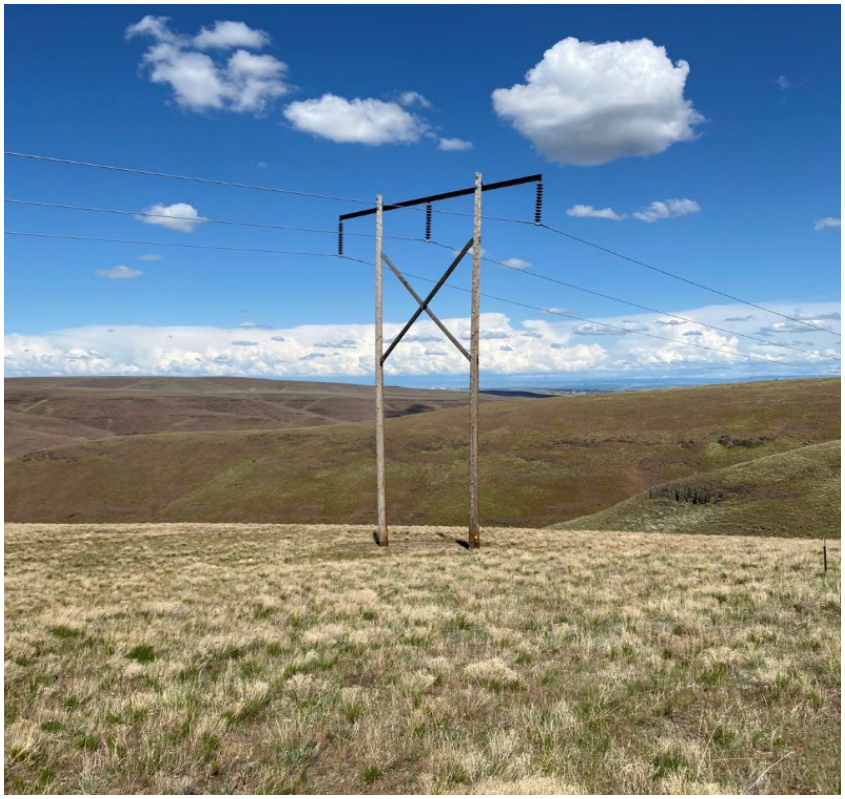
BONNEVILLE POWER ADMINISTRATION

McNary-Roundup No. 1 Transmission Line Rebuild Project Resource Report



May 20, 2026

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Abbreviations

AOL	ahead-on-line
APE	Area of Potential Effects
BMP	best management practice
BOL	back-on-line
BPA	Bonneville Power Administration
CFR	Code of Federal Regulations
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
dBA	A-weighted decibel
DPS	distinct population segment
EFH	essential fish habitat
EFSC	Oregon Energy Facility Siting Council
EMF	electric and magnetic field
EPNdB	effective perceived noise in decibels
EPNL	effective perceived noise level
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FR	Federal Register
G	gauss
GHG	greenhouse gas
HPRCSIT	Historic Properties of Cultural and Religious Significance to Indian Tribes
I-84	Interstate 84
kV	kilovolts
kV/m	kilovolts per meter
mG	milligauss
NEP	non-essential, experimental population
NEPA	National Environmental Policy Act
NESC	National Electric Safety Code
NRCS	Natural Resources Conservation Service (U.S. Department of Agriculture)
NRHP	National Register of Historic Places
ODFW	Oregon Department of Fish and Wildlife

OHGW	overhead ground wire
OHSD	Oregon Historic Sites Database
OR DOA	Oregon Department of Agriculture
OR DEQ	Oregon Department of Environmental Quality
OR DOGAMI	Oregon Department of Geology and Mineral Industries
PCP	pentachlorophenol
PNW	Pacific Northwest
project	McNary-Roundup Rebuild Project
ROW	right-of-way
SHPO	State Historic Preservation Office
SLIDO	Statewide Landslide Information Database for Oregon
TCP	Traditional Cultural Place
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
V/m	volts per meter
WAGS	Washington ground squirrels

1 Proposed Action

Bonneville Power Administration (BPA) is a federal power marketing agency that owns and operates more than 15,000 circuit miles of high-voltage transmission lines in the Pacific Northwest. BPA transmission lines move most of the region's high-voltage electricity from facilities that generate 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.

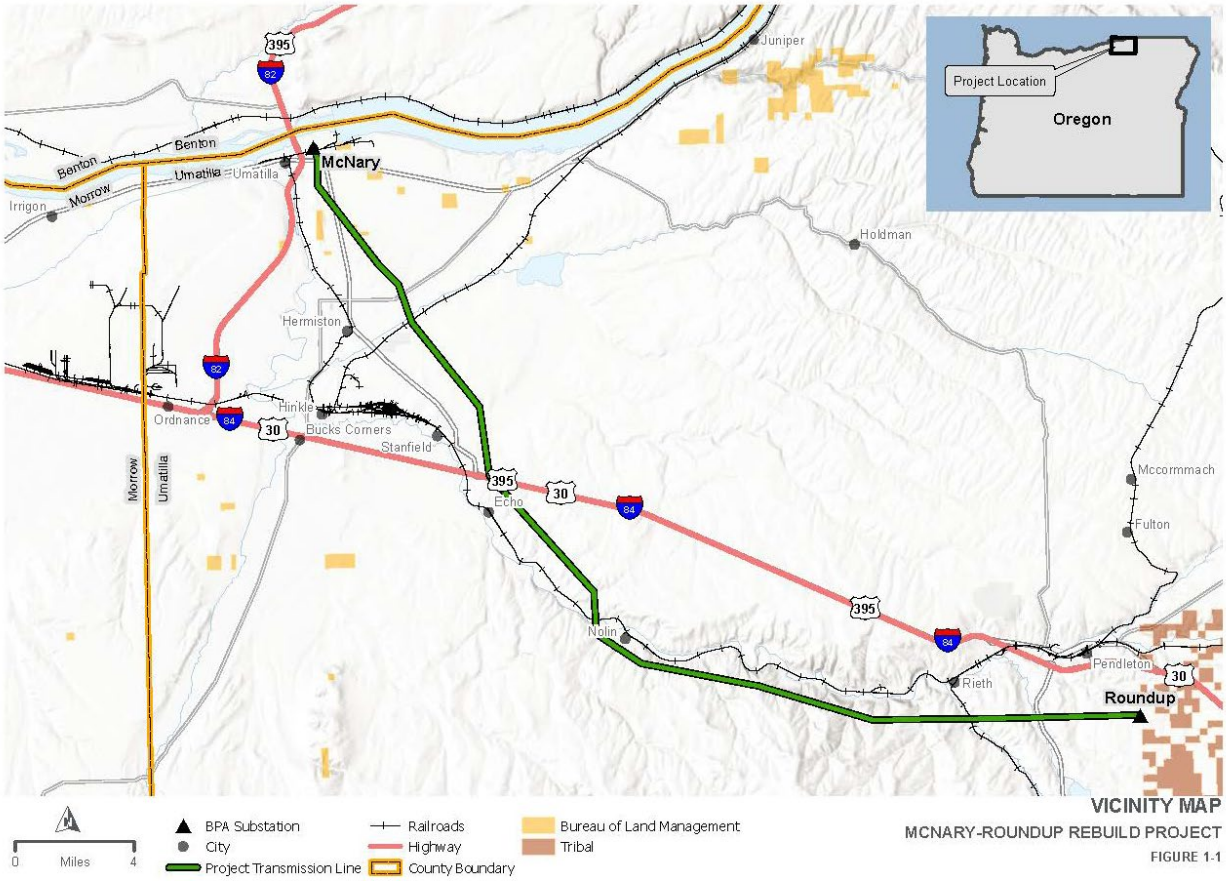
BPA's Proposed Action (the McNary-Roundup Rebuild Project, or the project) is to rebuild an existing transmission line, the approximately 38.5-mile-long McNary-Roundup No. 1, 230-kilovolt (KV) wood-pole transmission line in Umatilla County, Oregon (Figure 1-1). The line begins at BPA's McNary Substation in Umatilla, Oregon, and ends at BPA's existing Roundup Substation near Pendleton, Oregon. The project would replace wood-pole structures that support the transmission line and other line components and enhance the access road system.

