

In cooperation with the U.S. Forest Service

Hills Creek-Lookout Point Transmission Line Rebuild Project

Supplemental Environmental Assessment



October 2021

DOE/EA-1967



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Acronyms and Abbreviations

BPA	Bonneville Power Administration
Corps	U.S. Army Corps of Engineers
dB(A)	Decibels on the A-weighted scale
DBH	Diameter at breast height
DEQ	Oregon Department of Environmental Quality
DOE	U.S. Department of Energy
DSL	Oregon Department of State Lands
EA	Environmental assessment
ESA	Endangered Species Act
LRAPA	Lane Regional Air Protection Agency
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRF	Nesting, roosting, foraging
NRHP	National Register of Historic Properties
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
OHG	Overhead ground wire
PM	Particulate matter
PM-2.5	Particulate matter with a diameter of 2.5 micrometers or less
ROW	Right-of-Way
SHPO	State Historic Preservation Officer
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service

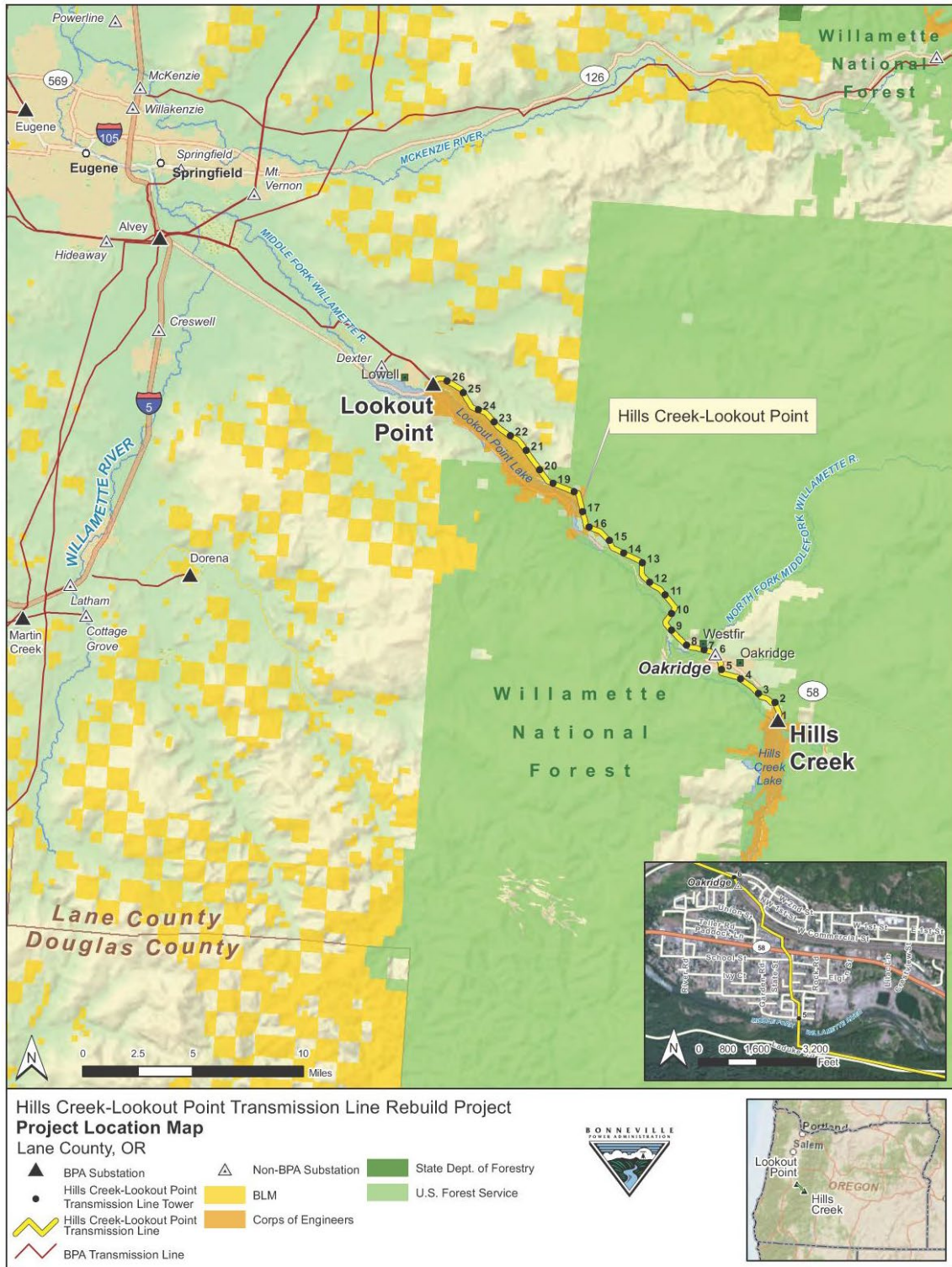
Chapter 1. Introduction

The Bonneville Power Administration (BPA) is a Federal agency that owns and operates more than 15,000 circuit miles of high-voltage transmission lines. The transmission lines move most of the Northwest's high-voltage power from facilities that generate the power to users throughout the region. BPA has obligations to ensure that its transmission system is safe, reliable, and has sufficient capability to serve its customers. For example, the Federal Columbia River Transmission System Act directs BPA to construct improvements, additions, and replacements to its transmission system that are necessary to maintain electrical stability and reliability, as well as to provide service to BPA's customers (16 United States Code [U.S.C.] § 838b(b-d)).

BPA has prepared this supplemental environmental assessment (SEA) to the 2017 *Hills Creek-Lookout Point Transmission Line Rebuild Project Final Environmental Assessment* (DOE/EA-1967) (2017 EA) to provide an analysis of potential impacts of project activities that were not included in the original proposed action and environmental assessment, pursuant to regulations implementing the National Environmental Policy Act (NEPA). The 2017 EA reviewed Hills Creek-Lookout Point 115-kilovolt (kV) transmission line rebuild project (Hills Creek-Lookout Point Rebuild Project or Project), which crosses through Lane County and the Willamette National Forest, generally between the cities of Oakridge and Lowell, Oregon (Figure 1-1). Following the completion of the 2017 EA, BPA decided to postpone the Hills Creek-Lookout Point Rebuild Project construction. BPA is now in the process of reviewing the Project plan and has reassessed the original engineering design and made changes to the Project that warrants a supplement to the 2017 EA.

BPA has prepared this SEA pursuant to regulations implementing the National Environmental Policy Act (NEPA), to assess the potential impacts of this proposal on the environment.

Figure 1-1. Hills Creek-Lookout Point Transmission Line Project Area Location Map



1.1 Purpose and Need for Agency Action

The Federal Columbia River Transmission System Act directs BPA to construct improvements, additions, and replacements to its transmission system that are necessary to maintain electrical stability and reliability, as well as to provide service to BPA's customers (16 United States Code [U.S.C.] § 838b(b-d)). BPA needs to ensure the integrity and reliability of the Hills Creek-Lookout Point transmission line that serves BPA's utility customers and communities in central western Oregon. The transmission line consists of structures, insulators, conductors (electrical wires), and other equipment used to transmit power.

The Hills Creek-Lookout Point 115-kilovolts (kV) transmission line was originally constructed in 1953, and many of the wood-pole structures are at the end of their service-life. BPA proposes to replace the wood-pole structures and associated structure components, and improve the access road system to maintain reliable electrical service and to avoid safety risks to the public and transmission line workers.

The wood pole structures that support the conductor have a typical service life of 55 to 60 years. Some of the individual poles that make up the structures on this line have been replaced over time due to normal deterioration. The original poles are past their expected service life and showing signs of deterioration. Conductors, insulators and hardware along portions of the transmission line have also reached the end of their service life.

Due to these conditions, portions of the line have begun to fail in recent years due to storm events, causing outages and requiring emergency repairs. The overall poor condition of the line creates a risk of additional outages that would adversely affect power delivery to BPA's customers in the Lane County area of Oregon. The need for emergency maintenance poses safety risks for BPA transmission line workers.

BPA needs safe and reliable access to the transmission line for transporting line crews, material, and equipment to rebuild the line and for ongoing maintenance and emergency repairs. Portions of the existing road system for this transmission line are in poor condition and in need of upgrades.

In meeting the need for action, BPA has identified the following purposes:

- Ensure that transmission system public safety and reliability standards set by the National Electric Safety Code (NESC) and North American Electric Reliability Corporation (NERC) are met.
- Continue to meet BPA's contractual and statutory obligations to supply safe, reliable power to serve its customers.
- Minimize impacts on the human environment.
- Demonstrate cost-effectiveness by rebuilding the transmission line instead of performing repairs on an as-needed basis.

1.2 Supplemental Environmental Analysis (SEA) Scope

The 2017 EA analyzed the proposed action, as well as a no action alternative. Upon completion of the final EA, BPA issued a Finding of No Significant Impact (FONSI) on September 5, 2017. In the development of the 2017 EA, the U.S. Forest Service (USFS) was a cooperating agency, as the agency needed to consider Project impacts that may occur where the transmission line crosses through the Willamette National Forest. On August 22, 2017, the USFS published a Decision Notice/Finding of No Significant Impact. The 2017 EA and FONSI are available at the Project's NEPA webpage ([Hills Creek-Lookout Point Transmission Line Rebuild \(DOE/EA-1967\) \(bpa.gov\)](#)).

The scope of this SEA is to identify Project activities that have changed since the publication of the 2017 EA and to analyze additional potential environmental effects that could result from implementation of the Project. Environmental effects analyzed in the 2017 EA that have not changed are incorporated by reference and will not be discussed further in this SEA.

The changes to the Project are access road improvements, temporary backup generator placement, staging area selection and additional tree removal, which will be discussed in greater detail in Chapter 2.

Chapter 2. Proposed Action and Alternatives

This chapter describes the changes made to the Proposed Action since the 2017 EA, and the No Action Alternative. This chapter compares how the modifications to the Proposed Action and the No Action Alternative continue to meet the Project purposes and summarizes the potential environmental effects of the changes on the alternatives.

The Proposed Action is to rebuild the transmission line, improve the access road system and foot-trail network, and to remove trees and other vegetation that pose a danger to safely and reliably operating the transmission line. Under the No Action Alternative, BPA would not rebuild the transmission line or upgrade access roads as a single coordinated project. BPA would continue to operate and maintain the existing transmission line in its current condition, replacing aged and rotting structures as they deteriorate, maintaining access roads to allow access to structures on an as-needed basis, and managing vegetation for safe operation.

2.1 Proposed Action Changes

The Proposed Action in this SEA differs from the 2017 EA in changes made to the access road improvement plan, inclusion of temporary backup generators, additional staging area locations, and additional tree removal in and along the right-of-way (ROW) corridor. See Table 2-1 through 2-4 for a summary of changes to the Proposed Action. All other components of the Proposed Action remain unchanged from what was described in the 2017 EA and are not discussed further in this chapter.

