16160010	Pacific Crest Trail Association
BonHR16160011	Worth
BonHR16160012	Mbabaliye; U.S. Environmental Protection Agency
BonHR16160013	Shoal; U.S. Forest Service

Comment BonHR16160004: Multnomah County Department of Community Services

0004-1 Thank you for the opportunity to comment on the proposed project. I offer the following suggestions for the project as well as some comments regarding outreach for future projects. As you know the proposed project is located within the Columbia River Gorge National Scenic Area (NSA). Several of the aspects of the proposed project are appreciated including the attempt to limit vegetation removal, replacement of steel structures with wooden structures and replacement of steel structures with smaller less visually obtrusive steel structures. I offer the following recommendations concerning temporary and permanent impacts to vegetation within the construction corridor.

1. Mitigation of the removal of Oregon White Oaks is proposed at a 10:1 ratio with five (5) gallon trees. I suggest using minimum two (2) inch caliper trees instead as this will assure the actual tree is established at a known rate, rather than a tree planted in a specific container size.

0004-2 I was unable to locate what the mitigation ratio was for other trees and shrubs removed from the project. I would suggest the following considerations:

a. For shrubs and ground cover I would suggest that plantings be required at a rate equal to 1.5 of the area disturbed. In areas where the mitigation is not feasible due to loss of area require enhancement of existing areas equal to a minimum of three (3) times the area disturbed.

b. For trees that are removed I would suggest that a minimum 2" caliper trees be planted for deciduous and six (6) foot tall trees be planted for coniferous mitigation. Both trees should be replaced at a minimum of 10 trees per each tree removed. Or consider mitigation based upon diameter inch, i.e. if a 20 inch tree is removed you could plant ten (10) 2" caliper trees.

0004-3 For all plantings required for mitigation I offer the following comments.

a. I would suggest requiring establishment of mitigation trees to be guaranteed by your contractor for five (5) years to ensure that trees have sufficiently taken and will be successful.

b. I would suggest limiting the mortality of all plantings to 10%, i.e. one out of each ten (10) plants can die without replacement.

c. I would suggest that any enhancement activities or revegetation activities within the NSA be designed so that the planting at maturity works to visually obscure the proposed improvements as viewed by the Key Viewing Areas within the NSA.

0004-4 For future projects I would suggest providing more notice than what was provided. A minimum of three weeks prior to the meeting will ensure that the notice you send to jurisdiction will have adequate time to filter through the organization and arrive at the appropriate department. I am writing these comments to you on October 26, 2016, having just received the notice that was sent to the County. Please do not hesitate to contact me if you would like to discuss my proposal in more detail.

Response to Comment BonHR16160004: Multnomah County Department of Community Services

0004-1 Your suggestion has been noted. At this time, no removal of Oregon white oak trees is proposed or anticipated; however, if removal of Oregon white oak trees is required, BPA would work with the US Forest Service, state parks, and ODFW to determine the appropriate replanting technique.

0004-2 Your suggestion has been noted. As discussed in Section 3.4.2 of the EA, the rebuild project would temporarily impact approximately 70 acres of vegetation and would permanently impact 0.5 acres or less of vegetation. These small quantities would be removed in various locations spread along the right-of-way and access roads. As discussed in Chapter 2 of the EA, BPA would revegetate temporarily disturbed areas. For both temporarily and permanently disturbed areas, BPA would work with the appropriate landowner or land manager to determine the appropriate mitigation approaches and ratios for vegetation removal as necessary.

0004-3 Comment noted. See response 0004-2.

0004-4 Comment noted. When scheduling public meetings for draft NEPA documents, BPA makes every effort to send notice of the meeting sufficiently in advance of the meeting. In the case of the public meeting for the Draft EA for this project, BPA sent the meeting notice approximately two weeks in advance of the public meeting. We regret that it did not reach you until after the meeting, but be assured that the comments you have submitted have been received and are being considered.

Comment BonHR16160005: City of Cascade Locks

0005-1 The City of Cascade Locks approves this project and is grateful for BPA's careful process with all stakeholders and resources.

Response to Comment BonHR16160005: City of Cascade Locks

0005-1 Comment noted.

Comment BonHR01010006: Oregon Department of State Lands

0006-1 The Department of State Lands (DSL) regulates removal and fill in waters of the state.

If a state removal/fill permit is required, the applicant will be required to perform an alternatives analysis that includes at a minimum: 1) explanation describing how impacts to water of the state are being avoided and minimized on the project site, 2) project specific criteria necessary to achieve the state project purpose, 3) a range of alternative sites and designs that were considered that minimized impacts to waters of the state, 4) evaluates each alternative site and design against the project criteria with reasons why alternatives weren't practicable.

0006-2 A removal-fill permit will be required for this project if it involves more than 50 cubic yards of removal-fill activity in state-jurisdictional wetlands or waterways or for any amount of removal-fill activity in state-designated essential salmonid habitat (ESH). More information on ESH areas can be

found here: http://www.Oregon.gov/dsl/PERMITS/Pages/esshabitat.aspx. In addition, a DSL concurred wetland delineation will be required prior to project implementation.

Response to Comment BonHR16160006: Oregon Department of State Lands

0006-1 Comment noted. As discussed in Sections 3.5 and 3.6 of the EA, very little work related to the proposed project would occur in project area waterways and wetlands, and BPA would generally seek to avoid and minimize this work to the extent practicable. For work within any jurisdictional wetlands and waterways, BPA would obtain appropriate state and federal permits prior to construction. BPA is currently coordinating with the Oregon Department of State Lands (DSL) concerning delineation review and approval, and will submit a Joint Permit Application (JPA) as appropriate. The JPA would contain the necessary information to support appropriate DSL and U.S. Army Corps of Engineers wetland and waterbody permitting.

0006-2 See response 0006-1.

Comment BonHR16160007: Oregon Department of Forestry

0007-1 Our agency will most likely require a power-driven machinery permit when the activities utilize large equipment during fire season. Please call to discuss what fire prevention equipment, tools, water, etc. will be required for this operation.

Response to Comment BonHR16160007: Oregon Department of Forestry

0007-1 As discussed, in Section 3.11.2 of the EA, BPA's construction crews and contractors would coordinate with local and state agencies responsible for fire protection, and would implement all identified fire protection measures to ensure adequate fire protection during construction. This would include requiring that project contractors obtain appropriate construction permits, including, potentially, a power-driven machinery permit from the Oregon Department of Forestry, as well as supplying a project safety plan that would outline, among other things, fire prevention measures (see Table 2.7-1 of the EA).

Comment BonHR16160008: Friends of the Columbia Gorge

0008-1 Friends of the Columbia Gorge (Friends) has reviewed and submits these comments on the proposed Bonneville-Hood River transmission line rebuild. Friends is a nonprofit organization with approximately 6,000 members dedicated to protecting and enhancing the resources of the Columbia River Gorge. Our membership includes hundreds of citizens who reside within the Columbia River Gorge National Scenic Area.

We would like to thank BPA for taking our April 21, 2014, comments into account when preparing the Environmental Assessment (EA). The Bonneville-Hood River transmission line crosses through the heart of the Columbia River Gorge. The transmission line traverses 20 miles of land designated as Special Management Areas Open Space, which is reserved for the most sensitive landscapes, rich with scenic, natural, recreational, and cultural resources. The replacement of the transmission line will result in new direct impacts to these highly sensitive lands and must be carefully planned to

avoid significant adverse impacts to the National Scenic Area and resources. This project provides an opportunity to mitigate for the direct, indirect, and cumulative adverse impacts from existing structures.

0008-2 The Management Plan for the Columbia River Gorge National Scenic Area ("Management Plan") provides several guidelines for the maintenance and modification of BPA transmission facilities including:

- Encourage the Bonneville Power Administration to use colors that are visually subordinate on its existing facilities seen from scenic travel corridors. Management Plan at I-1-31.
- Encourage the Bonneville Power Administration to improve the visual quality of powerline rights-of-way by restoring vegetation to its natural appearance wherever possible. Management Plan at I-1-31.
- Encourage the railroads and utilities to place signal wires and powerlines underground where they are visually dominant and detract from the visual quality of the landscape. Management Plan at II-3-3.
- Encourage the use of visually subordinate colors on existing equipment. Management Plan at II-3-3.
- Encourage improvement of existing rights-of-way by restoring vegetation to its natural appearance. Management Plan at II-3-3.
- Encourage the use of integrated practices in managing vegetation in the foreground of scenic travel corridors. Management Plan at II-3-3.

0008-3 To this end, the proposed transmission line rebuild provides an opportunity to mitigate several ongoing adverse impacts from the existing transmission line:

- Reduce and/or mitigate scenic impacts by installing new structures that would be less visually discordant in the landscape. Where steel towers are needed, we ask that weathering steel be employed to reduce visibility.

0008-4

- The project should include a robust invasive species eradication and restoration strategy. The BPA transmission line corridor is frequently infested with invasive plants, such as Armenian blackberry. While replacing structures, BPA should remove invasive plants and restore native vegetation communities that would be compatible with long-term vegetation management requirements.

0008-5

- BPA should also thoroughly document existing native vegetation communities and determine the need for future vegetation management. BPA's past vegetation removal efforts have removed vegetation that poses no threat to the transmission line system, which unnecessarily harms wildlife habitat and creates openings for invasive plants. To avoid unnecessarily costly work in the future, BPA should inventory the length of the transmission line, map forest communities, and create a long-term vegetation management plan that can be reviewed and commented on by the public and expert agencies.