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 and provide service to BPA's customers (16 United States Code [U.S.C.] § 838b(b)–(d)). BPA must ensure the integrity and reliability of the McNary-Roundup No. 1 transmission line that serves BPA's customers in eastern Oregon. The transmission line consists of wood-pole structures, steel-lattice towers, phase conductors (electrical wires), insulator hardware assemblies, and other equipment used to transmit electric power.

The 230-kV McNary-Roundup No. 1 transmission line has been in service for approximately 70 years. In general, transmission line wood poles have a service life of 55 to 60 years, at which point they are usually replaced due to age, rot, or other forms of deterioration. Many structures on the transmission line have reached the end of their service lives, are physically worn, and in places, are structurally unsound. As the structures age, repairs are needed more frequently; emergency repairs often do not allow time to accommodate planning efforts and are not an efficient and cost-effective approach to maintaining the transmission line.

BPA also requires safe and reliable access to each transmission structure along the line for transporting crews, materials, and equipment to rebuild the line and for ongoing maintenance and emergency repairs. Portions of the road system that BPA uses to access the transmission line corridor are in poor condition and need repair, including uneven and eroded travel surfaces, insufficient water control (e.g., water bars, drain dips, and culverts), and lack of access to certain structures.

Figure 1-1. McNary-Roundup Rebuild Project Vicinity Map



1.1 Existing Transmission Line and Ongoing Maintenance

The existing 38.5-mile-long, 230-kV McNary-Roundup No. 1 transmission line runs between BPA's McNary Substation in Umatilla, Oregon, to BPA's Roundup Substation near Pendleton, Oregon (Figure 1-1). Substations are fenced electrical yards that contain the switching, connections, transformers, communications, and other equipment needed to operate a transmission line. The transmission line corridor and access roads are entirely within Umatilla County, Oregon, between the communities of Umatilla, Hermiston, and Pendleton. Table 1-1 lists the basic characteristics of the line.

The existing 230-kV transmission line consists of two- and three-pole, wood, H-frame structures, with many of the wood-pole structures supported by guy wires to increase structure stability (Figure 1-2). The line has three conductors (one conductor per phase) that span between structures, attached to each structure by insulator hardware assemblies attached to steel crossarms. The transmission line also has two overhead ground wires (OHGW) within one mile of the substations on each end. OHGW is a protective wire strung above the conductors to shield them from lightning.

The transmission line operates within a 250-foot-wide right-of-way (ROW) corridor consisting of BPA easements (i.e., rights to use land owned by another) or other authorizations with the underlying

landowners to operate and maintain the transmission line and access roads to the corridor. The transmission line crosses over a mixture of land ownership and uses, including private residential, private agricultural, city/municipal, Bureau of Land Management mixed-use, and natural shrub-steppe habitats. The transmission line ROW also borders land acquired by the Department of the Interior and held in trust for the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) approximately 1 mile before the east terminus at the Roundup Substation.

Table 1-1. Existing Transmission Line Details

Characteristic	Details
Transmission line (corridor)	38.5 miles long
Right-of-way corridor	250 feet wide
H-frame wood pole structure height	70 to 130 feet above ground-level
Operating voltage	230 kilovolts
Conductors and other overhead lines	Three single-phase conductors and two overhead ground wires within one mile of substations at each end

Figure 1-2. Existing Structures in the ROW

1.1.1 Maintenance and Vegetation Management

BPA conducts routine periodic inspections, maintenance, and vegetation management along the 15,000-circuit-mile federal transmission system in the Pacific Northwest, including the McNary-Roundup No. 1 transmission line corridor. As needed, BPA performs programmatic and site-specific environmental reviews for transmission system operation and maintenance actions, including work on transmission structures, access roads, and ROW vegetation management.

BPA conducts vegetation management along the ROW every 3 to 5 years to keep vegetation a safe distance from the conductor, maintain access to structures, and control noxious weeds. Depending on the vegetation type, environment, and landowner, a few different vegetation management methods

could be used: manual (e.g., hand-pulling, clippers, chainsaws), mechanical (e.g., roller-choppers, brush-hog), or chemical (e.g., herbicides).

Vegetation management includes keeping trees and other tall growing vegetation from growing within the transmission line ROW, conducting invasive plant control, and removing trees inside and outside the ROW that have the potential to grow or fall into the line. BPA identifies trees requiring removal by evaluating tree height and growth potential, how the tree leans, stability, health (e.g., root pathogen damage), and storm damage potential. BPA most recently conducted vegetation management on the McNary-Roundup transmission line corridor in 2023, and it is scheduled for review and management in 3 years, in 2028.