Table 2-1. Summary of Changes to the Proposed Action for Transmission Line Elements

Transmission Line Elements	2016 Draft EA Existing/New	2021 SEA Existing/New
Corridor length	26 miles	26 miles
Corridor ROW width	50 to 100 feet	50 to 100 feet
Total number of structures	224/223	224/221
Existing one-pole wood structures/New one-pole wood structures	13/0	13/0
Existing two-pole wood structures/New two-pole wood structures	166/151	166/149
Existing three-pole wood structures/New three-pole wood structures	43/53	43/55
Existing steel monopole structures/New steel monopole structures	0/16	0/16
Existing lattice-steel towers/New lattice-steel towers	2/3 (1 new; 2 unchanged)	2/3 (1 new; 2 unchanged)
Number of new structures w/guy wires	67	64
Conductor diameter	0.563" to 0.806"/0.914"	0.563" to 0.835"

Table 2-2. Summary of Changes to the Proposed Action for Access Road and Trail Construction

Access Road/Trail Activities	2016 Draft EA	2021 SEA
Total length of access road activities	57.3 miles	50.4 miles
New construction	0.1 mile	<0.1 mile
Reconstruction	1 mile	1.9 miles
Improvement	21.4 miles	15.4 miles
Direction of Travel	35.0 miles	31.3 miles
Access road abandonment and rehabilitation	0.5 mile	0.5 mile
Access trail construction	1.7 miles	1.8 miles
Construction	1.6 miles	1.7 miles
Reconstruction	0.1 mile	0.1 mile

Access Road/Trail Activities	2016 Draft EA	2021 SEA
Total gates	51	35
New gates	47	21
Repaired/replaced gates	22	14
Total fords	5	3
Repaired fords	3	3
Temporary bridges for construction access	3	3

Table 2-3. Summary of Changes to the Proposed Action for Access Rights and Easement Acquisition

Access Rights and Easement Acquisition	2016 Draft EA	2021 SEA
Acquire access road rights and easements for roads and trails	15.7 miles (36 acres)	23 miles (57.5 acres)
Acquire new ROW for transmission line realignment in line miles 2 and 3	4 acres	4 acres
Revert ROW back to USFS	4 acres	4 acres

Table 2-4. Summary of Changes to the Proposed Action for Vegetation Removal

Vegetation Removal	2016 Draft EA	2021 SEA
Removal or disturbance of low-growing vegetation within the transmission line ROW	About 51 acres	About 51 acres
Removal of trees inside and outside transmission line ROW	Estimated up to 2,700	Estimated up to 4,000
Removal of other trees along access roads	About 5	About 76

2.1.1 Access Roads

Since the 2017 EA, some of the Hills Creek-Lookout Point access road network has further deteriorated, resulting in additional proposed access road improvements. Conversely, some of the previously proposed access road work has been completed in the past five years during implementation of other projects or during emergency road repairs. As a result, the location of some of the access road work has shifted and the overall quantity of proposed access road improvements has decreased. Overall, new, improved, or reconstructed access roads would be reduced by about 7 miles when compared to that analyzed in the 2017 EA. Approximately 6 miles of access road improvements have been removed, and about 1 mile of access road reconstruction has been added to the Project. An additional 95 feet of new access road construction has been added to the Project, which accounts for locations where a new spur

road from the main access road would be constructed to access transmission structures.

Additionally, the number of new or improved fords and gates have been reduced from that originally proposed in 2017.

2.1.2 Backup Generators and Transformer

The City of Oakridge is supplied with power generated from the Lookout Point Dam to the west and Hills Creek Dam to the east. Backup power is supplied from BPA's main electrical grid west of the Lookout Point Dam. During construction, BPA would need to de-energize the segment of line from Oakridge to Lookout Point Dam, and the City of Oakridge would then be reliant on the electricity generated from the Hills Creek Dam. In the event that power could not be generated at Hills Creek Dam while the Lookout Point segment is out of service, the residents and businesses of Oakridge would be without electricity. To reduce the potential of extended periods of power outages in Oakridge, BPA proposes to temporarily install up to four trailer-mounted backup diesel generators, along with a temporary transformer, which would be in place when the Oakridge Substation to Lookout Point Substation are de-energized for the line rebuild construction. The temporary generators would only be used in the event that Hills Creek Dam could not generate power, which would primarily occur when the reservoir water height went below a threshold of 260 feet deep. The turbines at Hills Creek Dam risk being damaged if operated when the dam levels are below 260 feet. The reservoir level is influenced by snowpack and precipitation and is typically above the 260 foot depth until late September or early October. In the event, that there was low snowpack or a severe drought, the backup generators could start being operated in late July or August, to prevent damage to the turbines at Hills Creek Dam.

2.1.3 Public Involvement

On April 20, 2021, BPA notified the City of Oakridge and thirty-one adjacent landowners that could potentially be affected by noise levels produced by the backup generators. The notification letter described the level of noise that would occur in the event that the generators would be used, along with a request to provide comments back to BPA by May 20, 2021. Comments could be made via a comment card that was included with the letter, on BPA's website, via telephone or fax.

BPA received one individual comment from an adjacent landowner that was in support of the transmission line rebuild but had some questions about the design and tree removal. The commenter was not concerned about noise levels.

2.1.4 Vegetation Removal

Approximately seven years has passed since BPA originally identified trees that pose a potential hazard to the Hills Creek-Lookout Point transmission line. During that time, some of the trees that were originally proposed for removal have died and/or blown down by natural occurrences or have been removed for other projects or routine maintenance activities. From 2019 through 2020, BPA foresters re-surveyed the transmission line corridor to determine which trees are no longer standing, and to identify new trees with the potential to grow or fall into the conductor clearance zone. See Table 2-5 for changes to tree removal quantity.

Approximately 1,300 additional trees were identified along the entire length of the ROW corridor that

pose a danger to the transmission line and would be removed as part of the Project. About 400 of those trees would be removed in line mile 19 because the transmission line design requires taller towers in this location. The new conductor that would be installed is heavier and has a larger diameter, which creates a potential for the conductor to sag more between spans and swing further out during extreme wind events necessitating the removal of more trees in this area to prevent unplanned electrical outages.

Up to 76 trees would be removed in line miles 3, 8, 12 through 14, 16 through 17, 19 through 20, and 23 through 24 for access road work. See Table 2-5. Proposed Tree Removal Comparison

Table 2-5. Proposed Tree Removal Comparison

Description	2016 Quantity	2021 Quantity
Removal of trees inside and outside the transmission line ROW (e.g., Corridor Trees & Danger Trees)	Estimated up to 2700 trees	Estimated up to 4000 trees
Removal of other trees along access roads	5	76

For tree removal that would occur on USFS land, BPA and its contractors would follow Industrial Fire Precaution Levels (IFPL) or seek a waiver.

2.1.5 Construction Schedule

BPA proposes to begin construction of the rebuild Project in late spring or early summer of 2022. In 2022, BPA would rebuild the Hills Creek Dam to Oakridge Substation segment of the transmission line and complete the access road improvements for the majority of the entire access road network. In 2023, the Oakridge Substation to Lookout Point Dam section of the transmission line would be rebuilt.

If possible, tree clearing could begin in the late fall and winter of 2021/2022 between October 1 and March 1. Any remaining tree clearing would occur between July 15 and March 1 in 2022 and 2023, except in locations where there are Northern spotted owl occurrences that would require additional timing restrictions (see Section 3.6, Wildlife).

2.2 No Action Alternative

Under the No Action Alternative, BPA would not rebuild the transmission line or upgrade access roads, or culverts, as a single coordinated project. Construction activities associated with the Proposed Action would not occur. However, the reliability and safety concerns that prompted the need for the Proposed Action would remain. The structures that are currently located in the rock fall area of line mile two and the landslide area of line mile three would be susceptible to future damage from rock falls and landslides. BPA would continue to operate and maintain the existing transmission line in its current condition, replacing aged structures as they deteriorate or fail, maintaining access roads to allow access to structures on an as-needed basis, and managing vegetation for safe operation.

Given the current poor condition of the transmission line, the No Action Alternative would likely result in

more frequent and more disruptive outages and maintenance activities than has occurred in the past. It might be possible to plan some repairs, but many would likely occur on an emergency basis as the transmission line and access road system continues to deteriorate.

The overall scale and scope of the repairs that would be done under the No Action Alternative would be smaller than what is planned under the Proposed Action. The maintenance program addresses immediate needs to keep the transmission line functioning, and would likely not include more comprehensive improvements such as access road work to improve water runoff and culvert replacements. Access road work under the No Action Alternative would be limited to improvements necessary to allow access to specific structures for as-needed repairs and maintenance.

2.3 Comparison of Alternatives

Table 2-6 compares the Proposed Action and the No Action Alternative by the purposes of the Proposed Action described in Section 1. Table 2-7 summarizes the potential changes in environmental impacts discussed in this SEA.

Table 2-6. Comparison of the Proposed Action and No Action Alternative in Meeting Project Purposes

Purpose of Project	Proposed Action Alternative	No Action Alternative
Maintain or improve transmission system reliability to BPA and industry standards	Replacing deteriorating structures and associated equipment would help enhance reliability by reducing the risk of unplanned outages and the need for emergency repairs. Enhanced access roads would help ensure that emergency repairs could be made quickly.	Outdated and physically worn structures and associated equipment would pose a greater risk for unplanned outages and unreliable service. Emergency response times could increase due to access roads that are in poor condition.
Continue to meet BPA's contractual and statutory obligations to supply safe, reliable power to serve its customers	The rebuilt transmission line would help ensure that BPA will continue to meet its obligations to maintain a safe and reliable transmission system and to deliver power to its customers in and around Oakridge.	The existing line would continue to deteriorate and threaten system reliability and subsequent power delivery to customers in and around Oakridge.