0008-6 The Management Plan includes standards for protecting natural, recreational, and cultural resources. As outlined in the EA, the proposed project traverses numerous protected natural, recreational, and cultural resources sites. The project proposes to remove up to 747 trees and, within the NSA, it proposes temporary disturbance to over 58 acres and permanent disturbance to about one-third of an acre. Since the project will not go through normal scenic area review and because the proposed transmission rebuild project has the potential to generate significant direct, indirect, and cumulative impacts and these impacts may be impossible to mitigate, we ask BPA to prepare a full Environmental Impact Statement (EIS) to ensure full disclosure of the environmental impacts of the proposal.

0008-7 We also ask BPA to work with the Forest Service to ensure the proposal would comply with all natural resource protection standards and we call on BPA to voluntarily acquiesce to a Consistency Determination from the Forest Service.

0008-8 To prevent even further unmitigated damages to the protected resources of the NSA, we also ask BPA to select Line Mile 19 Option 3.

Response to Comment BonHR16160008: Friends of Columbia Gorge

0008-1 Comment noted.

0008-2 Comment noted. Section 3.15.2 of the EA discuss the proposed project's consistency with various potentially applicable provisions of the Management Plan, including those referenced by the commenter. In addition, Section 3.9 of the EA discusses impacts to visual quality in the National Scenic Area from the proposed project and identifies measures to reduce those impacts, and Appendix C of the EA provides a full analysis of the potential project-related impacts to visual resources in the National Scenic Area.

0008-3 Section 3.9 of the EA identifies several measures that BPA would implement to reduce the visibility of the proposed project within the National Scenic Area. These measures include the use of weatherizing steel finishes on all of the steel monopole structures that would be installed as part of the proposed project. The brown, non-reflective hue of these new structures would darken their color and reduce the visual contrast they present in the landscape. In addition to using this structure finish, BPA would use local rock for acces roads as much as practical, treat access roads and retaining walls with Permeon to match background colors, minimize ground disturbance areas as much as practical, and revegetate disturbance areas with native seed mixes.

0008-4 BPA would implement several measures to minimize the spread of noxious weed and impacts to native plants (see Table 2.7-1 of the EA). Specific measures include the following:

- Conduct pre-disturbance surveys during spring and early summer before construction to determine whether populations of additional sensitive plant species are present in project impact areas.
- Coordinate with the U.S. Forest Service botanist for work on U.S. Forest Service-managed lands to allow for the relocation of sensitive plants that cannot be avoided during construction.
- Identify noxious weed infestations at construction sites and avoid these areas during construction, as practical.

- Minimize ground disturbance in proximity to existing noxious weed populations during construction.
- Use water or compressed air and hand tools to remove seeds, roots and rhizomes from equipment used to move vegetation and topsoil before moving the equipment off site.
- Provide vehicle and equipment washing or blow stations for daily use before apparatus enters or leaves a project area with known weed infestation.
- Use weed-free straw, hydromulch, or similar ground cover for erosion control during construction and restoration activities in areas that cannot be immediately revegetated.
- Use weed-free rock when rock is required for construction activities.
- Treat noxious weeds to minimize their potential to colonize disturbed areas. Design treatment programs to avoid adverse effects on non-target native plant species, particularly sensitive plant species and native populations in sensitive habitats.

0008-5 Vegetation surveys were completed in 2014, 2015, and 2016 to map the existing vegetation communities (including forest communities) along the transmission corridor, as discussed in Section 3.4.1 of the Draft EA. BPA would also conduct pre-disturbance surveys during spring and early summer before construction to determine whether populations of additional sensitive plant species are present in project impact areas. Further, BPA would coordinate with the U.S. Forest Service botanist for work on U.S. Forest Service-managed lands to allow for the relocation of sensitive plants that cannot be avoided during construction.

Future vegetation management would be done in accordance with BPA's *Transmission System Vegetation Management Program Final Environmental Impact Statement/Record of Decision* (BPA 2000). The location of identified sensitive plants would be noted and would be avoided as practical during future vegetation management activities.

0008-6 To clarify, only up to 380 trees would be removed under the proposed project (see Table 2.1-2 of the EA and Section 2.1.8, *Vegetation Removal* of the EA). These trees are at various locations spread along the length of the approximately 22-mile-long portion of the line that would be rebuilt. Furthermore, BPA has worked to design the project to minimize impacts along the entire length of the rebuild, including within the National Scenic Area. As a result, as noted by the commenter, the proposed project would result in only about one-third of an acre of permanent impacts within the National Scenic Area. BPA also has developed avoidance, minimization, and mitigation measures to reduce project-related impacts; these measures have been developed through coordination with various land managers, regulatory agencies and others. Accordingly, BPA believes it has sufficiently addressed all potential direct, indirect, and cumulative impacts related to the proposed project in the EA and, as discussed in the EA, has not identified any potentially significant impacts that would require preparation of an Environmental Impact Statement (EIS).

0008-7 Comment noted. BPA continues to work with the US Forest Service concerning the proposed project. In addition, the EA has been prepared to aid in this coordination by providing an analysis of project-related impacts in the context of the National Scenic Area Management Plan, as described in the appropriate resource sections and summarized in Section 3.15 of the EA. BPA has also incorporated avoidance, minimization, and mitigation measures for sensitive resources as outlined in the National Scenic Area Management Plan and determined through consultation with the US Forest

Service. BPA continues to coordinate with the US Forest Service concerning the proposed project's consistency with the National Scenic Area Act and its requirements.

0008-8 The commenter's preference for Line Mile 19 Option 3 is noted.

Comment BonHR16160009: Hiseler

0009-1 Thank you for allowing me the opportunity to weigh in on the Bonneville-Hood River Transmission Line Rebuild Project. I am a neighboring property owner and easement holder to a stretch of this line (roughly Line Mile 19.5-20), as well as an access easement (currently in negotiations) across the property where I reside to Line Mile 19. No matter the option selected for Line Mile 19, my residence and life style will be impacted in many ways by this power line rebuild.

0009-2 I will start in the order of the Environmental Assessment document. In table 2.1-1, it is stated that Pre-project Structure Numbers 19/8, 19/9 & 19/10 will be replaced by wood-pole H-frame structures, which have been treated with pentachlorophenol (PCP). The USDOT lists PCP as Class 6.1: poisonous material, as well as noting that PCP is a marine pollutant. I have included a section of the Materials Safety Data Sheet that is included with every purchase of PCP. The MSDS also states that materials created in the deterioration process are actually more harmful to the environment than PCP itself. http://www.sciencelab.com/msds.php?msdsId=9926413

Chronic Effects on Humans: The substance is toxic to blood, kidneys, lungs, the nervous system, liver, mucous membranes.

Other Toxic Effects on Humans:
Very hazardous in case of skin contact (irritant), of ingestion. Hazardous in case of skin contact (permeator), of inhalation.
Slightly hazardous in case of skin contact (corrosive, sensitizer).

0009-3 I derive all of my domestic and irrigation water directly from an untreated spring which lies below these three tower structures. I have had an organic garden interest on my property since 1991. I have had and still do have an agreement with past and current representatives of maintenance for the BPA transmission Line Mile 19 since 1991, in which this area is a no spray zone when weed treatment projects are undertaken.

0009-4 I would greatly appreciate the No Action Alternative on at least these three historic lattice towers known as structures 19/8, 19/9 and 19/10.

As far as the Line Mile 19 Options discussed in Section 2.2 of the EA, all three of the options would greatly impact me directly. Of course, I prefer the No Action Alternative, but I also understand that the line is old and needs to be upgraded. Therefore, Option 3 would be my best choice, if I had it.

0009-5 Line Mile 19 Option 1 would have the most severe impacts to my property, lifestyle & surrounding basin. I work at home most of the time, outside, so will have the displeasure of watching and hearing many trucks and large machines travel through my property five days a week for most of a summer season. It is stated in Section 3.2.2 that Options 1 & 2 would result in increased noise in the area for approximately 1-2 months. Option 3 might take a maximum of 20 days, with far less truck and machinery traffic traveling through my property, and less impact to my neighbors as well.

0009-6 Options 1 & 2 will also result in large MSE retaining walls to stabilize the existing road and build landings for bucket trucks. These retaining walls will be seen from many places, including the interstate and from across the Columbia River. While I understand that the BPA does not have to abide by the National Scenic Act, it could at least take into account the intention behind it.

0009-7 Leaving the historic lattice towers intact is much less an eyesore than replacing them with 75-90' steel monopole towers. These tall towers will have a huge visual impact, especially Line Mile 19, starting with structure 19/3 and ending with 19/10. The eight existing historic lattice H-towers in this stretch can be seen from the interstate, the Columbia River, and Washington State. From Washington State, this basin creates the drop cloth for the view of Mt Hood. Inserting at least four steel monopole structures in this idyllic view corridor would be a travesty.

0009-8 The efforts going into replacing this historic stretch of the transmission line is bordering on absurd. The EA states that at least six different options were discussed, with half of them being discarded before the document was printed. Clearly, replacing the structures 19/3-19/7 will require the most amount of effort on BPA's part and gain the least amount of gratitude from the public. I sincerely ask that these towers are not replaced.

0009-9 In summary, I believe there is value in maintaining a piece of our heritage as US citizens. We can never get the current landscape back if we replace these eight historic steel lattice H-towers between Mitchell Point and the ridge to the east with taller monopoles which will dwarf the surrounding trees. My drinking water is also at stake here, and part of my livelihood if my spring becomes tainted by runoff from treated wood poles.

Response to Comment BonHR16160009: Hiseler

0009-1 Comment noted.