1.2 Rebuild Actions

The Proposed Action would rebuild the 38.5-mile-long McNary-Roundup No. 1, 230-kV wood-pole transmission line. Along the line, the work would include:

- Removing and replacing all existing wood-pole line structures with new 230-kV, H-frame pole structures of similar construction (318 structures: 275 2-wood-pole structures; two 2-steel-pole structures; 37 3-wood-pole structures; and, four 3-steel-pole structures), complete with new conductors, steel crossarms, cross braces, guy wires, counterpoise, insulator hardware assemblies, and OHGW for the entire length of the line.
- Replacing 24 structures in new, shifted locations greater than 50 feet from the current structure to meet design requirements for conductor spans and ground clearance or to reduce impacts to sensitive resources.
- Protecting (and not replacing) two existing lattice-steel towers in place.
- Managing vegetation and removing danger trees on the existing project transmission line ROW corridor and access roads, as necessary, for construction access and safe and reliable operation of the rebuilt line.
- Maintaining and improving gravel access roads along the project line corridor including about 16 miles of road improvements, 12 miles of road reconstruction, and 4 miles of new gravel access roads.
- Constructing 54 permanent structure landings.
- Using temporary laydown areas, material yards, and tensioning sites for pulling and tensioning conductors and OHGW.
- Using temporary landing zones and laydown areas for helicopters to install OHGW, bird diverters, and marker balls. Helicopters may also be used to transport old structure poles offsite after removal.
- Installing, improving, repairing, or replacing 31 gates, 11 culverts, and 22 fords.
- Removing existing rigid jumpers and installing new seismic risers at McNary Substation and Roundup Substation inside bays impacted by the transmission line rebuild. The existing rod gaps would also be replaced with surge arresters. All work would be inside the existing substations.

BPA determined that it would be most cost-effective to rebuild most of the existing transmission line with new wood pole structures, same as existing, to continue to provide safe and reliable power to customers. The transmission line would continue to operate at 230 kV and be rebuilt in the existing ROW with new wood poles and updated components. Table 1-2 provides a summary of project elements.

Table 1-2. Summary of Project Elements

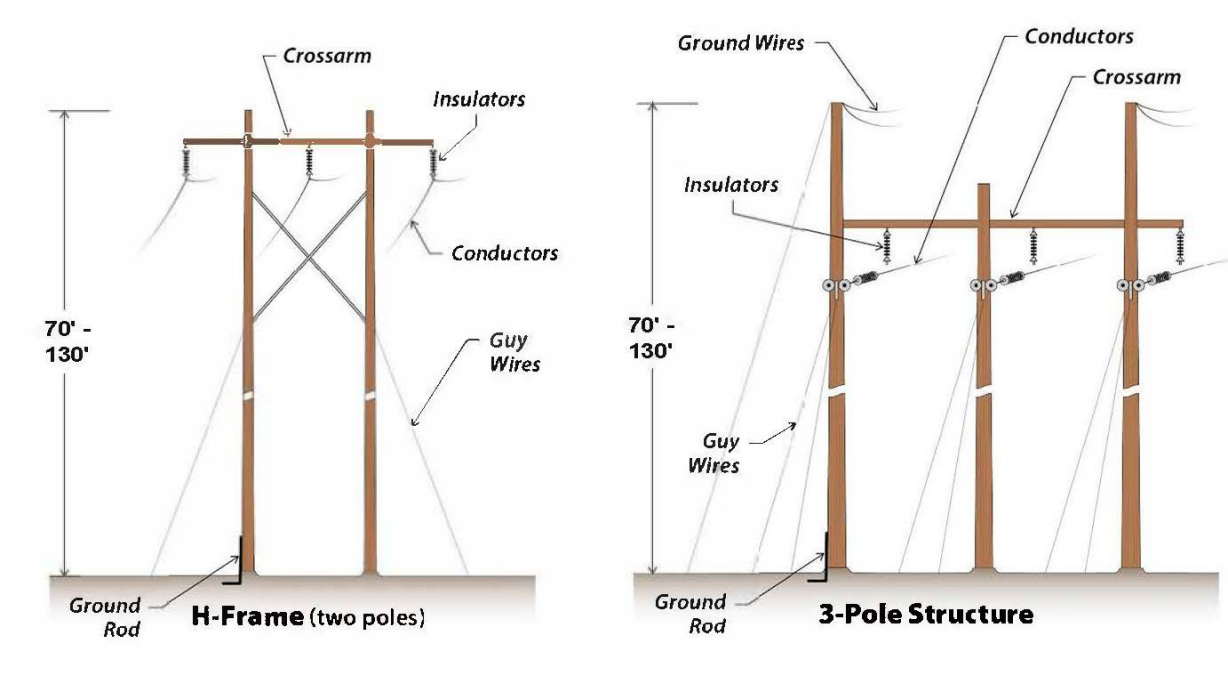
Project Element	Quantity
Transmission Line Structures	
New 230-kV H-frame, wood-pole line structures	312
New 230-kV light-duty steel-pole line structures	6
New structures replaced greater than 50 feet from existing location	24 (of 318 total)
New structures with guy wires and anchors	78 (of 318 total)
230-kV lattice-steel towers (protected in place, not replaced)	2
Structure landings – install new	54
Temporary Work Areas	
Material laydown and staging areas	11
Pulling and tensioning sites	52
Access Roads and Road Features	
New construction	4.0 miles
Reconstruction	12.0 miles
Improvement	16.2 miles
Direction of travel (existing roads that do not require improvements)	32.5 miles
Temporary	3.4 miles
New or replacement culvert	3
Improve or repair existing culvert	8
Fords – install new, replace, or repair	22
Drain dips – install new, replace, or repair	12
Gates – install new, replace, or repair	31
Vegetation Removal	
Number of danger trees removed within or outside ROW	2

1.2.1 Project Components

Transmission Line Structures

The Proposed Action would replace all existing wood-pole structures with new 230-kV, H-frame pole structures of similar 2-pole or 3-pole construction (318 structures: 275 2-wood-pole structures; two 2-steel-pole structures; 37 3-wood-pole structures; and, four 3-steel-pole structures), complete with three new single-phase conductors, two OHGWs, steel crossarms, cross braces, guys, anchors, structure grounding with ground rods and counterpoise, and insulator hardware assemblies (Figure 1-3). Two existing lattice-steel towers would be protected in place and re-used with upgraded insulators and the new conductors at a crossing over Interstate 84 (I-84).