Purpose of Project	Proposed Action Alternative	No Action Alternative
Minimize environmental impacts to the surrounding area	<p>Environmental impacts due to rebuilding the line would be primarily short-term and would be mitigated through appropriate mitigation measures described in Chapter 3.</p> <p>(See Table 2-7 for a summary of impacts for each resource.)</p>	<p>There would be no construction-related environmental impacts, but impacts would still occur and would be spread out over time as BPA has to replace deteriorating structures and associated equipment and repair access roads. As some of these repairs would likely be done on an emergency basis, there may not be time to accommodate planning efforts to coordinate with landowners or avoid or lessen impacts to environmental resources. Therefore, impacts to resources could eventually be greater with the No Action Alternative than with the Proposed Action. (See Table 2-7 for a summary of impacts for each resource.)</p>
Demonstrate cost-effectiveness of rebuilding the transmission line instead of performing repairs on an as-needed basis	<p>Total costs would be about \$16 million to \$19 million.</p>	<p>The cost of rebuilding the transmission line would not occur at one time, but would be spread over years as repairs are required. Because repairs and mobilization of construction crews would be done on an as-needed basis, the No Action Alternative would be less efficient and could eventually cost more than the Proposed Action.</p>

Table 2-7. Comparison of the Potential Environmental Impacts addressed in SEA by Alternative

Environmental Resource	Action	Impacts of the Additional Proposed Action Alternative	Impacts of the No Action Alternative
Recreation	Temporary installation of backup generators south of Oakridge Substation	Temporary traffic and/or noise increase at Diamond View Park	Unplanned park closures as needed for emergency repairs
	<i>Overall potential impact</i>	<i>Low</i>	<i>Low</i>
Vegetation	Tree removal	Up to 1,300 additional trees would be removed	Tree removal during routine maintenance activities and as needed for emergency repairs
	Spread of invasive plants	Increased potential for spread of invasive plants where additional danger trees are removed	Increased potential for spread of invasive plants during emergency repairs
	<i>Overall potential impact</i>	<i>Low</i>	<i>Low</i>
Streams and Fish	Tree removal within 150 feet of streams	Up to 150 additional trees would be removed	Tree removal during routine maintenance activities and as needed for emergency repairs
	Tree removal within 100 feet of ESA streams	47 trees total	Tree removal during routine maintenance activities and as needed for emergency repairs
	<i>Overall potential impact</i>	<i>Low</i>	<i>Low</i>
Wetlands	Reduction of permanent impacts to wetlands	0.05 acres less than reported in 2017 EA; current total 0.75 acres	Wetland plants or soils may be temporarily or permanently disturbed or altered during maintenance and emergency repairs
	Reduction of temporary impacts to wetlands	0.72 acres less than reported in 2017 EA; Current total 0.58 acres	
	<i>Overall potential impact</i>	<i>Low to moderate</i>	<i>Low</i>

Environmental Resource	Action	Impacts of the Additional Proposed Action Alternative	Impacts of the No Action Alternative
Wildlife	Additional removal of coniferous trees from Northern spotted owl habitat	186 additional trees	Tree removal during routine maintenance activities and as needed for emergency repairs
	Additional removal of trees from Northern spotted owl Designated Critical Habitat	26 additional trees	
	<i>Overall potential impact</i>	<i>Low</i>	<i>Low</i>
Cultural Resources	Ground disturbance of archaeological sites	None	Inadvertent disturbance during emergency repairs
	<i>Overall potential impact</i>	<i>No to Low</i>	<i>Low</i>
Visual Quality	Temporary visual changes	Temporary placement of backup generators adjacent to Diamond View Park in the City of Oakridge	Temporary placement of backup generators during emergency repairs
	<i>Overall potential impact</i>	<i>Low</i>	<i>Low</i>
Noise, Public Health and Safety	Temporary noise impacts from backup generators	Up to 69 decibels on the A-weighted scale (dBA) total	Up to 69dBA if backup generators are needed during an extended emergency power outage
	<i>Overall potential impact</i>	<i>Low to moderate</i>	<i>Low to moderate</i>
Air Quality	Temporary increase in release of particulate matter from the backup generators	Up to 0.2868 tons per year maximum	Up to 0.2868 tons per year if backup generators are needed during an extended emergency power outage
	<i>Overall potential impact</i>	<i>Low</i>	<i>Low</i>

Environmental Resource	Action	Impacts of the Additional Proposed Action Alternative	Impacts of the No Action Alternative
Greenhouse Gases	Additional carbon dioxide emissions from the backup generators	Up to 719 tons per year maximum	Up to 719 tons per year maximum if backup generators are needed during an extended emergency power outage
	Additional loss of carbon sequestration from tree removal	66 metric tons carbon dioxide equivalent	Tree removal during routine maintenance activities and as needed for emergency repairs
	<i>Overall potential impact</i>	<i>Low</i>	<i>Low</i>

2.4 Mitigation Measures

The proposed Project would implement the mitigation measures identified in the 2017 EA (Table 2-5) and Mitigation Action Plan. The following additional mitigation measures were identified based on changes to the proposed action of the Project:

- Plant native trees or tall shrubs in riparian areas with Endangered Species Act (ESA) -listed fish presence, at a 2:1 ratio for removal of trees less than 14 inches diameter at breast height (dbh) and at a 3:1 ration for removal of trees with a dbh of 14 inches or more, to offset impacts to large woody debris recruitment and loss of shade to those waterways.
- Bird flight diverters would be installed on the conductor and on overhead ground wire (OHG) in the following spans where the transmission line crosses water bodies and bird strikes are more likely to occur: OHG 1/1-1/5 and 26/3-26/9, conductor 1/1-1/2, 2/6-2/7, 4/9-5/1, 8/2-8/4, 9/2-9/7, 10/5-10/9, 11/1-11/6, 16/4-16/5, 17/5-17/6, 18/5-18/6, 20/8-20/9, 22/3-22/4, and 23/1-23/2.

2.5 Environmental Consultation, Review and Permit Requirements

Table 2-8 summarizes the additional environmental consultation that occurred for this SEA and the relevant Project information that demonstrates compliance with those requirements.

Table 2-8. Additional Environmental Consultation, Review and Permit Requirements for the Rebuild Project

Resource	Permit, Consultation and Compliance	Relevant Project Information
All	National Environmental Policy Act (NEPA) of 1969 42 U.S.C. § 4321 et seq.	BPA has prepared this SEA pursuant to implementing NEPA, which requires federal agencies to assess, consider and disclose the impacts that their actions may have on the environment before decisions are made or actions are taken.
Vegetation, Wildlife and Fish	Endangered Species Act (ESA) of 1973 16 U.S.C. § 1531 et seq.	<p>BPA prepared a Supplemental Biological Assessment to address additional impacts to ESA-listed fish, wildlife and plant species. BPA determined that the Project may affect, but is not likely to adversely affect Northern spotted owl. BPA received a letter of concurrence from US Fish and Wildlife Service (USFWS) on May 17, 2021.</p> <p>On April 29, 2021, BPA submitted an Action Implementation Form, describing Project activities that may affect ESA-listed anadromous fish, and adherence to the preferred design criteria as specified in the National Marine Fisheries Service (NMFS)/BPA Programmatic Biological Opinion for Standard Local Operating Procedures for Endangered Species to Administer Maintenance or Rebuild Projects for the Transmission Line and Road Access Actions which was finalized on September 22, 2016 (NMFS 2016).</p> <p>To date, BPA has communicated with NMFS via email. NMFS has indicated that they would approve BPA’s proposed access road improvements in ESA-fish streams and danger tree removal within 100-feet of streams that have ESA fish presence, provided that BPA mitigate for tree removal at a replanting ratio of 3:1 for trees that are 14-inches dbh or larger, if native shrubs are used.</p>
Vegetation, Wildlife and Fish	Fish and Wildlife Conservation Act 16 U.S.C. § 2901 et seq. Fish and Wildlife Coordination Act 16 U.S.C. § 661 et seq.	BPA has consulted with the USFWS, NMFS and Oregon Department of Fish and Wildlife (ODFW) and incorporated recommendations to avoid and minimize potential impacts on fish and wildlife resources.

Resource	Permit, Consultation and Compliance	Relevant Project Information
Vegetation, Wildlife and Fish	Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) of 1976 16 U.S.C. 1801 et seq.	Essential Fish Habitat (EFH) is administered under the amended Magnuson-Stevens Act; EFH for Upper Willamette River Chinook salmon is found within streams in the Project area. Compliance with the Magnuson-Stevens Act for Upper Willamette River Chinook salmon has been satisfied by utilizing the NMFS/BPA Programmatic <i>Biological Opinion for Standard Local Operating Procedures for Endangered Species to Administer Maintenance or Rebuild Projects for the Transmission Line and Road Access Actions</i> (and the associated impact analysis of the EFH) for this Project during Section 7 consultation with NMFS.
Vegetation, Wildlife and Fish	Oregon Fish Passage Law ORS 509.580 - 509.910 OAR 635, Division 412	BPA has consulted with ODFW and incorporated the ODFW biologist's recommendations to avoid and minimize potential impacts to fish and wildlife resources. One culvert would be reconstructed to be fish passable as part of the Project and three ford crossings would be improved. Site restoration measures would also be implemented after Project construction according to prescriptions for re-seeding and mulching disturbed areas, replanting trees and shrubs removed adjacent to the culvert replacement and ford improvements, and installation of native, low-growing shrubs in disturbed riparian areas within areas where BPA is releasing its easement (e.g., line mile three re-route). 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. Based on initial ODFW biologist input, the mitigation proposed by BPA would be consistent with ODFW's fish and wildlife habitat mitigation policy.
Vegetation, Wildlife and Fish	Northwest Forest Plan: Survey and Manage	The Project changes discussed in this SEA complies with Survey and Manage standards and guidelines. Additional surveys for great gray owl and peregrine falcon were conducted in 2021 and no detections were documented. Pre-construction surveys would be conducted for Western pond turtles, when warranted.

Resource	Permit, Consultation and Compliance	Relevant Project Information
Waters, Wetlands Protection	<p>Clean Water Act 33 U.S.C. § 1251 et seq.</p> <p>Floodplain/Wetlands Environmental Review Requirements 10 CFR 1022.12</p> <p>Protection of Wetlands Executive Order 11990</p> <p>OAR 141-085-690 (12)</p>	<p>BPA would obtain the necessary permits for this Project. BPA would prepare a Stormwater Pollution Prevention Plan to meet the requirements of the EPA Construction General Permit (February 16, 2012) at the direction of Oregon Department of Environmental Quality (DEQ). The EPA Construction General Permit also requires that BPA construction projects comply with water quality standards set by the state in OAR 340 Division-41.</p> <p>Applicants receiving a Section 404 permit from the US Army Corps of Engineers (Corps) are required to obtain a Section 401 water quality certification from DEQ through a joint application process. BPA will prepare a joint permit application for this Project, which would be reviewed by the Corps, DEQ, and Department of State Lands (DSL). BPA would not begin construction in regulated Waters of the US until after the application is approved by both regulatory authorities.</p>