0009-2 The EPA approves the use of PCP-treated wood for outdoor use and the use of PCP complies with American Wood Protection Association's standards and is considered to be the industry standard. The EPA describes exposure (and therefore risk) to individuals living near PCP-treated poles as minimal, provided wood has been treated correctly. Per EPA guidance, BPA would ensure that the wood is treated by certified vendors.

0009-3 Comment noted. Section 3.3.2 of the EA describes how PCP contains toxic compounds that can move through and leach from the bottom of transmission structure poles, contaminating surrounding soils. However, soil PCP concentrations at PCP-treated poles decrease by as much as two orders of magnitude between 3 and 8 inches from the pole. In most soils in the project area, this short leaching distance of PCP in soils would result in only extremely localized and minor contamination. Furthermore, as discussed in Section 3.5.2 of the EA, the EPA has concluded that because PCP adsorbs to soils and degrades relatively rapidly in the environment, PCP usage on utility poles is not likely to contaminate groundwater, except in situations where the bottom of the pole is directly in contact with the water table or where leaching occurs from multiple poles in a wood storage area. In the case of the proposed rebuild, none of the structures would intersect shallow groundwater in the project area, including in the area of concern to the commenter, and multiple poles would not be stored in this area as well.

0009-4 The commenter's preferences for the No Action Alternative and for Line Mile 19 Option 3 if the line is rebuilt are noted.

0009-5 Comment noted. BPA acknowledges commenter's concern for temporary construction-related noise and preference for the shorter construction window anticipated under Line Mile 19 Option 3. BPA would encourage construction vehicles to travel at low speeds on access roads and construction sites to minimize dust and landowner disturbance along access routes. BPA's contractor would provide construction schedules to landowners and would minimize construction work to business hours during week days. Further, construction in this area would likely be split among two construction seasons to limit the duration of construction noise in any one season.

0009-6 As described in Section 3.9 and Appendix C of the EA, the retaining walls that would be installed under Line Mile 19 Options 1 and 2 would be brown to grey in color and would blend with the surrounding exposed rock, appearing consistent with natural openings in the vegetation. The color of the retaining walls may appear brighter than the natural un-vegetated areas the first few years after construction, but would fade with time, such that they would easily be overlooked by viewers and appear consistent with the existing condition. In addition, BPA would use locally-sourced rock that would be of a similar color as the natural rock outcrops in the landscape, and rock surfaces would be treated with colorant, if needed, to further match the natural rock outcrops in the area (see Table 2.7-1 of the EA). These measures would further minimize the visual contrast of the proposed MSE walls and would maximize the extent to which this feature would blend with the surrounding landscape. These design and mitigation measures would serve to reduce visual impacts from the proposed project, consistent with the Scenic Area Act which is discussed in Section 3.15.2 of the EA.

0009-7 Of the structures referenced by the commenter, BPA proposes to replace structures 19/3, 19/8, 19/9, and 19/10 with either 2- or 3-pole wooden H-frame structures; only structures 19/4 to 19/7 would be replaced with steel monopoles. In this location, the replacement of the steel lattice structures would be replaced with either weatherizing monopoles or wood H-frame structures. The structure replacement would be a brown color that would be more consistent with the color and vertical structures of trees in the forested backdrop. Accordingly, as discussed in Section 3.9 and Appendix C of the EA, the proposed structures in this area are not expected to elevate the level of visual contrast above what is currently observed in existing structures from the vantage points referenced by the commenter.

0009-8 Comment noted. The line's location within the National Scenic Area coupled with the steep terrain and lack of physical access presented several unique challenges for BPA. To address stakeholder concerns, BPA engineers carefully considered several factors including environmental effects, cost, constructability, worker safety, and future maintenance when developing the three options presented in the Draft EA. With respect to not replacing the structures, BPA has determined that many of the existing wood pole and steel lattice structures along the line, including those in line mile 19, have at least one component that has reached or exceeded its service life. Therefore, leaving the existing structures as-is presents an unacceptable risk to the integrity and reliability of the transmission line.

0009-9 Comment noted. See responses 0009-3 and 0009-7.

Comment BonHR16160010: Pacific Crest Trail Association

0010-1 On behalf of the Pacific Crest Trail Association and our 10,000 members, I want to thank you for soliciting comments on the Draft Environmental Assessment for the proposed rebuild of the Hood River Bonneville Transmission Line. The PCTA is a national non-profit organization and the Forest Service's major partner in maintenance and management of the Pacific Crest National Scenic Trail. PCTA is an active participant in management decisions affecting the experience of users of the PCT, and each year we contribute around 100,000 hours of volunteer labor in coordination with our agency partners, to tackle projects on the trail. Further, PCTA advocates at the federal level for increased funding to maintain this national treasure, and to preserve the scenic lands through which the trail passes.

Thank you for taking the time over the last few weeks to discuss the impacts expected along the PCT as a result of this project. As I mentioned, we strive to protect and improve the wild feeling of the landscapes surrounding the PCT as much as possible. Along the PCT's 2,650 miles from Mexico to Canada, hundreds of developments are proposed each year by an array of different agencies, industries, and private owners. In order to abate cumulative impacts and preserve the values for which Congress established the trail, it is important that any proposal along the PCT be held to the highest standard of visual mitigation, with the result that landscapes viewed from the PCT appear as natural as possible.

0010-2 On Tuesday October 25, local Forest Service representatives Edan Lira and Dawn Stender joined me in visiting the intersection site, where the PCT currently crosses under BPA structure 5/2. We shared concerns that the proposed improvements would make an already compromised situation even worse for the trail. We investigated possibilities for visual mitigation via reconfiguration of the PCT intersection with the BPA line. We believe that these possibilities deserve further investigation.

0010-3 There are three main ways in which suboptimal features of the existing intersection [BPA structure 5/2] would be exacerbated by BPA's proposed improvements: The existing view from the trail is a long line of sight down a decidedly unnatural appearing power line corridor, crisscrossed with roads. Forest Service scenery management principles dictate that developments viewed from a sensitive viewing area should strive to mimic "the form, line, color, texture, and pattern common to the landscape." Contrary to this, the improved roads will stand out visually as artificial, in what's already an artificial corridor of cleared vegetation. The improvements would disrupt the PCT traveler's experience because they clearly mark human manipulation and diminish the desired sense of remoteness from civilization.

0010-4 The trail shares the BPA access road for about 225 feet, which is more than necessary to simply traverse the width of the utility corridor. While it's suboptimal for the Pacific Crest Trail to follow any road at all, at least the existing condition of the road is rustic. Upgrades to the road, including resurfacing with imported materials, will make it appear and feel more industrialized for the PCT traveler. A related effect, because the road is already dominant over the trail, is that people get lost and continue to follow the road, despite trail signage. Improving the road would exacerbate this situation.

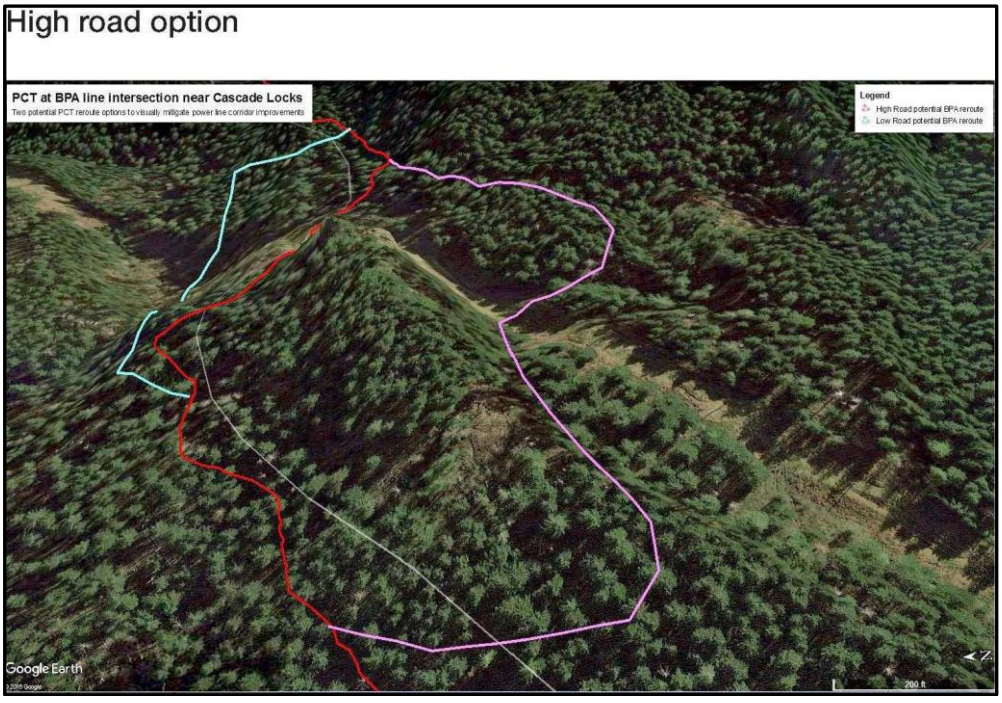
0010-5 The trail crosses directly under one of the structures, in fact, between the poles and their guy lines. This site can't help but appear impacted by the proposed improvements. There will be three