Figure 1-3. Proposed Pole Structures



Cross arms hold up the conductors, and cross braces form an "X" between wood poles for stability. Insulators are strings of bell-shaped devices that prevent electricity from moving from the conductors to the structures and along to ground. The existing ceramic insulators would be replaced with glass insulators that can be more reflective depending on the angle of the viewer and the sun. BPA uses both insulator types, but glass insulators that meet BPA standards and specifications for line design are more commonly available.

The three existing 230-kV conductors would be replaced with modern transmission line conductors that are comparatively heavier than the current, original conductors. Based on engineering and design, 24 structures would be rebuilt in a new, shifted location that is greater than 50 feet from the current structure site (shifted ahead-on-line [AOL] or back-on-line [BOL]), either to support the new conductor and meet ground clearance requirements or to reduce impacts to sensitive resources. The height of the new wood-pole structures would also be 5 to 10 feet taller, on average, than existing, based on the design that would add two OHGWs on the top of each structure. The average height of the new wood-pole structures would be 80 feet above ground level. Structure heights vary based on design criteria and terrain, so they would range from a minimum height of 52 feet to a maximum of 106 feet above ground level. To mitigate against wildfire damage to the new rebuilt wood-pole structures, fire wraps would be standard and come pre-installed on the wood poles. Any damaged wraps would be repaired or re-installed on site.

Tangent structures, or those where the overhead conductor does not change direction and continues in a straight line from one structure to another, would be replaced in the same location or as close as possible to the existing structure. In some locations, holes would be re-used after the existing wood poles are removed. The holes would be cleaned out and re-augured slightly deeper to a total depth of 7 to 14 feet and a diameter of up to 4 feet to meet current pole set depth standards. The locations of the

new wood poles for structures may be shifted 5 to 10 feet away from existing structures within the ROW if the existing holes cannot be reused. New holes for wood poles would be dug to a depth of 7 to 14 feet and a diameter of up to 4 feet.

Angle structures, or those where the overhead conductor line changes direction, would be replaced in the same locations as the existing structures. Depending on design, the replacement poles at each structure would be installed either directly in the same holes or as close to the existing holes as feasible. In many locations, holes would be re-used after the existing wood poles are removed. The holes would be cleaned out and re-augured slightly deeper to a total depth of 7 to 14 feet and diameter up to 4 feet to meet current pole set depth standard. When wood poles are relocated or new holes are required, the holes would be dug to a depth of 7 to 14 feet and a diameter of up to 4 feet.

Depending on the site conditions and ability to remove wood poles completely, the existing poles would be completely removed, and the holes re-used for new poles or filled with either excess soil from the new pole holes or clean gravel. In areas where the replacement structure location has shifted BOL or AOL from the current structure, the holes would be backfilled with gravel and topsoil. Poles would be cut off only at ground level and left in place in sensitive areas or if site conditions do not allow for their safe removal. Construction crews can typically remove old wood poles with the help of a hydraulic or manual pole jack, when needed, to extricate the base of the pole from the ground. Excess soils excavated from existing wood-pole holes may contain wood preservatives and would be properly handled, removed, characterized, transported, and disposed of according to applicable regulations at a permitted facility that accepts those materials. Excess soil would be re-used on site, whenever possible, to backfill the holes as well as create a mound around the base of new wood poles to shed water from pooling around the base. Topsoil including gravel would be placed over the top of other backfill to promote revegetation.

Structure replacement activities at each wood-pole structure location would temporarily disturb an area approximately 100 feet by 150 feet (15,000 square feet; 0.3 acre) within the transmission line ROW. The temporary disturbance area may be reduced in certain circumstances (e.g., where work is near sensitive sites such as wetlands). The permanent disturbance area around each structure would average 15 by 15 feet occupied by wood-pole structures without guy wires, and 30 by 50 feet for structures with guy wires.

Guy wire anchor disturbance area varies based on type of anchor and other factors, including the structure height, angle, terrain, and type of anchor (plate or screw). Screw anchors should be specified for poles in or near wetlands, where feasible, or near other sensitive areas to minimize disturbance. A 50-foot-radius temporary ground disturbance area centered on the point the guy line intersects the ground would provide enough room for rubber-tired or track vehicles to excavate a pit for the new plate anchor. The hole for a typical guy plate anchor is approximately 10 feet deep and 4 feet square. Screw anchors would be installed using a drill on the back of a construction vehicle and would not require direct excavation and spoils like plate anchors but would have some ground disturbance at the surface, approximately 3 feet square by 1 to 2 feet deep. Existing guy lines at structures would be cut off a minimum of 1 foot below ground, leaving the existing plate anchor and short segment of guy line in the ground.

Structure landings would typically be leveled and rocked to provide work areas for people and equipment to safely access, construct, operate, and maintain the transmission line. Permanent structure landings would be re-established, improved, or constructed at specific locations, including dead-end structures and structures in steep or challenging terrain. A total of 54 permanent structure landings would be constructed. Structure landings can be up to 40 feet wide by 80 feet long, creating up to 0.1 acres of permanent disturbance each, but are designed to be a minimum size of 30 feet wide by 40 feet long (0.03 acres) due to steep terrain or other site limitations. Most structures can be rebuilt and maintained without permanent landings, including structures located in agricultural fields or residential areas, if crews can safely access the work area with equipment and perform the work on the existing terrain.

Replacement of Conductors, Overhead Ground Wire, and Counterpoise

Conductors are the wires on the structures that carry the electrical current. The three conductors on the line would be replaced with new 230-kV conductors that meet the design criteria. The connecting hardware and insulators, which are bell-shaped devices that prevent electricity from arcing from the conductors to the structures and traveling to the ground, would also be replaced.

The rebuilt line would also have two parallel OHGWs for the entire length of the line, whereas the existing line has OHGW only within 1 mile of substations on each end. The dual OHGWs protect the transmission line components and substation equipment from lightning strikes and would be installed along the entire transmission line, one on top of each outer wood pole (see Figure 1-3).

A series of wires, grounding rods, or both (called counterpoise) would be buried in the ground at every structure. These wires establish a low-resistance path to earth for lightning protection. The counterpoise would be installed in trenches approximately 30 inches deep and 24 inches wide and would vary in length from 15 to 100 feet, extending linearly below the conductors. The counterpoise would be installed within the surveyed work areas in ROW at every structure.