Resource	Permit, Consultation and Compliance	Relevant Project Information
Cultural and Historic Resources	<p>Antiquities Act of 1906 16 U.S.C. § 431-433</p> <p>Historic Sites Act of 1935 16 U.S.C. § 461-467</p> <p>National Historic Preservation Act (NHPA), as amended, inclusive of Section 106 16 U.S.C. § 470 et seq.</p> <p>Archaeological Data Preservation Act of 1974 16 U.S.C. § 469 a-c</p> <p>Archaeological Resources Protection Act (ARPA) of 1979, as amended 16 U.S.C. § 470 aa-mm</p> <p>Native American Graves Protection and Repatriation Act (NAGPRA) 25 U.S.C. § 3001 et seq.</p> <p>American Indian Religious Freedom Act of 1978 42 U.S.C. § 1996</p> <p>Indian Sacred Sites Executive Order 13007</p>	<p>BPA conducted additional archaeological and above-ground historic resource surveys of the additional Area of Potential Effects (APE) added to the Project.</p> <p>BPA’s cultural resource contractor (Willamette Cultural Resources Associates) for the additional APE obtained ARPA permits when surveying on federally-managed lands.</p> <p>Several additional cultural resources were identified during the additional cultural surveys that took place in 2021; however the Project would not impact these resources as they would be avoided. Additionally, mitigation measures would exclude workers and equipment from going into cultural resource areas and an archaeological monitor would be onsite to ensure protection of those resources during construction activities in those locations.</p> <p>On July 28, 2021, BPA sent a No Adverse Effect determination for the additional cultural surveys that were conducted in 2020-2021 to the Oregon State Historic Preservation Office (SHPO), USFS, Corps, the Confederated Tribes of Siletz Indians of Oregon, Coquille Indian Tribe, Confederated Tribes of the Warm Springs Reservation, Cow Creek Band of Umpqua Tribe of Indians, the Confederated Tribes of Grand Ronde, and the Klamath Tribe. BPA did not receive any responses from any of the consulting parties listed above.</p>
Noise	<p>Noise Control Act of 1972 42 USC § 4901 et seq.</p> <p>City of Oakridge Noise Disturbance Ordinance 891</p>	<p>Noise levels from emergency equipment are typically exempt from local noise ordinances. The City of Oakridge’s noise disturbance ordinance requires noise permits for sounds that are plainly audible at levels of 80 decibels at 500 feet from the noise source. The noise produced by the backup generators would be far below 80 decibels at 500 feet from where they would be located. The backup generator addition to the Project would have temporary and low noise impacts.</p>

Resource	Permit, Consultation and Compliance	Relevant Project Information
Air Quality and Greenhouse Gases	Clean Air Act, as revised in 1990 42 USC § 4701 Final Mandatory Reporting of Greenhouse Gases Rule 40 CFR 98 Strengthening Federal Environmental, Energy, and Transportation Management Executive Order 13423 Federal Leadership in Environmental, Energy, and Economic Performance Executive Order 13514	If utilized, the backup generators would produce particulate matter, carbon dioxide, carbon monoxide, nitrous oxide and particulate matter (PM) below the significant thresholds identified by the Clean Air Act, as implemented by the Lane Regional Air Protection Agency. Greenhouse gases would continue to be below EPA's mandatory reporting threshold. Air quality and greenhouse gas impacts would continue to be low, localized and temporary.

Chapter 3. Affected Environment and Environmental Consequences

3.1 Resource Areas Screened for Changes and Impacts

The design changes made to the 2017 Proposed Action, were reviewed to determine impacts to environmental resources. This section provides a description of the affected environment and the cumulative impacts that could result from implementation of the additional Proposed Action alternative. The impact levels are characterized as high, moderate, low, or no impact. The impact levels are based on the analysis provided, which analyzes the potentially affected environment and degree of the effects (40 Code of Federal Regulations [CFR] 1501.3(b)).

Table 3-1 identifies resources initially considered for impact analysis. Not all of the resources present in the Project corridor would be affected by the current changes to the Project because there would either be no impacts or insignificant impacts on the resource from Project activities. Because these resources are not impacted by the revisions to the proposed Project, they have not been evaluated further.

Table 3-1. Summary of Resources Initially Screened for Impact Analysis

Resource Area	Changes to the Affected Environment Since the 2017 EA	Potential Impacts to Resource Areas from Changes to the Proposed Action
Land Use and Transportation	No Changes	The changes to the Proposed Action would not result in any additional impacts than those previously addressed in the 2017 EA.
Recreation	Minor Changes	Low impacts are further disclosed under Environmental Consequences.
Geology and Soils	No Changes	The changes to the Proposed Action would not result in any additional impacts than those previously addressed in the 2017 EA.
Vegetation	Moderate Changes	Moderate impacts are further disclosed under Environmental Consequences.

Streams and Fish	Minor Changes to Streams Minor Changes to Fish	Impacts are further disclosed under Environmental Consequences.
Floodplains and Groundwater	No Changes	The changes to the Proposed Action would not result in any additional impacts than those previously addressed in the 2017 EA.
Wetlands	Minor Changes	Low impacts are further disclosed under Environmental Consequences.
Wildlife	Minor Changes	Low impacts are further disclosed under Environmental Consequences.
Cultural Resources	Minor Changes	Low impacts are further disclosed under Environmental Consequences.
Visual Quality	Minor Changes	Temporary impacts from placement of backup generators housed inside trailers which would be visible to adjacent and nearby residents and park users but the generators would be consistent with the existing landscape that contains utility infrastructure associated with the substation.
Socioeconomics and Public Services	No Changes	The changes to the Proposed Action would not result in any additional impacts than those previously addressed in the 2017 EA.
Noise, Public Health and Safety	Minor Changes	Impacts are further disclosed under Environmental Consequences.
Air Quality	Minor Changes	Impacts are further disclosed under Environmental Consequences.
Greenhouse Gases	Minor Changes	Impacts are further disclosed under Environmental Consequences.
Cumulative Impacts	Minor Changes	Impacts are further disclosed under Environmental Consequences.

The following resource areas that may be affected by the additional Proposed Action are: recreation; vegetation; fish; wetlands; wildlife; cultural resources; noise; public health and safety; air quality; and greenhouse gases. Sections 3.2 through 3.9 address these resources further. Section 3.10 addresses any changes to the Project’s cumulative effects to these resources.

3.2 Recreation

3.2.1 Affected Environment

The backup generators and temporary transformer for the Project would be located partially in and adjacent to Diamond View Park, which is owned by the City of Oakridge. Diamond View Park is located in north Oakridge, and is surrounded by residential homes; with the exception of Lane Electric’s Oakridge Substation to the north and a railroad track that runs parallel to the park on the southwest side. The park is 2.5 acres in size and consists of a mowed field with a graveled parking area, a basketball court and a mountain biking practice course. BPA has a utility easement on the northwest side of the parcel for the Hills Creek-Lookout Point transmission line. A paved road provides access to the park, BPA’s transmission structures and the Oakridge Substation.

3.2.2 Environmental Consequences—Proposed Action Alternative

Approximately one-half acre of the park would be inaccessible when the temporary backup generators are in place. The entrance to the park may be temporarily closed for a few hours while the backup

generators and transformer are installed and there may be increased traffic in the area during that time. After placement of the equipment, the parking area, basketball court, and mountain biking course would still be available to park users. In the event that the backup generators were needed, the sound of the generators may affect some park users. Overall impacts to recreation would still be anticipated to be **low**.

3.2.3 Environmental Consequences—No Action Alternative

Under the No Action Alternative, impacts to recreation associated with the installation of backup generators and a temporary transformer would not occur at this time. However, as existing structures continue to deteriorate, unplanned electrical outages could occur and backup generators could be needed and placed at Diamond View Park, in the event that electricity to Oakridge could not be restored in a timely manner. If that occurred, potential impacts to recreational users of Diamond View Park could be similar to the Proposed Action (temporary park closures, limited-use of a portion of the park, and noise and dust during installation and removal). The No Action Alternative would result in **no-to-low** impacts to recreational users of Diamond View Park.

3.3 Vegetation

3.3.1 Affected Environment

Vegetation in the Project area has been extensively modified by forest practices, road and transmission line construction and maintenance, and rural residential development. Vegetation in the Project corridor includes coniferous forest, mixed coniferous/deciduous forest, riparian areas, and wetlands. The majority of the transmission line and access road network is located on federal lands managed by the USFS and the Army Corps of Engineers or on privately owned timberlands.

3.3.2 Environmental Consequences—Proposed Action Alternative

Approximately, 1,300 additional trees than were originally proposed in the 2017 EA would be cleared from the transmission ROW and adjacent edges along the 26-mile long ROW during construction. An additional 71 trees would be removed from areas near BPA access roads. About 400 of the ROW trees are concentrated in line mile 19, where the combination of steep slopes, taller transmission structures and heavier conductor necessitates increased tree removal at this location to prevent unplanned electrical outages resulting from conductor swing. The rest of the additional tree removal would be spread out along the remainder of the transmission line, with an average of 36 additional trees proposed for removal per line mile (144 total trees per line mile including the previously proposed tree removal). The majority of the trees would be felled and left onsite, except in locations where the underlying landowners have requested that the trees be removed from the site. In most cases, tree removal adjacent to the ROW would open up small forested areas to light, making these areas more vulnerable to invasion of weed species. Native understory plants that tend to grow in the shade may not grow as well in these forest openings. However, trees would be allowed to regrow, and the potential for increased weeds and decreased understory plants would be slight. BPA intends to remove the top and/or girdle 29 trees to create habitat trees (i.e. snags) on USFS land. Additionally, as mitigation BPA would plant new trees or tall shrubs at a 2:1 ratio for trees removed that are less than 14 inches dbh and

a 3:1 ratio for trees that are removed that are 14 inches dbh or more, in riparian areas to offset impacts to large woody debris recruitment and loss of shade to those waterways (see Table 2-5 of the 2017 EA). If any USFS Region 6 sensitive floral species are found during this project, they would be protected or mitigation measures would be implemented. Overall, impacts to vegetation from tree removal would be **low**.

3.3.3 Environmental Consequences—No Action Alternative

Under the No Action Alternative, the existing transmission line would not be rebuilt. However, vegetation maintenance and removal would still occur on a three-year rotation. Some diseased and damaged trees would likely fall during weather events. These activities would continue to result in **low** impacts from localized danger tree removal.

3.4 Streams and Fish

3.4.1 Affected Environment

Streams

The affected environment for streams has not changed substantially since the 2017 EA. The Project would still cross streams and rivers, including Middle Fork Willamette River, North Fork Middle Fork Willamette River, Buckhead Creek, Burnt Bridge Creek, and Hospital Creek and parallels the Lookout Point Lake. The Hills Creek Dam and Lookout Point Dam are still in operation and both features continue to influence watershed health. The Middle Fork Willamette Subbasin continues to have rivers and streams that do not meet Oregon Department of Environmental Quality's (DEQ) water standards for temperature and dissolved oxygen.

Fish

The affected environment for fish is largely unchanged since the 2017 EA. Various ESA-listed and non-listed fish species are present in the North and Middle Fork Willamette River watersheds that would be crossed by the proposed Project. Waterways containing ESA-listed fish species, including Upper Willamette Chinook (Threatened) are in the Project area.