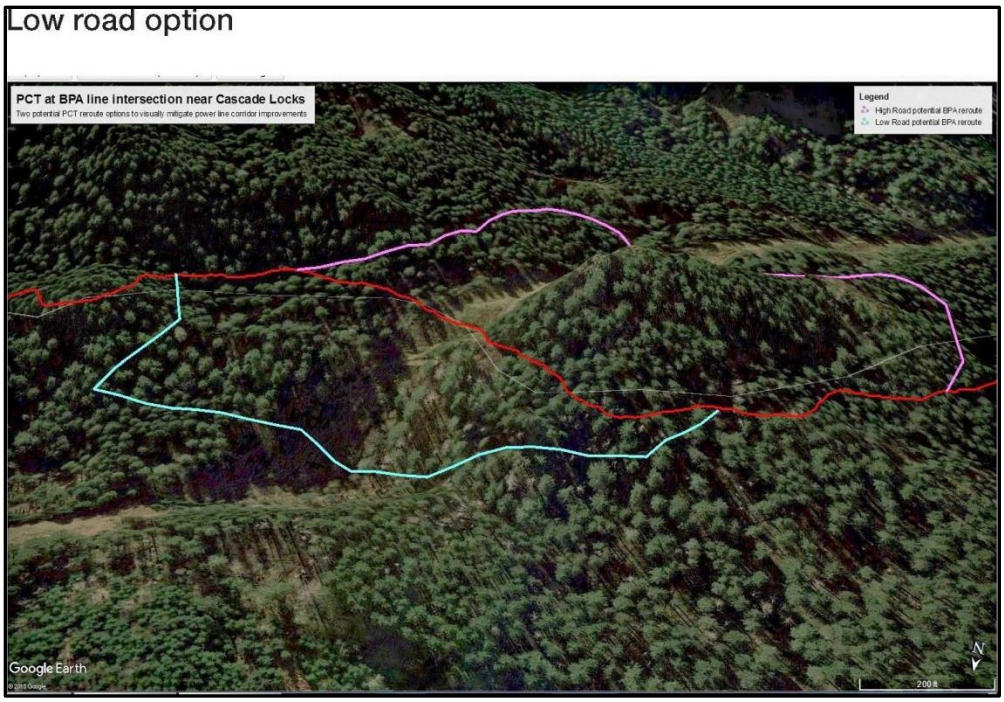
poles instead of two, and, clearly a good deal of ground disturbance involved in upgrading this structure.

0010-6 These exacerbated visual impacts to the trail could be best ameliorated by reconfiguring the intersection, and reconstructing portions of the PCT where necessary to meet the BPA line in a spot that lends itself better to disguise. Such a trail relocation would be as much as .5 mile long, and would require its own NEPA study. We propose that this NEPA study, and subsequent trail construction by PCTA's volunteer crews, be funded by BPA as a mitigation measure.

0010-7 While it may be true, historically speaking, that original construction of the trail occurred decades after the utility corridor was already present, we cannot assume that the location chosen for the PCT to cross the BPA line must have been truly and permanently optimal. The trail was built at a time when the landscape overall had fewer developments, and scenery management concepts were not very pervasive. Perhaps the utility corridor at the time was narrower and less visually obtrusive. Regardless, it is our responsibility to curb, and when possible, to reverse visual impacts along the trail at every opportunity. Otherwise the incremental and cumulative impacts in today's rapidly developing world would quickly overwhelm the values for which Congress established this National Scenic Trail.

0010-8 On our October 25th field visit, we walked one route that we agreed could serve as a trail relocation. We looked at another possibility but did not walk the line. I've attached a visual simulation of these two potential reroutes. Either seems feasible, but would certainly require more study. There are sure to be other possibilities we haven't yet thought of. I'd be happy to meet with your project designers on-site to discuss the possibilities.





Response to Comment BonHR16160010: Pacific Crest Trail Association

0010-1 Comment noted.

0010-2 Comment noted. Sections 3.2, Recreation, and 3.9, Visual Resources, and Appendix C, *Visual Resource Analysis (Columbia River Gorge National Scenic Area),* of the EA address potential recreation and visual quality-related impacts from the proposed rebuild project on the Pacific Crest Trail. As shown in Figure 3.2.1 of the EA, the Pacific Crest Trail passes under the existing transmission line near the urbanized area of the City of Cascade Locks, Oregon, approximately 0.5 miles southeast of the heavily travelled I-84 corridor. In order to maintain the existing experience for trail users as much as possible, BPA would limit work performed in the vicinity of the Pacific Crest Trail to the rebuild of one transmission structure. One other structure will remain as-is, and two structures would require replacement of a single pole. Access road work in this location would be limited to improving existing access roads in the area where needed with additional rock surfacing; no widening would occur. BPA also would implement several minimization and mitigation measures (see Table 2.7-1) to minimize project visible impacts to Key Viewing Areas, including the Pacific Crest Trail. These measures include minimizing vegetation clearing, using local rock and color treatment Permeon on access road rock, and revegetating with native seed mixes.

0010-3 See response 0010-2. As discussed in Appendix C, *Visual Resource Analysis (Columbia River Gorge National Scenic Area)*, the road improvements in this area under the proposed project would result in only temporary visual impacts to Pacific Crest Trail users as they briefly pass under the existing transmission line, and these impacts would be expected to be further minimized in a few years as vegetation reestablished in the area. In addition, mitigation is identified to minimize these impacts.

0010-4 See responses 0010-2 and 0010-3. BPA continues to work with the Pacific Crest Trail Association and the U.S. Forest Service to investigate whether additional signage would help to alleviate user misdirection.

0010-5 To clarify, the existing structure at the trail crossing (5/2) is a 3-pole wood H-frame structure supported with six guy wires. The replacement structure would also be a 3-pole wood H-frame structure; however, BPA has redesigned the line so the structure only requires one guy wire. BPA would minimize ground disturbance associated with in-place structure replacement, and disturbance areas would be revegetated with native seed mixes upon completion. Viewer exposure to proposed ground disturbance associated with structure replacement would be temporary.

0010-6 Suggestion noted. BPA believes that based on the analysis of the proposed project contained in the EA, potential impacts to Pacific Crest Trail users from the rebuild activities in this area would not be significant, and mitigation measures identified in the EA would further reduce these impacts. Nonetheless, BPA continues to coordinate with the Pacific Crest Trail Association and the U.S. Forest Service concerning this suggestion.

0010-7 Comment noted.

0010-8 BPA has met with the Pacific Crest Trail Association and is continuing to coordinate with them concerning this suggestion.

Comment BonHR16160011: Worth

0011-1 My wife and I own and reside in Hood River, OR.

This property is immediately north of the power line and includes an access road with an easement that we are modifying. We also own the land south of centerline of tower 19-8, tower 49-9, and tower 19-10.

0011-2 I support the No Action alterative for mile 19. I also support saving the existing historic steel lattice H-frame towers 19-8, 19-9, 19-10.

The no action alternative for towers 19-2 through 19-10 would retain the eligibility for listing in the National Register for this selection of Bonneville Hood River transmission line. It represents a complete section of the historic line and historic road visible from significant portions of the Columbia the river and Washington side of the Columbia. No new line or new roads would be visible from these KVAs.

0011-3 The existing foundations and towers from 19-2 to 19-9 appear sound. They have stable foundations and almost no rust. Over the last 25 years only one tower structure has required repair or maintenance. This repair was the result of a landslide.

The historic towers were designed to be built and maintained without cranes, roads or landings. The steel lattice H-frame towers are easier to climb and work on then the Wooden 2 pole H-frame towers. Maintaining the existing towers with foot access allows you to avoid all the impacts of rebuilding the road and retaining walls. The carefully built 1933 road is stable and has required almost no maintenance in the last 25 years.

0011-4 I am concerned about my drinking water source approximately 250 feet downhill from 19-9.

Maintaining the existing towers 19-8, 19-9 avoids the potential impacts of new wooden tower PCPs leaching into the aquafer and the spring providing drinking water to my home and a neighboring home. Our spring box is approximately 250 feet downhill from tower 19-9. The water flowing into the

spring box can be traced uphill for over 100 feet where it appears on the surface and returns underground(Approximately 150 feet from tower 19-9).

0011-5 I strongly oppose the road rebuilding and retaining walls in Line Mile 19 Option 1 and Line Mile 19 Option 2.

These road improvements and new 1500 feet of retaining walls described in options 1 and 2 would be built in extremely steep terrain requiring regular maintenance and increasing the risk of landslides by adding loads on subsoils with the weight of the rebuilt road and new retaining walls, and by disturbing soils and water flows. This is an active landslide area with mapped landslide deposits, tower 19-8 was damaged by a land slide in 1996 or 1997. Since 1996 several slides/mudflows have come under the line, between towers 19-7 and 19-8 and flowed down the road as far as 600 feet and 1,100 feet beyond the power line.

The hillside where the road would be rebuilt is in and bellows extremely steep terrain with multiple springs and gullies seeping water. The highway department is spending over 10 million dollars this year to mitigate falling rock where I84 cuts through the same rock band, 1 mile away. The exposed cliff face at that location brakes off in 1 to 10 ton pieces annually, when the water behind the rock turns to ice. They keep cutting deeper into the rock but the freshly exposed rock allows water behind the new surface to freeze.

0011-6 The improved road and new retaining walls will have significant impacts on views from KVAs. The Visual Resource Analysis underestimates the impact on the views from KVAs. The picture and was taken when the access road was in deep shadow, and as a result the Photo simulation shows no contrast. The sun will outline the retaining walls or shine directly on the retaining wall faces through the morning and mid-day hours throughout the busy viewing times of spring and summer.

Passengers in vehicles on SR 14 and on boats on the Columbia River will have significant viewing time and a good view angle of the proposed retaining walls. The power line cut is the only interruption in the forest on the Oregon shore and it draws the eye to the historic towers and road. 1500 feet of new retaining walls up to 14 feet high would be the only prominent manmade object above river level.