For safety, the National Electric Safety Code (NESC) establishes minimum conductor heights. BPA's transmission line design requirements exceed the NESC minimum conductor heights at all locations. For a new or rebuilt 230-kV transmission line, BPA requires a minimum conductor ground clearance of 28.5 feet with added height over crossings like roads and waterways. Replacement hardware components would be consistent with the Suggested Practices for Avian Protection on Power Lines prepared by the Avian Power Line Interaction Committee (2006).

Bird diverters, which are devices installed along utility lines to help birds see power lines and avoid collisions, would be placed on the outside conductors and both OHGW on spans where an increased risk of bird strikes exist (e.g., wetlands, rivers, flyways), where technically feasible. Most of these spans would have only the OHGW marked, as conductors are usually much more visible to birds than the OHGW. In the areas with the highest risk of bird strikes, both OHGW and conductors would be marked. The proposed spans to install bird diverters on the rebuilt transmission line are listed in Table 1-3. The transmission line structures are individually numbered by line mile and structure within the line mile (e.g., structure 3/4 is the fourth structure in the third mile of the transmission line).

Table 1-3. Proposed Transmission Line Spans with Bird Diverters

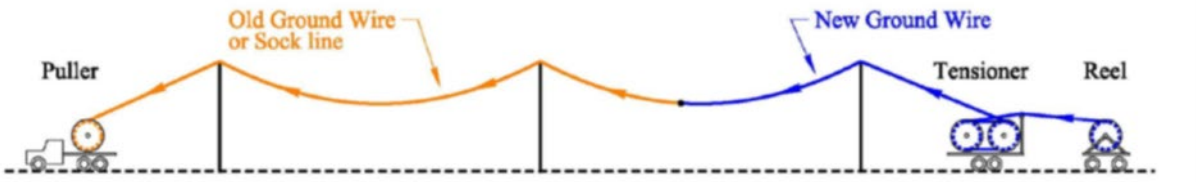
Start Structure	End Structure	# of Spans	Diverter Location(s)
2/4	2/6	2	OHGW only
3/1	3/2	1	OHGW only
8/1	8/3	2	OHGW only
13/1	13/2	1	OHGW only
20/9	21/1	1	Conductors & OHGW
23/4	23/5	1	OHGW only
25/6	25/7	1	OHGW only
28/8	28/9	1	OHGW only
30/5	30/6	1	Conductors & OHGW
31/7	32/1	1	OHGW only
34/4	34/6	2	Conductors & OHGW
36/7	36/8	1	Conductors & OHGW
38/3	38/4	1	OHGW only

Pulling and Tensioning Sites

Pulling and tensioning sites are required to install the new conductors and OHGWs and tension them according to design criteria before connecting them to mounting locations on transmission structures. The Proposed Action is designed to have 52 pulling and tensioning sites along the project corridor, typically located on either side of a dead-end transmission structure. The work area sites are typically the width of the right-of-way with a length three times longer than the height of the adjacent dead-end structure, a 3:1 ratio of height to pull length. Although sites are typically 250 feet by 250 feet (62,500 feet [1.4 acres]), the entire site would not be disturbed. Existing access roads would be utilized where possible to minimize disturbance areas and sites would be modified and reduced to the extent practicable near sensitive resources. The 52 sites would temporarily impact an estimated area of up to 75 acres total.

The process uses a temporary sock line in travelers placed on the new insulator assemblies or on top of the wood poles to pull the new conductor or ground wire, respectively, between the new structures (Figure 1-4). The temporary sock line may be installed on the newly replaced structures using a helicopter or drone. The sock line is light enough that it can be flown between structures, minimizing the need for crews to mobilize and install the sock line at each structure and improving construction efficiency. After being pulled into place, the conductor or ground wire is then set to the correct tension in each span before being permanently secured at each structure. See Section 1.2.2, Construction Methods, for more details.

Figure 1-4. Typical Pulling and Tensioning Operation



A few locations along the corridor would require a mid-span pulling and tensioning site, called a snub site, to facilitate splicing the line together. Snub sites are required based on the length of conductors on new spools and the distances between transmission structures along the line. The equipment needed at a snub site would be the same as other pulling and tensioning sites with the addition of a bulldozer to hold the OHGW down during splicing of the conductor. The conductor would be pulled to the snub site from both directions at ground level and spliced together (by compression sleeve), releasing the conductor into the overhead span and final tensioning.

Pulling and tensioning sites are selected to accommodate the necessary equipment without grading improvements for site preparation but may need to be cleared of some vegetation (using a chainsaw, mowers, brushing machines, heavy equipment, or hand tools) to position equipment. Pulling and tensioning equipment is rubber-tired vehicles or track equipment, like other construction equipment used for structure replacements. Each of these sites would temporarily disturb an area approximately 250 feet by 250 feet. Pulling and tensioning work sites often extend outside of the ROW at transmission line corners and angles.

Access Roads

The system of roads that provides access to the transmission line (access roads) would be maintained, repaired, and improved to support construction equipment during the construction phase, and secure access for future operations and maintenance of the line. The Proposed Action would require about 16.2 miles of road improvements, including gravel addition and minor blading or grading. The Proposed Action would also reconstruct 12.0 miles of roads that require grading or more extensive upgrades, construct 4.0 miles of new roads, repair and replace culverts, and construct temporary access roads to certain locations. Temporary roads could require minor improvements, such as moving large rocks and vegetation removal, but would be restored or allowed to return to pre-construction conditions when work is complete. Additionally, approximately 32.5 miles of direction-of-travel roads would be used to access the project corridor. Direction-of-travel roads are either existing roads where no road maintenance or improvements are anticipated or existing ground surfaces such as agricultural fields where no roads exist or would be needed for access.

The access road system consists of a mix of permits or access road easements across public and private land and are located within the transmission line ROW, as much as possible. BPA would obtain 50-foot-wide easements for new or reconstructed access roads and 20-foot-wide easements for existing or to-be-improved roads. In some cases, BPA purchases easements to structures where no access road is located for the purpose of gaining permanent legal rights to access the structure or to construct temporary or permanent access roads, as needed, for periodic or emergency maintenance.