3.4.2 Environmental Consequences—Proposed Action Alternative

Streams

Up to 475 trees would be removed within 150 feet of rivers, and perennial or intermittent streams, which is approximately 150 more trees than were analyzed in the 2017 EA. Most of these tree removals are scattered throughout the 26-mile length of the Project area, except line mile 19 where there is a concentrated area of proposed tree removal. The majority of the tree removal near streams would be along the edges of the ROW, and would not create new large openings in the tree canopy. Most of the tree removal would not be immediately adjacent to streams. In some locations, slight increases in water temperature may occur as a result of tree removal near streams. The majority of the trees would be cut in segments and left on site with the tree stumps and understory left intact. Large machinery would not be used to remove the trees, but rather workers would walk into the locations and cut the trees down

with a chainsaw; therefore, decreasing the overall amount of ground disturbance associated with tree removal. The ground surface would remain largely intact and erosion would be controlled using best management practices (BMPs) identified in the Project Stormwater Pollution Prevention Plan.

In line mile 19, there is an intermittent stream that runs perpendicular to the ROW. This unnamed stream is likely to be dry during much of the summer and would not be subject to temperature increases. However, slight increased soil erosion may occur at this location during rainy months, until the soils stabilize and are re-vegetated. Bare soils exposed after tree removal would be covered in weed-free straw and/or re-seeded with a soil erosion control seed mix and tackifier to prevent erosion.

Overall, the impacts to streams would be **low** because the removal of the trees would be mostly spread out along the entirety of the 26-mile long Project area and BMPs would be utilized to limit erosion and sedimentation of streams.

Fish

Forty-seven trees are proposed to be removed from within 100 feet of streams that are known to have ESA-listed fish. Of these, sixteen trees are proposed for removal at the three crossings of the Middle Fork Willamette River, rather than the seven trees that were originally proposed. Two trees are now proposed for removal at the North Fork, Middle Fork Willamette River crossing.

BPA would mitigate for the loss of those trees by planting native tree saplings or tall native shrubs at a 3:1 ratio for removal of trees with a dbh of 14 inches or more and a 2:1 ratio for removal of trees less than 14 inches dbh. The impacts to fish from improvements to fords and culvert replacement have not changed since the 2017 EA. Impacts to fish would be **low**.

3.4.3 Environmental Consequences—No Action Alternative

Streams

There would be no tree removal impacts to streams under the No Action Alternative at this time. As structures deteriorate, there could be increased emergency repair activities. Additionally, some diseased, damaged or deformed trees would eventually fall down on their own or be removed during annual vegetation maintenance activities. Temporary soil erosion and sedimentation of waterbodies could potentially occur as soils are exposed during repair activities. Impacts to streams under the No Action Alternative would be **none-to-low**.

Fish

There would be no construction-related impacts from the No Action Alternative at this time. The undersized culvert in line mile 19 would not be replaced and existing fords would not be improved. Access roads would not be improved to reduce runoff and potential sediment delivery to streams. Emergency access road repairs or culvert replacement may be needed as the existing access road network deteriorates, if repairs were done during high flow conditions. Impacts to fish from the No Action alternative could be **low-to-moderate**.

3.5 Wetlands

3.5.1 Affected Environment

As discussed in Section 3.5 of the 2017 EA, a wetland delineation of the Project area was conducted and 70 jurisdictional wetlands (protected under the Clean Water Act Section 404 or under state or local regulations) were identified. The wetland delineation included all areas that could possibly be impacted by Project activities, including structure replacements and access road improvements. The delineation was conducted in accordance with the Corps wetland delineation manual (U.S. Army Corps of Engineers 2010.). Wetland function assessments were conducted in the field, using the best professional judgment of the field investigators. Representative wetlands were assessed using the Oregon Rapid Wetland Assessment Protocol (Adamus 2010). Wetlands were also classified following the Cowardin Classification of Wetlands and Deepwater Habitats (Cowardin 1979).

The majority of the wetlands identified during field surveys were classified as palustrine, using the Cowardin classification. Palustrine wetlands are non-tidal wetlands that are not associated with lake shores or located within active river channels. Most of the wetlands are considered to be palustrine emergent, because the vegetation is dominated by herbaceous vegetation, while some of the wetlands along the ROW edges, and/or access roads are classified as Palustrine scrub-shrub wetlands.

3.5.2 Environmental Consequences—Proposed Action

The current changes to the Proposed Action have resulted in additional wetland impacts. Road work in line miles 13 and 22 would result in permanent removal of wetland vegetation and soils from installation of water bars on the access roads, which were not included in the 2017 EA. Conversely, culvert replacements in line mile 7, 9, 11 and 24 have been removed from the original Proposed Action; therefore resulting in fewer wetland impacts at those locations.

Wetland impacts due to culvert replacements and ford improvements have not changed. As disclosed in the prior EA, two culvert replacements and three ford improvements would result in permanent wetland impacts.

The number of pole replacements in and within 50-feet of wetlands has not changed. The removal and replacement of four wooden pole in wetlands would still result in approximately 20-square-feet (less than 0.001 acre) of permanent impacts and less than 25,000 square-feet (0.56 acres) of temporary impacts in the surrounding work area during pole installations. Pole wraps would be used for the below-ground portion of the wooden poles, to limit migration of wood preservatives into aquatic ecosystems. Helical guy wire anchors would be used to further reduce wetland impacts.

Construction would occur during the dry season when less water is present in wetlands. Wooden wetland mats would be utilized to reduce compaction of soils at these locations.

As discussed in the 2017 EA, tensioning of the line may temporarily impact wetlands in several locations. To the extent possible, wetland areas would be avoided, but if unavoidable, wetland mats would be used to limit soil compaction and damage to vegetative root systems.

Areas subject to temporary disturbance would be reseeded with wetland appropriate vegetation and

monitored for one year or more, and re-seeded as necessary, until revegetation provides 70 percent or more of the density of coverage that was provided by vegetation prior to commencement of earth-disturbing activities.

Less than 50 dispersed danger trees are proposed to be removed from wetlands, mostly black cottonwoods. Trees would be directionally felled away from the transmission line corridor and access roads. Tree removal would result in temporary impacts to wetland habitat functions associated with tree canopy loss. Impacts associated with tree removal would be considered temporary, as new trees would eventually grow in those locations.

Overall, the Project would result in 0.75 acres of permanent impacts and 0.58 acres of temporary impacts to wetlands, slightly less than what was proposed in the 2017 EA. Impacts to wetlands would continue to be **low-to-moderate** after mitigation.

To compensate for wetland impacts, BPA would purchase wetland mitigation bank credits and also make a Payment in Lieu to Oregon Department of State Lands.

3.5.3 Environmental Consequences—No Action Alternative

Under the No Action Alternative, there would be no impacts due to construction-related activities at this time. However, pole replacements and access road improvements would still likely be needed over time. Unplanned emergency pole replacement or access roadwork could occur during the wet season, which may result in greater impacts to wetlands. Since impacts would be incremental and undertaken on an emergency basis, there is also the potential that individual repairs would fall below regulatory thresholds resulting in less overall regulatory review and mitigation, resulting in an incremental loss of wetland functions and values that are not replaced through mitigation.

Impacts to wetlands, floodplains, or groundwater could potentially be slightly higher than under the Proposed Action, but still **low-to-moderate**.

3.6 Wildlife

3.6.1 Affected Environment

The affected environment for wildlife in the Project area is largely unchanged from the 2017 EA. The work would still occur in two ecoregions—Western Cascades Lowlands and Valleys of the Cascades and the Valley Foothills of the Willamette Valley. The existing habitat has not undergone any significant changes. Common wildlife and threatened and endangered species that may inhabit the Project area have not changed. Several species have been added to the USFS sensitive species list (Trumpeter swan, Morrison bumblebee, Suckley cuckoo bumblebee, and zigzag darner) (USFS 2019); however none of these species would be impacted by Project activities because there would be no substantial changes to their habitats.

Due to Project design changes and the length of time that the Project was on hold, additional surveys and analyses were warranted for the species discussed below. The discussion of other common and sensitive wildlife, including bald eagles, remain unchanged from those discussed in the 2017 EA.

Great Gray Owl

Great gray owls are a USFS survey and manage species. The Project area contains approximately 85 acres of potential foraging and nesting habitat for great gray owls that were surveyed prior to the 2017 EA release. These areas were re-surveyed by trained biologists in 2021, following the *Survey Protocol for Great Gray Owl (Strix nebulosa) within the Northwest Forest Plan Area* (Huff and Godwin 2016). No great gray owls were detected during six survey visits conducted between March 15 and June 15, 2021. Per the survey protocol, one season of surveys is sufficient to determine great gray owl presence or absence.

Pacific (Western) Pond Turtle

Pond turtles are a USFS sensitive species. As discussed in the 2017 EA, there are two known pond turtle habitat areas that occur within the Project area—one in line mile 10 in the Buckhead Wildlife Area and the other in Banister pond, located south of structures 15/4 to 15/5. There are also occurrence records at an excavated pond in the gravel yard, located near the Hills Creek Dam. Pond turtles may use upland habitats up to 1,500 feet from water bodies for egg laying, overwintering and dispersal.

American Peregrine Falcon

Peregrine falcons are a former endangered species and USFS sensitive species and remains a species of interest for the Willamette National Forest. They typically nest in sheer cliffs, and forage in open and forested habitats, often associated with riparian habitats. The Hospital Cliffs area, located approximately 0.1 miles from the transmission line corridor near line miles 13 and 14 were re-surveyed in 2021, following the survey methods specified in the *Proceedings from the Symposium on Peregrine Falcons in the Pacific Northwest* (USFS 1991) and *Monitoring Plan for the American Peregrine Falcon* (USFWS 2003). The site was surveyed for a period of 3.5 hours before sunset and 0.5 hour after sunset, two times during the survey season. No peregrine falcons were detected during the 2021 survey season. Peregrine falcon surveys will be conducted again in 2022 following the same methods.

Northern Spotted Owl

BPA conducted additional Northern spotted owl surveys from 2019 through 2021 to re-evaluate the potential impacts the Project could have on this ESA listed species. There are currently 18 known spotted owl home ranges that intersect the Project's action area, including a home range that was newly documented in 2015. Home ranges are 1.2 mile radius areas centered on occupied or historically occupied sites. Some of the owl sites have overlapping home ranges which occupy suitable habitat within the Project area. Spotted owl core areas are determined by a 0.5-mile buffer within which are nest patches or activity centers of approximately 70 acres of suitable owl habitat surrounding a nest location or a daytime roost location.

Beginning in 2019, BPA contracted trained biologists to conduct spotted owl surveys consistent with the two-year survey protocol outlined in the *2011 Protocol for surveying Proposed Management Activities That May Impact Northern Spotted Owls—2012 Revision* (USFWS 2011). No spotted owl occurrences were recorded in 2019. In 2020, one spotted owl was detected; however, a nest location was not located.