Response to Comment BonHR16160011: Worth

0011-1 Comment noted.

0011-2 The commenter's preference for the No Action alternative is noted. As described in Section 3.12, *Cultural Resources,* of the EA, the proposed project would result in a change of several of the existing structure types, thus making the line not eligible for listing in the National Register under Criterion C. BPA, along with consulting parties, have agreed upon several measures to mitigate the adverse impacts to the line through the Section 106 consultation process under the National Historic Preservation Act. The Section 106 consultation process was completed on June 4, 2018.

0011-3 As discussed in Section 1.1, *Need for Action*, of the EA, many of the transmission line structures and/or their components are near or have exceeded their service life, and thus are physically worn and showing normal deterioration due to age. In addition, the existing road and trail system that BPA uses to access the transmission line is in poor condition. This is true of the structures and roads in the area referenced by the commenter, notwithstanding general appearances of these facilities.

0011-4 See responses 0009-2 and 0009-3. Because none of the project structures would intersect shallow groundwater in the project area, it is not expected that PCPs would enter a water source about 150 feet away.

0011-5 Comment noted. The section of the line where the road reconstruction and retaining walls are proposed is steep but does not show signs of any slope failures as have occurred in the adjacent areas referenced in the comment. The proposed retaining wall area is not an active landslide. The relative stability of this specific area is most likely due to the materials encountered in the subsurface explorations, which are rocky talus deposits overlying bedrock. These talus deposits are lying at very steep slopes, which are essentially at their natural angle of repose. Retaining walls are being proposed for the new access road widening as the existing slopes are at the natural angle of repose and new fills placed at steeper angles would be unstable and likely cause slope instability. Retaining walls would be designed with sufficient embedment to satisfy global stability, minimizing the risk of causing new landslides. Drainage would be incorporated into the road design with consideration of existing natural drainage paths and the retaining wall face material and backfill would be permeable. The proposed retaining walls would have a flexible wire face backfilled with local rock that would blend with the natural earth tones. Because of the wall design stability, flexibility, and permeability, it is not anticipated that the walls would require unusual levels of maintenance.

0011-6 Comment noted. Appendix C-4, *Visual Resource Analysis (Columbia River Gorge National Scenic Area)*, has been updated to include a discussion of the effect of the varied lighting conditions on the visual contrast of the retaining walls in the area. As discussed in the EA, BPA would use rock that is similar in color to the natural rock outcrops in the landscape, thereby minimizing visual contrast and maximizing the extent to which this feature will blend with the surrounding landscape. See also responses 0009-6 and 0009-7.

Comment BonHR16160012: U.S. Environmental Protection Agency

0012-1 In accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act, and the Council on Environmental Quality regulations for implementing NEPA, the US Environmental Protection Agency has reviewed the Bonneville Power Administration's Draft Environmental Assessment for the proposed Bonneville-Hood River Transmission Line Rebuild Project in Multnomah and Hood River Counties, Oregon (EPA Project Number 14-0014-BPA).

The draft EA evaluates potential environmental impacts associated with BPA activities to rebuild portions of its 23-mile-long, 115 kilovolt Bonneville-Hood River transmission line. The line crosses federal and state lands, as well as private property. Originally built in the 1930s, the power line infrastructure is now deteriorating due to age and requires replacement. Thus, the proposed project would replace aged wood and steel lattice H-frame structures and other line components, and improve its access roads and trail systems. Rebuilding the line would allow BPA to not only maintain reliable power supply service, but also ensure public and worker safety.

For the project impacts analysis, BPA considered the proposed action and a no action alternative. Under the proposed action, there would be removal and replacement of old structures; enhancement and extension of existing access roads and trails; installation or replacement of bridges, fords, culverts, gates, and guard structures; establishment of staging areas, helicopter flight

yards, and tensioning sites; and removal of vegetation and restoration disturbed areas. There would also be hillside cuts or fills where construction activities would occur in steeply sloped terrain and blasting in rocky areas. As the proposed action would be completed within the existing right-of-way, BPA anticipates no significant impacts by the project. Under the no action alternative, BPA would not rebuild the transmission line or upgrade related facilities.

We are pleased to note that the draft EA addresses many of the issues we raised during the project scoping period in April 2014, including analysis of cumulative and climate change effects. After review, we believe the draft EA document includes a good description of resources in the project area, anticipated impacts, and mitigation measures to offset the impacts. Overall, most impacts by the project would be due to construction activities, which would generate both temporary and permanent impacts due to the project footprint and long-term operations and maintenance.

0012-2 We suggest that the final EA include the following:

- Updated information on Clean Water Act permit applications for the project (p. 2-42), as well as - measures to protect water quality. The draft EA indicates that construction activities would disturb up to 71 acres of land for structure replacement, access roads and trails, thus potentially increasing soil erosion and discharge of sediment to nearby waterways. The project area includes nearly 136 acres of soils with a severe erosion hazard rating and about 197 acres with high landslide risk (p. 3-32; 3-30). Because the project will cross 31 streams, there is potential for work on structures, bridges, culverts, access roads, foot trails, and roads within 100 feet of streams (p. 3-61) to contribute to water quality deterioration within crossed streams (e.g.,' turbidity) which are tributaries to the Columbia River, on the Oregon State 303(d) list for exceedance of water quality standards for zinc and chromium (p. 3-55). Additionally, groundwater extraction in the area, land disturbance, material storage, waste disposal, inadvertent chemical or hazardous liquid spills, and compaction produced by vehicular traffic could also affect recharge to the local aquifer and groundwater quality. We recommend that BPA continue to work collaboratively with Oregon Department of Environmental Quality to ensure compliance with existing Water Quality Restoration Plans for 303(d) listed waters in the project area or vicinity and monitor tributaries to the Columbia River to prevent degradation of water quality in the project watershed.

0012-3

- Additional information from continued work with the US. Fish and Wildlife Service and National Marine Fisheries Service, and as appropriate, with the Oregon Department of Fish and Wildlife including recommended measures to reduce risks and protect biota and habitat. The draft EA indicates there are fish-bearing creeks (p. 3-69) and other threatened, endangered, candidate, sensitive species occurring within the project area (p. 3-80), which could be impacted by the proposed project activities.

0012-4

- Information on an inspection and mitigation-monitoring program that would ensure compliance with all mitigation measures and assess effectiveness. We recommend that the final EA describe the program and its use as an effective feedback mechanism so that needed adjustments can be made to meet environmental objectives throughout the period of the project.

Response to Comment BonHR16160012 U.S. Environmental Protection Agency

0012-1 Comment noted.

0012-2 BPA continues to coordinate with the appropriate regulatory agencies for required Clean Water Act related permits identified in Table 2.5-1 of the EA. As shown in this table, the project would be constructed in accordance with the National Pollution Discharge Elimination System (NPDES) General Storm Water 1200-CA Permit (File No.: 111769; EPA No.: ORR10-4145) from the Oregon Department of Environmental Quality to limit erosion. In addition, BPA is currently seeking DSL delineation review and approval and will complete and submit a Joint Permit Application as appropriate in support of appropriate DSL and US Army Corps of Engineers wetland and waterbody permitting under Sections 404 and 401 of the Clean Water Act. As noted in Section 3.5, *Waterways and Water Quality*, and Section 3.6, *Wetlands and Floodplains*, the proposed project would cross two 303(d) listed waterbodies. BPA does not anticipate that the project would contribute constituents that would cause further impairment in listed waterbodies. Further, erosion control measures would be implemented to limit the introduction of sediment to waterbodies.

0012-3 Comment noted. Table 2.5-1 of the EA has been revised to include updated information from ongoing consultations with US Fish and Wildlife Service, Oregon Department of Fish and Wildlife, and National Marine Fisheries Service.

0012-4 BPA has developed a mitigation action plan (MAP) that outlines project-related minimization and mitigation measures. BPA and its contractors are responsible for implementing the mitigation measures during various phases of project construction. Relevant portions of the MAP would be included in the construction contract specifications. This would obligate the contractor to implement the mitigation measures identified in the MAP that relate to contractor responsibilities during construction and post-construction.

Comment BonHR16160013: U.S. Forest Service

0013-1 This letter includes the compiled comments from the U.S. Forest Service, Columbia River Gorge National Scenic Area regarding Bonneville Power Administration's September 2016 Draft Environmental Assessment for the Bonneville-Hood River Transmission Line Rebuild Project. The comments are arranged by resource area, and generally follow the organization of the EA. In their reviews, the specialists focused primarily on their individual resource areas and on the potential mitigation measures contained in EA Table 2. 7-1.

Some comments refer to buffer distances and other resource guidelines from Forest Service direction (Mt Hood National Forest Land and Resource Management Plan, as amended by the Northwest

Forest Plan), and from the Columbia River Gorge National Scenic Area (CRGNSA) Management Plan. The Forest Service direction applies to all activities on National Forest System lands in the project area. As we determine which of the proposed activities are required to be consistent with the CRGNSA Management Plan, it will become clear where the CRGNSA guidelines apply.

I understand from our Archaeologist Marge Dryden that she and the BPA Archaeologist are already in communication regarding proposed activities in the vicinity of The Dalles-Sandy Wagon Road site.

The Sensitive Species list was recently updated. The updated list is included as an attachment to this letter.

We appreciate the thorough work you and your team have done in preparing this draft EA and the regular interactions between our offices throughout the process. I am happy to follow through with you on any questions or clarifications you may have about these comments.