Typical BPA access roads are 14 feet wide with an additional 3-foot offset from each side of the road for slopes or drainage ditches. The total disturbance width for typical BPA access roads is approximately 20 feet. Additional widths would be disturbed during access road construction in areas with a curve or steep slope because cut and fill would be required. In specific wetland or sensitive areas, the access road widths would be reduced to 12 feet and the offsets on either side reduced to 2 feet for a total area of disturbance of 16 feet to minimize temporary and permanent impacts. The maximum depth of anticipated ground disturbance with new or reconstructed access road work is 5 feet.

Culverts

The Proposed Action would install two new culverts and improve or repair eight other existing culverts along the project access road system. Most of the project culverts are within ephemeral channels in open, upland areas that do not provide habitat for fish. None of the project culvert sites have the potential for fish use that would necessitate fish passage designs. The culverts would be designed and sized to meet flow requirements for the ephemeral drainages during storm events or other periods of flow. Culvert slope would not exceed stream gradient. The use of equipment in streambeds would be minimized. Typically, culverts would be partially buried in the streambed to maintain streambed material in the culvert.

The typical disturbance footprint for a culvert installation is estimated at 20 linear feet along the stream at each end of the culvert, with 10 linear feet of permanent impacts and 10 linear feet of temporary impacts each. Typical total disturbance areas for new and replacement culverts are approximately 36 square feet of permanent impacts and 39 square feet of temporary impacts with an estimated total fill of 1.3 cubic yards at each crossing.

Temporary measures like sandbags or other non-erosive material would be placed around the culverts to prevent scouring or water flowing around the culvert. Adjacent temporary and permanent sediment-control structures such as silt fences, check dams, rock armoring, or riprap may be necessary to prevent erosion or sedimentation.

Fords

A ford is a section of access road designed with a large-diameter roadbed rock and geotextile fabric to allow the flow of water through and beyond the roadbed. Fords are typically located in natural depressions and ephemeral drainages that contain water in response to storm events only occasionally, and where a culvert is not required for drainage. The project will install, replace, or repair 22 fords on existing access roads. None of these fords are located on fish-bearing streams or have downstream connectivity in proximity to rivers or streams where fish occur. Work on these crossings would occur when these features are dry. Additionally, standard measures for controlling erosion and sediment runoff would be installed and maintained during construction at these crossings, as necessary.

Gates

Initial surveys and design identified 31 gates to install, repair or replace at the entrances to access roads to prevent trespassing onto private lands while providing secure BPA access to transmission line ROW. Gate locks would be coordinated with landowners to ensure that both BPA, BPA-approved contractors,

and the landowner can unlock them. Gate replacements or repairs could require two new post holes 2 to 4 feet deep and up to 1 foot in diameter.

Vegetation Removal

Ground vegetation could require maintenance or removal to facilitate construction and ensure the safe ongoing operation of the line. The existing ROW is actively maintained for low growing vegetation and removal of potential danger trees. The Proposed Action would require temporary construction work areas and access roads where grasses, low-growing shrubs, or agricultural crops may be crushed in place or cleared. Soil disturbance for grading and leveling areas, such as landings, staging sites, or access roads, could also temporarily or permanently disturb soil and surface vegetation. Based on work area estimates, there could be up to 281 acres of temporary disturbance to area grass, low-growing shrubs, and agricultural crops for construction activities. Temporary work areas in agricultural fields, including temporary roads, could directly and indirectly impact agricultural vegetation. Crop damage would be avoided to the extent possible.

Danger trees are trees located adjacent to the transmission line ROW that have the potential to fall or grow into or grow too close to the conductor and cause flashovers or line outages. The Proposed Action includes removal of two danger trees along the transmission line ROW.

Maintenance at Existing Substations

The project transmission line terminates on either end at the BPA McNary and Roundup Substations. The Proposed Action would require associated maintenance updates inside the existing, rocked electrical yards. The work would involve replacing current transformers, jumpers, disconnect switches, rigid jumpers, and bus work, including the supporting concrete footings and conduit in the gravel, fenced substation yards.

1.2.2 Construction Methods

Throughout construction, a combination of dump trucks, rollers, graders, bulldozers, and excavators would be used for access road construction, improvements, and maintenance. The existing transmission line would be taken out of service during construction for several months while the existing structures, conductors, insulators, and attachment hardware would be removed. The old, existing transmission line conductors would be reeled onto spools to haul off for recycling. While structures are being replaced, typically, one bucket truck, one excavator, two cranes, and one dump truck would be present at each structure site. After the new wood poles and hardware are installed, pulleys (travelers) would be installed on the structures and a sock line installed through each pulley.

The sock line would be manually installed in each traveler pulley with a bucket truck, using a helicopter, or by a lineman climbing up the structure. Along a section of the project, the sock line for conductors and OHGW would be flown between structures and installed using a helicopter or drone. The helicopter has an attachment to string the sock line through the traveler pulleys. Sections of sock line would start and end at pulling and tensioning sites.

At each pulling and tensioning site, the sock line would be used to pull a heavier line through the travelers, and eventually the conductor itself would be attached to this line, strung into place, tensioned, and permanently connected to the new, replaced insulators and hardware. Guard structures

that provide temporary overhead protection on either side of crossings (distribution lines, roads, railroad crossings, navigable rivers) would be installed to catch conductors or ground wire in the unlikely event that the conductors/wires fall while being removed or installed.

Depending on requirements from Oregon Department of Transportation (ODOT), nighttime work might be required to construct the crossing over I-84 in mile 14. Nighttime work would last for 3 nights and would be conducted from 8pm to 6am. Typical light plants would be used to perform work, and lights would be towed by vehicles and removed from site daily.

Helicopter Assisted Construction

The proposed project would use helicopters to install sock line for the OHGW along about half of the project line from structures 17/6 to 38/6, 2 miles before the line ends at Roundup Substation. Use of helicopters for this activity is due to steep terrain and would minimize earth disturbance as compared to using ground methods and crane set-ups to pull in the static line. The helicopter contractor would avoid sensitive areas (residences and schools), or areas prohibited by the Federal Aviation Administration. Helicopter flight paths would follow BPA's ROW when close to the project corridor. This project would also use fly yards and refueling areas for the helicopter throughout the project corridor. Landing areas for the helicopters are proposed in locations with level terrain. These fly yards would be sited in the same areas that are being used for material laydown areas. It is unlikely that use of these areas would require the removal of mature trees; however, they would be temporarily cleared of low-lying brush and may require side trimming of mature vegetation.