During the 2019 and 2020 surveys, there were many barred owls (*Strix varia*) detections in the Project area, which is a species whose range has expanded from the Midwest into the western states in the past several decades. Barred owls compete with spotted owls for territory and food resources. Additionally, barred owls are more aggressive than spotted owls and often disrupt spotted owl's breeding cycle. (USFWS 2021)

In 2021, pre-construction spotted owl surveys were completed. Pre-construction surveys are conducted where no spotted owl occurrences were recorded in the prior two-year survey cycle. No spotted owls were documented in 2021; however, a probable hybrid barred/spotted owl was documented. A nest location was not found for this individual. BPA consulted with U.S. Fish and Wildlife Service (USFWS) and USFS to determine how to proceed. USFWS stated that hybrid barred/spotted owl species are difficult to identify in the field but agreed with the field biologist that due to the feather striation patterns and vocalizations documented in the field, the species was likely a hybrid. Hybrid owls do not have ESA protections.

3.6.2 Environmental Consequences—Proposed Action Alternative

Great Gray Owl

Five additional trees are proposed to be removed from suitable great gray owl habitat, which could adversely affect the 65 acres of potential nesting habitat. However, these trees would be removed outside of the great gray owl's breeding period (March to July). Currently, there are no great gray owls occupying the Project area. As discussed in the 2017 EA, habitat alteration would continue to be minimal, and Project effects would not contribute to a trend towards federal listing or cause a loss of viability to the population or the species; therefore, impacts on great gray owl from Project activities would continue to be **low**.

Pacific (Western) Pond Turtle

The Proposed Action would not alter stream or pond habitat that pond turtles are known to occur in. If construction coincides with hatchling emergence, BPA would conduct pre-construction surveys within 1,500-feet of known habitat areas. If nests are located, BPA would mark those locations as no work zones during the hatchling emergence time period from April to July. If any hatchlings or adult turtles were located during construction activities, they would be relocated to suitable habitat outside the work area. Because the Proposed Action would not harm individuals or alter the low-gradient stream and pond habitat, Project effects would continue to not contribute to a trend towards federal listing or cause a loss of viability to the population or the species; therefore, the Proposed Action would have **low** impacts to Pacific pond turtle.

American Peregrine Falcon

The Proposed Action would not alter existing potential habitat for peregrine falcons. Additionally, the potential habitat was surveyed and no peregrines or nests were detected; therefore, construction noise would likely not disrupt nesting peregrine falcons or contribute to a trend towards federal listing or cause a loss of viability to the population or the species; therefore impacts to peregrine falcons from Project activities would be **low**.

Northern Spotted Owl

During the breeding period, nesting spotted owls and their young are generally limited to the immediate vicinity of the nest. Disturbance is any action resulting in distraction from normal spotted owl activities during the breeding period and is most likely to occur within a 0.25-mile radius of an activity center.

Project activities with the potential to disturb or disrupt nesting northern spotted owl include construction of structures (removal and replacement), road work and tree removal.

Disturbance associated with construction of transmission structures and access road improvements has not changed. BPA would avoid construction activities within a 0.25-mile radius of currently occupied owl sites (any occurrence locations identified during the 2019-2023 surveys and 2024 surveys-if needed) during the critical breeding period (March 1 to July 15). There continue to be no proposed Project activities within disturbance or disruption distances (0.25-mile radius) of any of the activity centers, other than the “Outlaw” activity center, where there would be about 2,500 linear feet of road improvements and four structure replacements (13/4, 13/5, 13/6, 13/7). This work would be scheduled to occur after July 15 and before March 1, unless an active nest is located. If any active nests are found, the work would occur between September 30 and before March 1, when the spotted owl breeding period is over.

Access road work more than 0.25 miles away from an active occupied owl site could include new road construction, reconstruction, improvements, roadside brushing, culvert cleaning or replacement, bridge installation, and gate replacement or installation. Road maintenance on well-traveled roads conducted during the breeding period has a low likelihood of disrupting nesting spotted owls.

BPA would enforce a 0.25-mile radius no-fly zone for type 2 helicopters around each currently occupied owl home range during the critical breeding period to minimize risk of disturbance. For large/transport (Type 1) helicopters, a 0.5-mile no-fly zone would be enforced through the breeding period (March 1 to September 30).

No trees within nest patches would be removed. Tree removal outside of nest patches would occur between July 16 and February 28, except in the event that new spotted owl active nests are located during the 2022 through 2023 surveys. For any newly identified active nest locations, chainsaw operation and tree felling would be prohibited from March 1 to July 15, within 65 yards of the nest location.

In line mile 19, the Bannister Creek and Rhoades Creek activity centers have an increase in proposed tree removal due to the current transmission line design. The Bannister Creek and Rhoades Creek activity centers overlap at this location; there would be 51 conifers removed from suitable nesting, roosting and foraging (NRF) habitat and 207 conifers removed from marginal NRF habitat. None of these trees are in northern spotted owl critical habitat. Details of changes to the total amount of tree removal within northern spotted owl home ranges are summarized in Table 3.2 below.

Table 3-2. Summary of Change to Effects for Impacts on Northern Spotted Owl Home Ranges

Home range and MSNO ¹	Change in effects	Rationale for Level of Impact	2015 Proposed Tree Removal Total	2021 Revised Proposed Tree Removal Total
Armet Cr. 2872	No change	Tree removal within <2 acres of NRF within home range does not downgrade habitat; no impact to core area; currently unoccupied	91	121
Bannister Cr. 3915	Minimal change	Tree removal within <2 acres of NRF within home range does not downgrade habitat; no impact to core area; currently unoccupied	174	584
Buckhead Cr. and Lower Buckhead Cr. 3944	No change	Tree removal within <2 acres of NRF within home range does not downgrade habitat; no impact to core area; currently unoccupied	109	132
Buckhead Mountain 2880	No change	No removal of NRF within home range or core area; currently unoccupied	0	0
City 1079	Minimal change	Tree removal within <2 acres of NRF within home range does not downgrade habitat; no impact to core area; currently unoccupied	569*	646*
City East 3017	No change	Tree removal within <2 acres of NRF within home range does not downgrade habitat; no impact to core area; currently unoccupied	586*	594*
Cloverpatch 4391	No change	Tree removal within <2 acres of NRF within home range does not downgrade habitat; no impact to core area; currently unoccupied	41	43
Duval Creek	No change	Tree removal within <2 acres of NRF within home range does not		

¹ MSNO = Master Site Number for tracking northern spotted owl sites

Home range and MSNO ¹	Change in effects	Rationale for Level of Impact	2015 Proposed Tree Removal Total	2021 Revised Proposed Tree Removal Total
Trib. 2878		downgrade habitat; no impact to core area; currently unoccupied	58	64
Hospital Cr. 2873	No change	Tree removal within <2 acres of NRF within the home range and core area does not downgrade habitat; currently unoccupied	87	82
Lower Gray Cr. 4454	No change	No removal of NRF within home range or core area; currently unoccupied	0	0
Lower School Cr. 3549	No change	Tree removal within <2 acres of NRF within home range does not downgrade habitat; no impact to core area; currently unoccupied	49	72
Oakridge Rd. Station 3058	No change	Tree removal within <2 acres of NRF within home range does not downgrade habitat; no impact to core area; currently unoccupied	4	44
Outlaw NA	No change	Tree removal within <2 acres of NRF within the home range and core area does not downgrade habitat; occupied in 2020-nesting status unknown	75	83
Pryor 2811	No change	Tree removal within <2 acres of NRF within the home range and core area does not downgrade habitat; currently unoccupied	7	8
Rhodes Cr. 2869	Minimal change, see discussion	Tree removal within <2 acres of NRF within the home range and core area does not downgrade habitat; currently unoccupied	163	501
Whitehead Creek #2 2893	No change	Tree removal within <2 acres of NRF within home range does not downgrade habitat; no impact to core area; currently unoccupied	27	49
Winberry Creek 2135	Minimal change	Tree removal within <2 acres of NRF within home range does not downgrade habitat; no impact to		

Home range and MSNO ¹	Change in effects	Rationale for Level of Impact	2015 Proposed Tree Removal Total	2021 Revised Proposed Tree Removal Total
		core area; currently unoccupied	26	110
WNF #255 3058	No change	Tree removal within <2 acres of NRF within home range does not downgrade habitat; no impact to core area; currently unoccupied	108	130

*includes trees to be cleared for transmission ROW realignment in line miles 2 and 3.

Northern Spotted Owl designated critical habitat would continue to be impacted by removal of trees that are either currently providing habitat or are on a trajectory to provide habitat in the future. Coniferous trees removed within habitat for northern spotted owl totals 157 trees within designated critical habitat.

Felling or topping of trees within designated Northern spotted owl critical habitat would ultimately reduce or remove the function of the tree by removing the tree's contribution to site-level canopy cover and causing an immediate change to the light and temperature regimes. Removal of those trees would slow the development suitable Northern spotted owl habitat within some areas of designated critical habitat.

Table 3.3 summarizes the diameter classes of the proposed tree removal within designated critical habitat, comparing the original to the current proposal.

Table 3-3. Comparison of Diameter of Trees to be Removed in Critical Habitat From Original 2016 Proposal to Current 2021 Proposal

Species	2016	2021	2016	2021	2016	2021	2016	2021	2016	2021
	<6"	<6"	16"-20"	16"-20"	21"-25"	21"-25"	26"-30"	26"-30"	31"-35"	31"-35"
Douglas Fir	41	48	23	45	15	17	11	11	2	1
Western Hemlock	2	11	0	1	0	0	0	0	0	0
Red Cedar	2	2	0	0	0	0	0	0	0	0
Bigleaf Maple	54	22	0	1	0	0	0	0	0	0
Cottonwood	1	3	0	2	0	2	0	0	0	0
Red Alder	0	0	0	0	0	0	0	0	0	0

Species	2016	2021	2016	2021	2016	2021	2016	2021	2016	2021
	<6"	<6"	16"-20"	16"-20"	21"-25"	21"-25"	26"-30"	26"-30"	31"-35"	31"-35"
Incense Cedar	7	12	2	5	1	3	0	1	0	0
Totals	107	98	25	54	16	22	11	12	2	1

The updated Project design would continue to minimize adverse impacts to northern spotted owl critical habitat by: minimizing the clearing of Douglas-fir, Sitka spruce, western hemlock, or western red-cedar trees to the greatest extent possible; and topping mature conifer trees within designated critical habitat when feasible, where they would otherwise be removed.

Because of the small scale of these impacts (up to 187 trees total), the Project is expected to have low impacts to the recovery functions of northern spotted owl critical habitat.

With implementation of mitigation measures and timing restrictions, as agreed upon with USFWS, impacts on northern spotted owl and its critical habitat would continue to be **low**.

3.6.3 Environmental Consequences—No Action Alternative

Under the No Action Alternative, there would be no impacts to wildlife associated with construction or access road work at this time. The ongoing maintenance activities and repair of the existing structures would still occur, potentially on a more frequent and sometimes emergency basis due to the deteriorating condition of the existing transmission line. Emergency repairs could occur during critical breeding seasons, or in sensitive areas. Tree removal would occur during routine maintenance and as needed for emergency repairs. Overall, potential impacts to wildlife would be **low**.