0013-2 Lands and Special Uses: EA at 2-27, 3-7, 3-11. Clarification. The EA states that the BPA will be acquiring "easements" for existing access roads on National Forest System (NFS) lands. BPA will be receiving permits for these from the USDA Forest Service (USFS), not easements.

0013-3 Lands and Special Uses: EA at page 3-147. Clarification. There are approximately 82,000 acres of National Forest System lands in the CRGNSA, not 71,000 acres as stated on this page.

0013-4 Recreation Recommendations and Suggested Mitigations (in addition to mitigation measures provided in draft EA): Campgrounds: Schedule work during low use season when campgrounds are closed (October through May). Eagle Creek and Wyeth Campgrounds are operated on a reservation system and sites are often reserved up to a year in advance. Forest Service should be notified of potential impacts (e.g. noise, dust, equipment traffic, delays) a minimum of one month in advance so we can provide adequate notification.

0013-5 Trails: Trail realignment and/or reconstruction on NFS land may require additional NEPA or Scenic Area analysis. The Forest Service must approve any re—route or trail improvement project prior to construction. Trail work must meet Forest Service trail design and maintenance standards.

0013-6 Temporary closures. Intermittent, short access closures will be difficult to implement, particularly at trailheads. We request that BPA communicate well in advance with Forest Service recreation and public affairs staff to ensure adequate public notification (e.g. through social media, websites, news releases, and signage) is provided.

0013-7 Wilderness: Page 3-3 of the EA states that the existing transmission line and access system are not within the designated wilderness. Please also include a statement that no part of the improved transmission line and access system will be within the designated wilderness, and there will be no use of helicopters in wilderness.

0013-8 Pacific Crest Trail. We request that BPA work with the Forest Service on a trail closure plan for the Pacific Crest Trail (PCT) as needed. We recommend that either the PCT or Eagle Creek Trail (an alternate route for through hikers) remain open at all times. There will be a need to coordinate with both the Mt Hood National Forest and the CRGNSA to ensure PCT through hikers are informed of any closures and can adjust their route accordingly.

0013-9 Unanticipated unauthorized access: We request that, following implementation of the project, BPA will install gates and barriers as needed to address illegal access/use resulting from access system improvements. We will gladly work with BPA to identify potential access points.

0013-10 Clarification. On page 3-21, it says the BPA will work with Oregon State Parks to post announcements and minimize impacts on Eagle Creek Trail. Eagle Creek Recreation Area is on National Forest System lands, so this should be changed to say BPA will work with the Forest Service regarding any impacts to Eagle Creek.

0013-11 Road maintenance/repair. There are concerns about undermining and drainage on the Eagle Creek Campground access road. The FS would like to request assistance from BPA in maintaining and/or repairing the road if needed to accommodate equipment and use for this project.

0013-12 Helicopter use. Helicopters transporting materials via sling load will not fly over open trails, campgrounds, and congested areas (e.g. Eagle Creek, Multnomah Falls, etc.)

0013-13 Is there a general sense of what time of year the work will occur?

0013-14 How will intermittent, short access road closures allow for people coming and going from sites such as Eagle Creek Trailhead? May need to implement 1/2-day or full day closures as an alternative. What is the strategy for managing short closures?

0013-15 Will there be any power outages at Wyeth Campground? If so, FS requests early notification so we can make arrangements to run our well pump off of a generator.

0013-16 Will helicopters be sling loading materials? If so, what safety measures will be taken to ensure visitor safety in recreation sites and on trails?

0013-17 Vegetation. Oregon white oak. Select appropriate mitigation planting locations to ensure that sufficient spacing between trees is available for the 1:10 mitigation planting ratio. If removal includes oak habitat rather than occasional individual trees, a recommended mitigation ratio is 8 acres for each acre of Oregon white oak habitat removed.

0013-18 Native seed mixes and revegetation. We are happy to provide information regarding appropriate native seed mixes or plant species for revegetating disturbed areas.

0013-19 Waterways and Water Quality/Floodplains and Wetlands: Section 2.1.3 Replacement of Transmission Structures. Where will excess soil removed from new pole location holes will be placed? Mitigation measures may be needed to stabilize this soil and to prevent erosion or possible sediment delivery to streams. If excess soil remains on site, please consider mitigating potential effects to visual resources as well.

0013-20 Waterways and Water Quality/Floodplains and Wetlands: Table 2.6-2, Waterways and Water Quality. Please specify which four structures are proposed to be replaced within 100' of streams, and what types of streams are involved (perennial, intermittent, fish-bearing).

0013-21 Waterways and Water Quality/Floodplains and Wetlands: Table 2.6-2, Please list the number of structures within CRGNSA water resource buffers as well as NWFP Riparian Reserves for NFS lands, and include the acres of disturbance within these buffers and Riparian Reserves.

0013-22 Waterways and Water Quality/Floodplains and Wetlands: Table 2.6-2, Please provide additional information about the 23 trees to be removed. Are they located along perennial channels

or within primary shade zones of the streams, and are they concentrated in a few areas of scattered throughout the length of the project?

0013-23 Waterways and Water Quality/Floodplains and Wetlands: Table 2.6-2, Wetlands and Floodplains. The first sentence in the no action row is confusing. May want to consider rewording.

0013-24 Waterways and Water Quality/Floodplains and Wetlands: Table 2.6-2, Wetlands and Floodplains. Where is the floodplain located?

0013-25 Table 2.6-2, Fish. For fish-bearing streams, the Riparian Reserve for NFS lands is 300' from the streambank and the CRG NSA stream buffer is 200' for SMA and 100' for GMA.

0013-26 Waterways and Water Quality/Floodplains and Wetlands, 2.7 Mitigation Measures. SWPPP — generally, wood chip wattles are preferred to silt fencing depending upon the site conditions, due to the potential for noxious weed seeds in the straw.

0013-27 "Delineate construction limits..." — consider expanding this to CRGNSA stream buffer distances or 100 feet, whichever is greater.

0013-28 "Conduct peak construction...." — add "or during" before "after a large rain or snowmelt event."

0013-29 "Locate material storage..." — also outside of Riparian Reserves.

0013-30 What is the difference between priority and sensitive habitats as used in this table? It would be useful to elaborate and include riparian areas.

0013-31 "Avoid siting new structures....." — within CRGNSA stream buffers or Riparian Reserves (for NFS land).

0013-32 "Restrict vehicle refueling..." — and outside of CRGNSA stream buffers or Riparian Reserves (for NFS land).

0013-33 "Reduce erosion at stream crossings..." - add to the end of the sentence: "and by surfacing (i.e. adding pit run) approaches to fords up to the first drainage feature or where the road drains away from the crossing."

0013-34 Add a mitigation that says to retain and stockpile 18" DBH trees or larger that are located on NFS lands as is practicable and maintain lengths of 30' or greater as is practicable.

0013-35 "Locate staging areas…" –add "or paved"

0013-36 3.3.2 Environmental Consequences—Proposed Action, Soils: p. 3-36, second paragraph — In appropriate locations, out sloping roads may be a good way to add drainage in the form of sheet flow. As this requires maintenance it may not be appropriate in some locations for safety purposes, but it is a drainage method to consider.

0013-37 3.3.2 Environmental Consequences—Proposed Action, Soils: P. 3-36, third paragraph —it would be preferable to not use PCP for poles located within stream buffers.

0013-38 **3.5.1** Affected Environment - Surface Water Resources CRGNSA water resource buffers vary from the 100 feet used and depend on whether the site is located in GMA and SMA. Riparian reserved widths apply to NFS land.

0013-39 **3.5.1** Affected Environment - Surface Water Resources While only perennial and ephemeral streams are listed, some of these streams may be intermittent as well.

0013-40 **3.5.1** Affected Environment - Surface Water Resources Are the Category 4 and 5 impaired streams taken from the 2010 or the 2012 integrated report? The 2012 report also lists Harphan Creek as Category 5 for Biological Criteria.

0013-41 **3.5.1** Affected Environment - Surface Water Resources Top of p. 3-55 — Does "The Management Plan" refer to the CRGNSA Management Plan? If so, this statement about the 100 foot buffer is incorrect. The buffers vary depending upon the stream flow regime and wetland size, and whether the site is in GMA or SMA. The Forest Service can provide a table that summarizes these buffers. GMA generally has 100 foot buffers for perennial or fish=bearing streams but-this actually—varies if the-channel—is intermittent or the wetland is greater than an acre or for ponds.

0013-42 3.5.2 Environmental Consequences—Proposed Action, Surface Water Resources — It would be useful to include the number of structures within CRGNSA water resources buffers and Riparian Reserves in this section.

0013-43 3.5.2 Environmental Consequences—Proposed Action, For the trees removed, generally the trees that are within the primary shade zone of perennial streams are the ones of concern for potential effects to stream temperature. This zone varies depending upon tree height and slope; however, it is primarily < 60 feet from the stream edge. It would be good to include the number of trees either within the primary shade zone of a perennial stream or within 60 feet of perennial streams. However, since there will be no more than 4 trees on any one stream removed, this is likely not to affect stream shade and therefore temperature.

0013-44 3.5.2 Environmental Consequences—Proposed Action, For the streams located within stream buffers, it would be recommended to have a mitigation that allows this construction only to occur during the dry season.

0013-45 3.5.2 Environmental Consequences—Proposed Action, The excess soil excavated within stream buffers should not only be disposed of in upland areas, but should also be seeded with native seed mix.

0013-46 3.5.2 Environmental Consequences—Proposed Action, P. 3-59, second paragraph — one of the fords is located on Harphan Creek, which is listed on the 2012 integrated report as impaired for Biological Criteria. This ford already has additional mitigations, but this impairment listing should also be considered as to whether other mitigations are also appropriate.