Additionally, helicopters may be used to install bird diverters, install marker balls, or remove old structure poles from work areas. To reduce the impact to certain environmental sites (e.g., wetlands or riparian areas adjacent to streams) it was decided to eliminate that structure in the new alignment; however, the old pole still needs to be removed. Therefore, the old wood poles would be cut into smaller sections that would be removed from the site by a helicopter. In locations due to safety concerns because of steep terrain or energized powerlines, a helicopter would be utilized for installation of bird diverters and marker balls. The helicopter would fly next to the OHGW with a lineman trained in this type of activity. The lineman would either be secured to the outside of the helicopter and standing on the skids or attached to a long line underneath. The helicopter would hover in place while the lineman installs either the bird diverters or marker balls onto the OHGW.

Material Yards and Laydown Areas

Temporary laydown areas and material yards would be spread evenly throughout the project to store and stockpile materials, trucks, and other equipment during construction. The size of the material yards varies along the project and the temporary laydown, or staging, areas would be based on the area needed to accommodate new and replaced poles and conductor. Material yards and laydown areas are selected in previously disturbed or gravel lots, if available. Heavy traffic and moving materials could result in wheel ruts and ground disturbance of 2 to 4 inches at laydown areas, and some temporary site improvements, such as clearing or adding gravel, may be necessary.

1.2.3 Construction Workforce and Schedule

The project would be constructed primarily by contract personnel. The construction workforce would consist of laborers, craftspeople, supervisory personnel, support personnel, and construction management personnel who would perform the construction tasks. The projected number of workers includes approximately 50 construction personnel in three separate crews at any given time.

The construction schedule would depend on the completion and outcome of the environmental review process, including the duration of regulatory agency reviews, consultations with tribes, and timing of permit and consultation approvals. Construction is anticipated to take approximately 2 years and would be completed sequentially from one end of the line to the other.

The following seasonal construction restrictions would be implemented for the Proposed Action to avoid or minimize impacts on fish and wildlife (see Section 1.5):

- **Bald eagle nesting:** January 1 to August 31. Helicopter use restrictions would apply within nest buffers.
- **Migratory and nesting birds:** Tree removal and vegetation clearing would occur during the non-breeding season for most birds between August 15 and March 31 to avoid disturbing or displacing nesting birds. Helicopter use and heavy equipment for construction may also be restricted during this period near nesting sites and buffers.

1.3 Public Involvement

BPA solicited public comments to inform the environmental review from February 22, 2024, to March 23, 2024. On February 22, 2024, BPA mailed letters to potentially interested and affected persons, agencies, tribes, and organizations. The public letter provided information about the project, requested comments on issues identified by the public, and described how to comment (via mail, fax, telephone, and BPA's website). BPA has posted project information and documents, including the public letter, on the project website here: www.bpa.gov/nepa/mcnary-roundup.

Consistent with the Council on Environmental Quality's November 30, 2022, Memorandum and Guidance for Federal Departments and Agencies on Indigenous Knowledge, BPA engaged American Indian Tribes and Indigenous Peoples for information and perspectives regarding environmental, cultural, and community impacts. BPA determined that the CTUIR has potential interest in this project. BPA requested comments from the CTUIR on the project and potential cultural resources to assist in planning cultural investigations.

BPA received fifteen separate comments during the comment period for the environmental review and posted them on the project website. Comments received and brief responses are included in Table 1-4.

Table 1-4. Public Comments

Commenter	Comment Summary	Response
Hermiston Irrigation District	This Project will cross Bureau of Reclamation easements, and facilities that Hermiston Irrigation District is responsible for operating and maintaining. Please check with HID and the BOR-Umatilla Field Office prior to work to confirm that any crossing agreements are updated and that the locations of facilities are accurate.	As a part of the Proposed Action and project planning, BPA reviewed the existing rights associated with the BPA transmission line ROW and access roads. BPA has obtained crossing agreements with the Bureau of Reclamation.
Private Citizen	BPA should explain what relationship, if any, this proposed project will have to (1) EE West End Solar LLCs West End Solar project, which recently received a site certificate from the state of Oregon and (2) the PacifiCorp substation and interconnection facilities that used the same transmission right-of-way but require BPA to raise the height of its towers by 75 feet.	The proposed project is to replace the existing 70-year old transmission line that is at the end of its service life. This project has no relationship to any of the projects listed and would be needed regardless of whether those projects are constructed or not. More information about the purpose and need for the project can be found in Sections 1.1 and 1.2.
Private Citizen	I would like to keep the poles that are on our property if you replace them. Thank you.	BPA does not allow private individuals to keep old poles or other retired transmission equipment due to safety concerns regarding potentially hazardous materials from treated poles.
Private Citizen	In order to cross our property on the west side of (redacted) Creek, please be aware of the very fragile alkali soil on and near the CRP acreage which borders the BPA right of way.	If BPA decides to proceed with the project in this area, impact minimization measures would be included in the construction specifications to minimize ground disturbance and revegetation using native plants that will grow in alkali soils. Construction crews would be in touch prior to work starting.
City of Umatilla	Please keep us up to date on the project moving forward to determine any impacts to City-owned property and Right of Way.	BPA will update the project website with new information as it becomes available. BPA will continue to coordinate with landowners and managers as construction planning and implementation proceeds.
Private Citizen	Hazard to health? Want to know if any properties affected. Can go around for rebuild?	A discussion of potential hazards to health can be found in Section 2.8. The existing transmission line would be rebuilt in the same location.
Private Citizen	Do not think and environmental assessment is needed. To make the Transmission line last longer why are not metal poles being used instead of wood poles? Would it add significant cost to the project?	BPA has determined the appropriate level of National Environmental Policy Act (NEPA) analysis based on current U.S. Department of Energy NEPA Implementing Procedures and regulations (10 Code of Federal Regulations [CFR] Part 1021). Metal poles are considerably more expensive than wood poles and BPA determined that it was most cost effective to use wood poles.