3.7 Cultural Resources

3.7.1 Affected Environment

The affected environment for cultural resources has not changed significantly since described in the 2017 EA. The additional removal of trees, minor access road improvement revisions, and backup generator placement required BPA to further investigate the potential impacts to cultural and historical resources.

A review of the Oregon State Historic Preservation Office (SHPO) GIS files was conducted and 78 previously recorded archaeological sites and 91 isolates within approximately one mile of the survey area were identified. In early 2021, archaeologists surveyed all accessible areas of an additional 31.1 acres and performed 199 shovel test probes in the 2021 Area of Potential Effect (APE). Two pre-contact isolates and one historic isolate were newly recorded but are not eligible for listing on the National Register of Historic Places (NRHP) and no further management of these resources is necessary. One

previously recorded pre-contact archaeological site (35LA1232) boundary in the APE was expanded, as a result of the 2021 archaeological survey.

The 2021 cultural survey identified one additional built resource in the APE that is individually eligible for listing on the NRHP. The resource is a traditional style water tower constructed in 1948, as part of the former Pope and Talbot [Lumber] Mill in the City of Oakridge. The site location has been re-developed by the City of Oakridge and is currently used as an industrial park. BPA has interest in leasing space at this location to use as an equipment and materials staging location.

3.7.2 Environmental Consequences—Proposed Action

BPA would avoid impacts to both of the newly documented archaeological and historical resources in the Project area. The expanded boundary of the previously identified archaeological site would be protected by installation of a temporary fence and sensitive resource signage during construction activities to prevent workers and construction equipment from entering the location. Additionally, an archaeological monitor would be onsite during construction in those areas, to further ensure that resources are not impacted by Project activities. However, based on the proximity of previous finds, undiscovered artifacts could still be in the ground in these areas and could be moved or physically damaged by construction vehicles and access road work. Installation of new structures generally would not have an impact since they would be placed in the hole from which the existing structures would be removed, to the extent possible, and only a small amount of auguring would be required. No-to-low impact on cultural resources due to tree removal would be expected because there would be few trees removed in areas of known sites and only surface disturbance would occur.

The historical water tank would not be impacted by the Project and would not be directly altered in any way—no changes would occur to the aspects of integrity that would qualify the resource for eligibility (i.e., materials, design, workmanship, feeling, association, setting, or location). Therefore, the Proposed Action would have no impact on the historic structure.

Impacts to the known cultural resources in the Project area would be avoided with the mitigation measures discussed above, resulting in **no-to-low** impacts.

3.7.3 Environmental Consequences—No Action Alternative

Under the No Action Alternative, no construction impacts would occur to cultural resources. Impacts to cultural resources from ongoing operation and maintenance and emergency repairs could potentially include ground disturbance of archaeological sites, which could result in **low** impacts to cultural resources in the nearby vicinity.

3.8 Noise, Public Health, and Safety

3.8.1 Affected Environment

The Oakridge Substation and Diamond View Park, the proposed generator location, are bounded by railroad tracks that run northwest to southeast and residential homes are located to the north and east side of the park. About 31 landowners are adjacent to Diamond View Park and the Oakridge Substation.

Environmental noise is commonly measured in decibels on the A-weighted scale (dBA or *A-weighted decibels*). The A-weighted scale corresponds to the sound that humans are able to hear. Typical A-weighted sound levels from various sources are presented in Table 3.4.

Table 3-4. Typical Sound Levels for Various Noise Sources

Noise source	Sound level (dBA)
Jet takeoff (at 200 feet)	120
Shout (0.5 feet)	100
Truck (at 50 feet)	80
Gas lawnmower (at 100 feet)	70
Normal conversation (at 10 feet)	60
Traffic (at 50 feet)	50
Library	40
Soft whisper (at 15 feet)	30

Source: EPA 1971; EPA 1974.

3.8.2 Environmental Consequences—Proposed Action

BPA calculated the noise levels for the proposed generator model (Milton Caterpillar APS2000), to determine the audible noise levels of the generators at 150 feet and 300 feet, from their location. The generators would have a combined decibel level of 75 dBA at 150 feet away and 69 dBA at 300 feet away. Generator use would be based on the amount of electrical load that is needed in Oakridge and the surrounding communities. All of the generators could be operated to meet peak demand electrical loads; however, it is more likely that not all of them would be operated together at the same time. If all of the backup generators were operated at the same time during Project implementation, five residential properties would experience noise levels of about 69 dBA outside of their homes for an extended period of time—one week to a month or two depending on the duration of the unplanned electrical outage. The sound level would be further attenuated inside the adjacent residence’s houses. The backup generators would be in operation for 24 hours-a-day during that time and local residents, particularly those closest to the generators may be affected by the increased noise levels, which would be similar to hearing a gas lawnmower from 100 feet away (EPA 1971). Additionally, recreational users of Diamond View Park may be temporarily affected due to the noise levels, which would also be about 69 dBA at the park. Exposure to 70 dBA is generally considered a safe level for continuous noise exposure (EPA 1991). Prolonged exposure to decibel levels above 80 dBA can cause hearing loss (CDC 2021).

Conversely, the backup generators, if needed, would provide reliable electricity to customers in the area for the duration of any unplanned electrical outages at Hills Creek Dam. Without electricity, people could suffer, or even die, due to not being able to operate medical equipment, water pumps, air conditioners, etc. The maximum noise levels to adjacent residences and park users, would be on par with hearing a lawnmower operated from 100 feet away and hearing loss would not occur at the 69 dB noise level produced at 150 to 300 feet from the backup generator location, the placement and potential utilization of backup generators in Oakridge would result in **low-to-moderate** impacts.

3.8.3 Environmental Consequences—No Action Alternative

Under the No Action Alternative, there would be no backup generator impacts related to noise, public health and safety. The existing levels of audible noise would continue. If the Proposed Action were not implemented, the transmission line would continue to deteriorate, and the likelihood of unplanned power outages would increase.

The potential impacts to public health and safety, however, could be moderate because the existing line has aging components and deteriorating wood-pole structures, which poses risk of failure of the line and power outages. Local and regional power loss could potentially put public safety agencies, health providers, and businesses that rely on a steady source of power at risk. Although contingencies are in place to back-up power when failures occur potential impacts to public health and safety could be **moderate-to-high** if failures created loss of power for sustained periods of time.

3.9 Air Quality and Greenhouse Gasses

3.9.1 Affected Environment

EPA has designated the following air pollutants as a nationwide concern: carbon monoxide, particulate matter (PM) with a diameter of 10 micrometers or less, ozone, sulfur dioxide, lead and nitrogen dioxide. Under the Clean Air Act (42 USC § 7401 *et seq.*), EPA has established **National Ambient Air Quality Standards** that specify maximum allowable concentrations for each of the six criteria pollutants.

As discussed in the 2017 EA, the City of Oakridge continues to be rated as a nonattainment area, due to high levels of PM that has a diameter of 2.5 micrometers or less (PM-2.5) and PM10, which is largely due to wood burning as a source of heat for residential homes.

DEQ oversees the Oakridge PM-2.5 Nonattainment Area under the authority of the Lane Regional Air Protection Agency (LRAPA). The LRAPA oversees air quality conditions and enhancement programs in the cities of Eugene, Springfield, Cottage Grove, and Oakridge, and the Eugene-Springfield UGB (LRAPA 2012).

3.9.2 Environmental Consequences—Proposed Action

Direct Emissions

The current design includes placement of up to 4 backup diesel generators to be located in the City of Oakridge. If the backup generators are utilized, they would emit the following pollutants: carbon dioxide (greenhouse gas), carbon monoxide, nitrous dioxide, hydrocarbons and particulate matter.

The backup generators would only be in use in the event that power could not be supplied from existing sources. If needed, they would likely be operated at 75 percent of their total potential maximum load. Per LRAPA Title 12 regulations, none of the emissions from the backup generators would be considered significant emission rates (see Table 3-5). BPA and its contractors or agents would obtain any necessary air quality permits and/or provide notification to LRAPA for the placement and potential use of the backup generators. The generators would only be in place during construction activities for the Oakridge to Lookout Point segment of the line rebuild and if needed, would be operated for minimal periods of

time between late spring to early fall, when residential wood burning occurs less. Therefore, the impacts on air quality, particularly particulate matter levels, would be **low**.

Table 3-5. Potential Emissions from Backup Generators

Pollutant	LRAPA Title 12 Significant Emission Rates for Pollutants Regulated Under the Clean Air Act	Maximum Rate Backup Generators Would Emit (75% load capacity for 24 hours p/day for up to one month)
Carbon Dioxide (Greenhouse Gas)	75,000 tons p/year	718.56 tons p/year maximum
Carbon Monoxide	100 tons p/year	2.184 tons p/year maximum
Nitrogen Oxides (NOx) (Greenhouse Gas)	40 tons p/year	25.308 tons p/year maximum
Particulate Matter	25 tons p/year	0.2868 tons p/year maximum

(LRAPA 2019)

Tree Sequestration Reduction

An approximate additional 2 acres of permanent tree removal would occur, along the entire 26-mile long ROW corridor and access road network, which were not accounted for in the 2017 EA. If those trees were not removed and allowed to reach full maturity, they would have a carbon sequestration potential of up to 2,766 metric tons of carbon dioxide, which is the equivalent of carbon dioxide generated by 602 passenger vehicles. The small additional loss of carbon sequestration from additional tree removal would continue to result in a **low** effect on greenhouse gas concentrations. (EPA 2021)

3.9.3 Environmental Consequences—No Action Alternative

Under the No Action Alternative, backup generators would not be installed in the City of Oakridge, unless there was an extended unplanned electrical outage that required temporary generators be installed. Loss of carbon sequestration from tree removal would continue to occur during maintenance activities and emergency repairs. Overall, the expected impacts to air quality and potential loss of carbon sequestration by trees would be **low**.

3.10 Cumulative Impacts

Cumulative impacts are the impacts on the environment which result from the incremental impact of an action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time². This section addresses the additional cumulative impacts of the Proposed Action when combined with other

² Before this supplemental EA was issued for public review, the Council on Environmental Quality (CEQ) published a final rule updating its NEPA implementing regulations, including revisions to the definition of effects (i.e., impacts) and repealing the definition of cumulative effects. The new CEQ NEPA regulations are available at <https://ceq.doe.gov/laws-regulations/regulations.html>. CEQ indicated that its new regulations are effective as of September 14, 2020, and apply to any NEPA process begun after that effective date (CEQ Memorandum for Heads of Federal Departments and Agencies, July 16, 2020.). Because the draft and final EA for the Hills Creek-Lookout Point was begun before the effective date of the new CEQ NEPA regulations, this supplemental EA was prepared consistent with the pre-revision NEPA regulations.

past, present, and reasonably foreseeable future actions that were not known or discussed in the 2017 EA.