0013-47 3.5.2 Environmental Consequences—Proposed Action, Will the culverts at East Springs be sized for the 100-year flood event? If not, please consider sizing all culverts and bridges for the 100—year flood event. Please ensure that all stream crossings on fish-bearing streams provide for fish passage.

0013-48 3.5.2 Environmental Consequences—Proposed Action, P. 3-60—This page also refers to impaired channels, of which Harphan Creek should be included.

0013-49 3.5.2 Environmental Consequences—Proposed Action, It is preferred to not use PCP treated wood or locate storage sites within water resource buffers or riparian areas.

0013-50 3.5.2 Environmental Consequences—Proposed Action, P. 3-62 — How many creosote poles are within CRGNSA water resource buffers or Riparian Reserves?

0013-51 3.6 Wetlands and Floodplains, 3.6.1 Affected Environment, Wetlands —p. 3-66 — These buffers are for GMA, not SMA. In addition, some waterways have buffers that vary from 100 feet, intermittent and ephemeral streams for example have 50 foot buffers. NFS land wetlands would have riparian reserves, if the riparian reserve is more restrictive than the CRGNSA water resource buffer.

0013-52 3.6 Wetlands and Floodplains,3.6.2 Environmental Consequences—Proposed Action, Wetlands — Is there a way to access structure 5/8 that would not entail driving through the wetland?

0013-53 3.6 Wetlands and Floodplains,3.6.2 Environmental Consequences—Proposed Action, Wetlands — How many acres of temporary disturbance in CRGNSA wetland buffers (including SMA) or Riparian Reserves?

0013-54 3.14 Cumulative Impacts, 3.14.1 Reasonably Foreseeable Projects, We are not aware of the USFS project analyzing effects of the Government Flats fire on two stewardship sales. This may have already occurred or was dropped from consideration. It would be worth following up the NEPA planner on the Mt. Hood, Casey Gatz, 541—352—1255. There may be other projects that he is aware of that may be needed for addition as well, depending on the analysis area used for the cumulative effects analysis. However, if the project falls within the CRGNSA boundary, then it would covered by the CRGNSA Planner, Robin Shoal.

0013-55 3.14 Cumulative Impacts, 3.14.1 Reasonably Foreseeable Projects, What is the analysis area used for cumulative effects? The Gorge? The watersheds associated with the project? Only projects that intersect the project area?

0013-56 3.14 Cumulative Impacts, 3.14.1 Reasonably Foreseeable Projects, With regard to forest management activities, do any Hood River County forest lands intersect the analysis area? If so, it may be worth following up with them and including their projects in this list.

0013-57 3.14 Cumulative Impacts, 3.14.2 Cumulative Impacts by Resource, Waterways and Water Quality – It is important to mention not only the effects of forest management associated roads, but also the effects of l-84 and the Union Pacific Railroad. These have had a major effect on waterways and water quality within the Columbia River Gorge.

0013-58 Fish and Wildlife, Table 2.7-1. The mitigation table does not include any potential mitigations for red tree voles, if any are found. Please include an appropriate mitigation for this species.

0013-59 Fish and Wildlife, Table 2.7-1. A 330-foot buffer for active raptor nests is very low. Current direction for activities near known bald eagle nests or communal winter roost sites is: minimum 0.25 mile buffer; 0.5 mile buffer (including aircraft) if a project is in line of sight of an active nest; 1.0 mile buffer for blasting.

0013-60 Fish and Wildlife, Page 3-79. The northern spotted owl nesting period is actually March 1 through Sept. 30, not March 15 through Sept 30.

0013-61 Fish and Wildlife, Appendix B, Table B1. Since the time Turnstone did the survey work, there have been updates to the Sensitive Species List. The updated list is included as an attachment to this document.

0013-62 Visual Quality Suggested mitigations: For all transmission structures, use local earth tone colors that will blend into the surrounding environment. Examples include dark brown for wooden structures, or weathered steel for metal structures.

0013-63 Visual Quality Suggested mitigations: Where gravel is needed for access roads and trails, use material sourced from local quarries or otherwise selected to blend in and eliminate contrast with surrounding natural rock and talus. Consider Permeon or other coloration depending on conditions.

0013-64 Visual Quality Suggested mitigations: Maintain existing screening vegetation to the greatest extent possible.

0013-65 Visual Quality Suggested mitigations: Maintain conifers along the skyline at or behind wooden powerline tower locations to soften their visual impact. Specifically along sky and ridgeline views as seen from KVAs (EA Figures C-9, C-16, C-17, C-18, C-20).

0013-66 Visual Quality Suggested mitigations: Minimize footprint of roads and access ways to powerlines where powerlines and ROW are not visually subordinate as seen from KVAs (in particular area southwest of Wyeth exit).

0013-67 Visual Quality Suggested mitigations: For erosion control measures such as silt fences, and for materials used for delineation of construction limits, consider materials made of natural materials (i.e., wood chip wattles) or earth tone colors, especially in locations that are highly visible.

0013-68 Cultural Resources, Table 2.6-2 on page 2-52. This table does not mention The Dalles to Sandy Wagon Road site (35HR128). We request that BPA review the site location records against the project maps (access-routes; new/replacement towers/pole locations) and confirm that portions of this road do not occur within the APE. Based on the EA maps, it appears that the proposal is to drive on part of the road, and that one pole to be replaced is within the road or immediately adjacent to it. Please review and update this table if necessary.

0013-69 Cultural Resources, Table 2.7-1 “Potential Mitigation Measures” page 2-65. Please add “Forest Service” to the list of agencies in the sentence that begins with ”Prepare and implement a mitigation plan for . . . in consultation with the State Historic Preservation Offices (SHPOs) and consulting Tribes.”

0013-70 Cultural Resources, Table 3.12-1 page 3-118. The fourth item in table “3SHR86" shows the site as ”unevaluated." The site was evaluated in 1981 and the Oregon SHPO determined that the site was ”not eligible.” Please correct this in the table. The Forest Service Archaeologist can provide documentation if necessary.

0013-71 Cultural Resources, Table 3.12-2. Built Resources. The third item on the “Historic Columbia River Highway” table shows as “eligible.” This is true, but the site is also ”Listed." We suggest this should be changed from “eligible” to “listed."

0013-72 Cultural Resources, In addition to the general statements in the EA regarding the implementation of mitigation measures, the Forest Service is aware that there may be a Programmatic Agreement between BPA, SHPO, and the Advisory Council (plus affected property owners) that will outline steps to be taken by BPA to resolve the adverse effects to the historic transmission line.

Response to Comment BonHR16160013: U.S. Forest Service

0013-1 Comment noted.

0013-2 Comment noted. The language in the EA has been corrected.

0013-3 Comment noted. The language in the EA has been corrected.

0013-4 Due to the project area topography and the high likelihood of adverse weather conditions in the months suggested by the commenter, construction activities would be extremely difficult if not at times impossible during these months and thus has not been proposed. In addition, construction during these months would likely cause greater impacts to other resources from increased soil and vegetation disturbance associated with wet weather conditions. To reduce disruption to recreational users in the area, BPA would halt construct activities during peak use times, such as weekends (see Table 2.7-1 of the EA). BPA and the construction contractor also would work with the US Forest Service, Oregon State Parks, and other interested parties in the area to develop an appropriate notification process, which may include trail head signage, webpage posting, and flaggers to minimize unforeseen disruptions to recreationists.

0013-5 The proposed project does not include any trail realignment or reconstruction beyond what is already discussed in the EA. In Section 3.2.2 of the EA, the potential recreational impacts from improvements to portions of public trails, totaling approximately 0.5 miles, as part of the proposed project are discussed. BPA is working with the US Forest Service to ensure that these improvements reflect US Forest Service trail design standards.

0013-6 Comment noted. As discussed in Section 3.2.2 of the EA, BPA would coordinate with the US Forest Service, Oregon State Parks, and other relevant entities to provide advance notification of temporary trail closures to trail users via a variety of communication methods (see also Table 2.7-1 of the EA).

0013-7 BPA has revised the Wilderness Areas discussion in Section 3.1, *Land Use and Transportation*, of the EA to confirm that no part of the project, including the transmission line or access system would be within the designated Wilderness. Primary helicopter flight paths would not cross designated Wilderness.

0013-8 See response 0013-6. Short duration closures of these trails would be planned to minimize through-hiker disruption. Flaggers would be employed and construction would be halted at regular intervals to ensure hiker passage in these areas.

0013-9 As discussed in Section 3.1.2, *Land Use and Transportation, Environmental Consequences – Proposed Action*, BPA would install or improve gates at the entrances to access roads to prevent public access to the transmission line right-of-way. BPA has proposed new gates in several locations to discourage unauthorized access and would work with land managers to identify additional measures to limit unauthorized access as needed.

0013-10 Comment noted. The appropriate row in Table 3.2-2, *Summary of Construction-Related Recreation Impacts*, has been revised to state that BPA would work with the US Forest Service to post announcements of trail work in advance of construction to minimize recreation impacts.

0013-11 BPA proposes to use the road through the Eagle Creek Campground as a Direction of Travel to access the project's trail system. Because this road would be used to access trail work areas

where trail work would be completed by hand, standard trucks with minimal loads would travel through the area. In the unforeseen instance that BPA damages the road during project use, BPA would restore the road to pre-project condition.

0013-12 BPA's contractor would be required to obtain Federal Aviation Administration approval of a project-specific Congested Area Plan that meets regulatory and safety standards. The Congested Area Plan would outline safety measures, such as the use of flaggers and spotters, when flying external cargo loads over congested areas.