3.10.1 Identification of Past, Present and Reasonably Foreseeable Future Actions

The additional cumulative impacts analysis for this Proposed Action does not include an exhaustive list of individual past actions and instead, focuses on the impacts of existing projects, including the past impacts of those projects. Past actions that have adversely affected natural and human resources in the transmission ROW include forest management activities, highway and railroad construction, and commercial, industrial, ongoing operations of the dams, and residential development.

In the 2017 EA, BPA analyzed cumulative impacts from the current and future projects that included activities relating to dam operations, forest management, cell tower construction, roadway improvements, timber harvest on private lands, urban development/redevelopment and ongoing operation and maintenance of the BPA transmission line.

Additional reasonably foreseeable future actions within the Lookout Point watershed that were identified after the 2017 EA are described below:

- Oregon Department of Transportation Projects: Oregon Highway 58 Improvements consisting of culvert repair/replacements; bridge improvements consisting of seismic upgrades and widening of shoulders; a westbound passing lane, left turn median for Harbor drive, and a right turn deceleration lane for LaDuke Road is being planned. Construction work would begin in 2022 and continue through 2024. USFS Projects: *Greenwaters Trail Expansion* (T21S, R3E, Sections 21 and 22)—1.5 miles of new trails will be built, along with a ¼ mile connector trail to the FS-5852 road and other short connector trails. The trails would be 48-inch-wide and surfaced with gravel or remain native-surface in areas where adding gravel is inappropriate. This project is in the vicinity of transmission line mile 2 through 4 and is planned to occur in summer and fall of 2021. Additionally, the *Outlook Landscape Diversity Project* Finding of No Significant Impact was signed in 2017. The Outlook Landscape Diversity Project will thin areas of the forest and improve road conditions. On the north side of Lookout Point Lake and the north side of the Middle Fork Willamette River, there are three timber sales that came out of this EA that were part of the project, one of which closed in July 2020 (GNA Cain) and two of which are still ongoing (Armet and Burnt Stewardship).

3.10.2 Cumulative Impacts

Recreation

Past, present and future activities that affect recreation in the Project corridor are primarily associated with forest management, timber harvesting and road improvement work. The Highway 58 road work near the City of Oakridge; trail building near line mile 3 and 4; and forest thinning activities would have short-term, temporary disruptions to recreationists through temporary trail closures, reduced road access, and increased traffic from construction vehicles on the road.

The timing of these projects, primarily the Highway 58 and forest thinning projects, would overlap with

the construction of the BPA Project, and multiple recreational areas could be closed at the same time, or have limited accessibility. The BPA Project would contribute to effects on recreation through increased traffic due to construction workers and vehicles, traffic delays and temporary lane closures. Some recreational areas, including Buckhead Wildlife Area and Diamond View Park may be temporarily closed or have limited availability while the BPA Project construction activities are occurring at those locations. BPA would coordinate the construction schedule with the USFS recreation specialists to post alerts for construction activities that may impact users of recreational facilities; provide a construction schedule to potentially affected landowners; and maintain safe access to Diamond View Park and limit road closures to as short duration as possible during the installation of the backup generators. Further, there are multiple alternate recreational areas near the BPA Project area that could be accessed during the short time that the rebuild project would cause overlapping disruption to recreational users. Overall, the Project when combined with other past, present, and future activities would have a **low** cumulative impact on recreation because the impacts would be temporary and of a short-duration (primarily late spring through early fall of 2022 and 2023).

Vegetation

Past and present transmission line clearing and tree removal, access road construction and maintenance, and silvicultural activities have resulted in changes to the plant communities in the Project corridor and along the access road network. The diversity of native species has decreased and non-native vegetation, including noxious weeds have been introduced to the area. Other planned construction projects in the area, such as the forest thinning activities and the trail construction project, could result in vegetation disturbance and the introduction of noxious weeds in the same areas as the rebuild project. Other reasonably foreseeable future actions, such as BPA's vegetation maintenance, and ongoing forest management activities would continue to impact vegetation.

BPA Project vegetation clearing, crushing, spread of invasive plants, and general disturbance would be minimized through the implementation of the mitigation measures described in the 2017 EA (see Table 2-5 of the 2017 EA). The residual rebuild project impacts on vegetation would contribute to the overall impacts occurring from other reasonably foreseeable future actions in the region near the Project area. Because a relatively small amount of vegetation would be permanently converted to other uses or vegetation communities, the contribution of the rebuild project's residual effects to adverse changes in vegetation communities (reduction of native plant species and the spread of invasive plant species) when considered in addition to past, present, and other reasonably foreseeable projects would be **low**.

Streams and Fish

Ongoing forest management activities and road improvements continue to have the potential to impact water quality and fish through erosion and overland transport of suspended sediments to downstream waterbodies. Forest management activities would continue to have the most impacts on water quality. Habitat restoration projects in the watershed would offset some of the impacts from forest management activities by increasing riparian vegetation that would shade streams and hold back sediment from entering the waterway.

Operation of the North Fork Willamette River Dams, forest management, timber harvest, road

improvements and maintenance, residential and commercial development, rail and utility maintenance would continue to have effects on fish. Road improvements in the watershed, including replacement of undersized culvert replacements associated with the Highway 58 project, and other stormwater drainage road improvements could overall improve fish habitat by decreasing erosion and providing fish passage. Additionally, road improvements that reduce or eliminate erosion could decrease the amount of suspended sediments in fish habitat in the long-term.

The rebuild project would temporarily disturb streams, fish, and water quality during construction from runoff, erosion, sedimentation, riparian vegetation cutting, and in-water work activities. These impacts would be minimized through several measures (see Table 2-5 of the 2017 EA), including working with the National Marine Fisheries Service (NMFS) and Oregon Department of Fish and Wildlife to develop plans that reduce impacts to fish from road improvements. Further, for the small quantity of riparian clearing associated with the rebuild project, BPA would mitigate for the loss of trees within 100-feet of streams known to have ESA-listed fish by planting native tree saplings or tall native shrubs. Overall, based on the level of disturbance anticipated combined with the minimization measures, the incremental contribution of the Proposed Action, when combined with past, current, and future activities in the area, to cumulative impacts on streams and fish would be **low**.

Wetlands

The cumulative wetland impacts have not substantially changed since the 2017 EA. The changes to the rebuild project design have resulted in slightly less permanent wetland impact—currently there would be about 0.75 acres of permanent wetland loss, compared to the 0.8 acres that was originally assessed. BPA would mitigate for these wetland losses through purchase of wetland bank credits. Other proposed projects in the general area (culvert replacements associated with ODOT's Hwy 58 project, USFS trails and forest thinning) may result in additional wetland disturbance and fill, but are not anticipated to result in major impacts to wetlands because these planned projects would be required to secure appropriate permits and implement mitigation. With mitigation, the overall impacts to wetlands resulting from the Proposed Action when combined with past, current, and future activities in the area, is anticipated to be **low**.

Wildlife

Past and present forest management activities, trail development and access road construction would continue to have an impact on wildlife and habitat in the Project area. The original clearing of forestland for the utility corridor, along with development of public and private roads have resulted in a loss of wildlife habitat. Reasonably foreseeable future actions may have impacts to wildlife and may remove habitat. The Project tree removal combined with tree removal from USFS forest thinning activities would slightly reduce perching, foraging, and nesting habitat available to Northern spotted owls. Any other future activities that occur in Northern spotted owl habitat during the nesting period would contribute to cumulative impacts if those future activities were to cause behavioral disruptions or injury to the species.

The Proposed Action is located almost entirely within the existing ROW and minimal new road construction and transmission line re-routing would be consistent with what was discussed in the 2017

EA. Overall, cumulative impacts to wildlife from the Proposed Action would continue to be **low** because sufficient habitat is available in the Project corridor and surrounding forests.

Cultural Resources

Past and present actions that likely impacted cultural resources include forest management, access road and transmission line construction, dam construction, residential and commercial development. Like the Proposed Action, other reasonably foreseeable future projects in the Project corridor, including forest management, and transmission line maintenance activities, could impact undiscovered cultural resources. Federal projects and federally-funded projects are required to determine impacts to cultural resources, and mitigate for adverse effects to those resources. BPA would implement mitigation measures to avoid impacts to cultural resources, such as having an archaeological monitor on site when work occurs near known cultural sites and install a temporary barrier or fencing around known resources during construction. Because the Project would occur in a previously disturbed transmission ROW and access roads, and with the use of BMPs, the impacts to cultural resources when combined with past, current, and future activities in the area would be **low**.

Noise, Public Health and Safety

The cumulative impacts to noise, public health and safety are not substantially different than what was identified in the 2017 EA. The noise effects from reasonably foreseeable actions combined with the Project would have a **low** cumulative impact on noise because construction noise would be temporary, localized and would not likely overlap with construction noise from the other reasonably foreseeable projects occurring in the Project area. Additionally, the proposed location of the backup generators for the rebuild project is adjacent to a railroad crossing that is used daily. If the generators were used to support the rebuild project, the intermittent train noise in the area would be at a similar noise level as the operation of the generators and the temporary train noise would not result in a substantial increase above the generator noise.

Past and ongoing activities along the transmission line that could affect public health and safety, include timber harvesting, road work and residential and industrial development by exposure to hazardous materials and from construction workers operating heavy machinery. Overall, the Highway 58 road improvements would create a safer transportation route for highway users. The backup generators would ensure that the residents of Oakridge, Westfir and residents in the surrounding area do not have interruptions in electrical service during Project implementation; which would maintain public health and safety in those communities. The overall cumulative impacts to public health and safety from the Project would continue to be **low** because safety measures would be implemented during construction.

Air Quality

The cumulative impacts to air quality near the transmission line have not substantially changed since the 2017 EA. Past and present development, including vehicles traveling through the area, and periodic residential and agricultural burning have incrementally changed the air quality near the transmission line. Emissions from the potential use of the backup generators for the rebuild project would temporarily contribute to levels of carbon dioxide, carbon monoxide, nitrous dioxide, and particulate matter that have been generated from ongoing activities in the project area. However, the maximum

amount of these pollutants generated would be well below the significant levels identified in the Clean Air Act. The Proposed Action would have a **low** impact on cumulative impacts to air quality in the region because emissions from construction activities in the area would be temporary and would be released in the late spring through early fall, when air quality is generally better in the Project area and particulate matter release from residential burning is lower.

Greenhouse Gases

The cumulative impacts to greenhouse gases would be slightly higher than was discussed in the 2017 EA, if the backup generators are deployed during an electrical outage. All contributions to greenhouse gas emissions are important, as they contribute to global greenhouse gas concentrations and climate change. However, the small amount of greenhouse gases that the backup generators would contribute to the cumulative impacts on the atmosphere would overall be **low**.

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Appendix A
Map of Backup Generator Audible Noise Extent