0013-13 The proposed schedule and timing of construction is discussed in Section 2.1.11, *Anticipated Construction Schedule*. Construction seasons are generally about seven months in duration (late spring to early fall) and would occur from 2018 through 2021.

0013-14 BPA's contractor would implement a traffic control plan that would identify needed traffic closures and flaggers. BPA would coordinate any short-term or long-term closures with the Oregon Department of Transportation, county transportation departments, and underlying land managers and owners.

0013-15 No power outages at Wyeth Campground associated with the proposed project are anticipated. Additional outage information is provided in Section 2.1.10, *Transmission Line Outages.*

0013-16 See response 0013-12.

0013-17 No removal of Oregon white oak trees is proposed; however, if oak tree removal is required, BPA would work with the appropriate landowner or manager and/or ODFW to determine the appropriate replanting techniques.

0013-18 BPA is working with underlying land managers, including the US Forest Service and Oregon State Parks, and land owners to determine appropriate seed mixes.

0013-19 Excess soils would be spread onsite or trucked off-site. Soils spread onsite would be stabilized and revegetated in a manner similar to other disturbance areas. Excess soil excavated within stream buffers would not only be disposed of in upland areas, but would also be seeded with a native seed mix. No long-term, permanent impacts to visual resource is expected to result from excess soils. Table 2.7-1 includes multiple mitigation and minimization measures that would be used at construction sites to stabilize exposed soils and prevent erosion/sedimentation into nearby streams, such as use of sediment control devices until all disturbed sites are revegetated, and conducting peak construction activities during the dry season.

0013-20 Section 3.5, *Waterways and Water Quality*, of the EA has been revised to clarify information concerning structures within 100 feet of streams.

0013-21 Section 3.5, *Waterways and Water Quality*, of the EA has been revised to clarify information concerning structures within National Scenic Area and Riparian Reserve buffers.

0013-22 Section 3.5, *Waterways and Water Quality*, of the EA has been revised to clarify information concerning tree removal near streams.

0013-23 Table 2.6-2, *Wetlands and Floodplains*, The No Action description has been revised to clarify the meaning of the first sentence.

0013-24 Table 2.6-2, *Wetlands and Floodplains*, The No Action description has been revised to provide a location for the 100-year floodplain of Indian Creek.

0013-25 Section 3.5, *Waterways and Water Quality*, and Section 3.6, *Wetlands and Floodplains* of the EA have been revised to include the buffer information provided by the commenter.

0013-26 Comment noted. The mitigation measure has been revised to incorporate the commenter's suggestion.

0013-27 Comment noted. The mitigation measure has been revised to incorporate the commenter's suggestion.

0013-28 Comment noted. The mitigation measure has been revised to incorporate the commenter's suggestion.

0013-29 Comment noted. The mitigation measure has been revised to incorporate the commenter's suggestion.

0013-30 "Sensitive Areas" are generally defined as wetlands, riparian areas, culturally sensitive areas, and streams. "Priority Habitats" include the 11 habitat types identified in the National Scenic Area Management Plan as sensitive or rare wildlife habitats. Priority habitats within the project area include talus, mature forest, cliffs, pastures, and riparian areas. Table 2.7-1 has been revised to clarify the meaning of the two terms.

0013-31 Comment noted. The mitigation measure has been revised to incorporate the commenter's suggestion.

0013-32 Comment noted. The mitigation measure has been revised to incorporate the commenter's suggestion.

0013-33 Comment noted. The mitigation measure has been revised to incorporate the commenter's suggestion.

0013-34 Table 2.7-1 has been updated to reflect that BPA would work with the US Forest Service to retain and stockpile desired length trees as practical and safe.

0013-35 Comment noted. The mitigation measure has been revised to incorporate the commenter's suggestion.

0013-36 BPA has incorporated outsloping into the access road designs.

0013-37 Comment noted. For any replacement activities within stream buffers, the wood pole structures would largely be replaced in the same location. Please see response to 0009-2, 0009-3 and Section 3.5.2, *Environmental Consequences – Proposed Action, Groundwater* Subsection. The EPA concluded that because PCP adsorbs to soils and degrades relatively rapidly in the environment, PCP usage on utility poles is not likely to contaminate groundwater, except in situations where the bottom of the pole is directly in contact with the water table. None of the project structures would intersect shallow groundwater in the project area; therefore, there is a low risk that PCPs would enter groundwater that contributes to surface water quality.

0013-38 Waterbody buffer information has been revised in Section 3.5, *Waterways and Water Quality*, to reflect the different buffers for GMA, SMA, and Riparian Reserves.

0013-39 Comment noted. BPA conducted a wetland and waterbody delineation throughout the entire project area to location and classify wetlands and waterbodies.

0013-40 Section 3.5, *Waterways and Water Quality*, has been updated to reflect that Harphan Creek is listed as a Category 5 waterbody for biological criteria.

0013-41 Comment noted. See response 0013-38.

0013-42 Comment noted. See response 0013-38 and Section 3.5, *Waterways and Water Quality*, in the EA regarding structure impacts relative to the various stream buffers.

0013-43 Comment noted. See response 0013-38 and Section 3.5, *Waterways and Water Quality*, in the EA regarding and tree removal within the various stream buffers.

0013-44 Table 2.7-1, *Potential Mitigation Measures*, includes mitigation measures that address the concerns raised in this comment. These include measures to conduct peak construction during the dry season, as much as possible, and to not allow construction in unstable soil conditions, such as after a large rain or snowmelt event.

0013-45 All disturbed areas would be reseeded with a native seed mix, a seed mix recommended by ODFW, or as agreed upon with land owners/land managers for use on their property.

0013-46 Measures proposed for Harphan Creek include ford construction during the in-water work window, the use of a temporary bridge during construction to minimize instream disturbance, and adherence to the requirements in the ODFW-approved fish passage plans.

0013-47 BPA is not proposing culvert work on any fish-bearing waterbodies. ODFW approved all fish-bearing waterbody crossing plans in October 2016.

0013-48 Section 3.5.2 subsection *Streams and Water Quality* has been updated to include Harphan Creek as an impaired waterbody.

0013-49 Comment noted. See responses 0009-3 and 0013-37.

0013-50 BPA is not proposing the use of creosote poles. See the response 0013-37 regarding the use of PCP-treated poles in buffer locations.

0013-51 Section 3.6, *Wetlands and Floodplains*, has been updated to correctly identify impacts within the GMA, SMA, and Riparian Reserve buffers.

0013-52 BPA would avoid impacting the wetland near structure 5/8.

0013-53 See response 0013-51.

0013-54 This reference to the North Fork Mill Creek Revised EA, which addressed the Government Flats fire, was removed from the list of reasonable foreseeable projects in Section 3.14.1 of the EA as the decision notice was signed in January 2016. No other reasonable foreseeable US Forest Service projects in the vicinity of the proposed project have been identified.

0013-55 The analysis area used for the cumulative effects analysis in Section 3.14, *Cumulative Effects,* varies by resource.

0013-56 BPA has not identified any Hood River County forest lands that intersect the cumulative effects analysis area.

0013-57 Section 3.14, *Cumulative Effects,* includes the effects of l-84 and the Union Pacific Railroad as effects of "past and current action." These actions are considered part of the Affected Environment.

0013-58 BPA conducted red tree vole field surveys in the summer of 2016 and did not identify any occurrences. Section 3.8 of the EA has been revised to provide this updated information.

0013-59 Table 2.7-1 has been revised to clarify mitigation measures that pertain to bald eagles.

0013-60 Section 3.8.1, *Wildlife, Affected Environment*, has been corrected as suggested by the commenter**.**

0013-61 BPA reviewed the updated species list and determined that the additional species have little to no potential to occur within the project area. BPA would continue to coordinate with the U.S. Forest Service biologists to address any future changes to species list that occur during project construction.

0013-62 As discussed in Section 3.9 and Appendix C of the EA, all structures along the transmission line would be comprised of either wood or weathering steel, both of which would appear to have a dark, earthen tone.

0013-63 As discussed in Section 3.9 of the EA, BPA would use materials from local quarries, as available, to source gravel and rock. Additionally, BPA would use Permeon on access roads to color-treat rock, if necessary, to better blend with the surrounding area (see Table 2.7-1 of the EA).

0013-64 Trees and other vegetation would be removed on a case-by-case basis as necessary to maintain safe clearance. Individual and small groupings of trees clearing would occur at various locations along the right-of-way; no large areas of trees would be cleared.

0013-65 See the response 0013-64.

0013-66 Workspaces would be reduced to the minimum size necessary.

0013-67 Any visual effect associated with silt fences or materials used to delineate construction limits would be temporary. Due to visibility and safety concerns, BPA would use materials that could be easily seen by construction crews to ensure that demarcations are visible and avoided as necessary.

0013-68 The archeological site referenced by the commenter is identified and discussed in Section 3.12 of the EA. This site is a publicly accessible trail that has been used by BPA for transmission line access for decades, and the continued use of the trail would not be expected to affect this site.

0013-69 US Forest Service has been added to the Table 2.7-1, *Potential Mitigation Measures*, list of agencies consulted with to develop mitigation for the project's effects to historic resources.

0013-70 Table 3.12-1 has been updated to show that site 3SHR86 is "not eligible".

0013-71 Table 3.12-2 has been updated to show that the "Historic Columbia River Highway" is "listed".

0013-72 BPA and consulting parties, including the US Forest Service, signed an MOA under Section 106 of the NHPA, which was completed on June 4, 2018, to address the project's adverse effects to the historic transmission line..