Commenter	Comment Summary	Response
Private Citizen	Wants to know if poles would be on his property	The existing transmission line would be rebuilt in the same location. BPA realty reached out to the landowner to discuss project location relative to the property.
Private Citizen	Want to be notified of people on property and any subsurface testing locations.	If BPA decides to build the project, your contact information would be passed on to the construction contractor.
Oregon Dept. of Fish and Wildlife (ODFW)	ODFW recommends that pre-construction surveys be conducted for Washington ground squirrels (WGS) and that raptor nest surveys be conducted within 0.5 miles of the project area during active nesting season: Ferruginous hawk (March 15-August 15), Swainson's hawk and burrowing owl (April 1-August 15). Please record incidental observations of Sensitive species or Oregon Conservation Strategy species.	Habitat and wildlife surveys were conducted in the project area as per ODFW comments. Incidental observations of Oregon state-listed sensitive species and Oregon Conservation Strategy species were recorded during surveys and BPA surveyed for WGS in project areas where that species may occur. A summary of the results of the surveys can be found in Section 2.6. Survey data will be shared with ODFW.
US Fish and Wildlife Service	Please clear vegetation during the non-breeding season for most birds, i.e. between about Aug 15th and March 31st.	This seasonal construction restriction has been incorporated into the Proposed Action (see Section 1.5.5 Wildlife).
Private Citizen	I am a scrap metals dealer/buyer. I am interested in old transmission wire and I beam cross arms. Please call (redacted) also in renting construction contractor a lay down yard.	BPA has an established process for disposing of used transmission line materials. The construction contractor would decide where they would need a laydown yard and would contact nearby landowners as needed. If BPA decides to build the project, your contact information would be passed on to the construction contractor.
Private Citizen	Needs prior notice for entry to property.	If BPA decides to build the project, your contact information would be passed on to the construction contractor to provide appropriate notice prior to entering the property.
Private Citizen	1. Long term effects on people living near powerlines 2. Environmental impact- will it increase? 3. Potential fire danger from sparking lines Will your equipment block access to our street/property. What is required of property owners to provide access?	Information about these questions is addressed in this resource report, Section 2.8 Noise, Public Health, and Safety. The rebuilt transmission line would cause small changes to electromagnetic fields (EMF) and audible noise generated within the ROW compared to current conditions, but no change to levels outside the ROW. The new, rebuilt line would be more reliable and would reduce fire hazards with measures including fire-resistant pole wraps and overhead groundwires. Construction may temporarily impact access to some areas, but any disruptions would be coordinated with individual residents, property owners, and the local community.

Commenter	Comment Summary	Response
Private Citizen	Need four lower wires near approach to Hermiston Airport-S. Ott/E Highland	The rebuild design was filed with the Federal Aviation Administration (FAA) on June 16, 2025, with a revised tower heights and marker ball plan. The existing line has marker balls in the area, and the rebuilt line would have marker balls in the same spans. The FAA is the regulatory approving authority for reviewing projects that may impact airport operations.

1.4 Summary of Environmental Impacts

Table 1-5 summarizes the potential direct and indirect environmental impacts to resources from the Proposed Action. Based on the analysis presented in Chapter 2, Affected Environment and Environmental Consequences, the Proposed Action has the potential to impact the following resources: soils and geological hazards; vegetation; water resources, floodplains, and fish; wetlands; wildlife; cultural resources; and noise, public health, and safety. The remaining resources were determined to either not be applicable to the Proposed Action, not potentially impacted by it, or potentially impacted only to an extremely small, insignificant degree, as described in Chapter 2. Because there would be no or negligible impacts expected to those resources from the Proposed Action, they have not been evaluated further.

Table 1-5. Summary of Potential Environmental Impacts

Resource	Potential Direct and Indirect Impacts
Soils and Geologic Hazards	Impacts on soils would be **low** as the work areas would generally be small and isolated, work would take place during the dry season or when work areas are dry, and overall potential for soil erosion in the project area is low. Soil impacts would occur from auguring structure holes; constructing landings; removing vegetation; piling soil temporarily; compacting or rutting from heavy equipment; spreading excess soils around the base of the structure; excavating for guy wire anchors; constructing, reconstructing, or improving roads; compacting areas used as staging areas and pulling/tensioning sites; or potential contamination from wood-pole preservative or accidental spills from equipment. Temporary work areas in agricultural fields, including temporary roads, could directly and indirectly impact soils and agricultural production. Impacts to agricultural fields and soil would be mitigated by coordinating with landowners on construction timing and soil restoration. Soil disturbance would be minimized by coordinating with landowners on timing to prevent excessive rutting, erosion, or soil compaction.

Resource	Potential Direct and Indirect Impacts
Vegetation	Impacts to vegetation in the transmission line ROW would be **low to moderate** and temporary, as work areas are generally within previously disturbed sites in the energized ROW corridor that is routinely managed for vegetation. Vegetation would be reseeded and allowed to regrow following construction; however, spreading sub-soils could prevent the regrowth of native vegetation, and mechanized equipment may increase the spread of noxious weeds. Vegetation located in areas of new road construction and culvert work may not regrow. Low-growing vegetation would be crushed in place, minimizing permanent disturbance to plant roots. Temporary work areas in agricultural fields, including temporary access roads, could directly and indirectly impact agricultural plant growth. Crop damage would be minimized by coordinating with landowners on construction timing, and prioritizing ground disturbing activities after harvest outside the growing season where possible. There is a low potential for special-status plants to be impacted because suitable habitat is lacking along the corridor. Construction activities could increase the potential for the spread of invasive plants, minimized by use of best management practices (BMPs).
Water Resources, Floodplains, and Fish	Impacts on water resources, floodplains, and fish would be **none to low**. No major construction activities are necessary in streams, rivers, or in-water work. One new culvert and one location for access road reconstruction would be within mapped intermittent streambeds, but would be completed during the dry season when no water is present. There is a **low** potential for direct impacts on surface or groundwater quality during construction from the accidental release of chemicals used during construction (e.g., fuels, lubricants, solvents), the disturbance of existing creosote-treated wood poles and creosote-contaminated soil excavated from existing structure holes, and the leaching of wood preservative, pentachlorophenol (PCP), from new PCP-treated wood poles into the ground. Minimization measures and BMPs would be used to minimize the spread of PCPs and petroleum products, including BMPs for proper handling and disposal of creosote-treated wood poles and creosote-contaminated soils; spill prevention, containment, and cleanup; and wood-pole storage methods to minimize the risk to groundwater from the accidental release of hazardous chemicals. Pole wraps would be used on poles located in wetlands, streams, or seasonally inundated areas, which would minimize the potential for PCP to leach into groundwater. The potential for impacts to floodplains would be **none**. No direct project elements would be within a floodplain, and the transmission line ROW would not change from existing where it spans over known floodplains. The potential for impacts to fish would be **low.** Any impact to aquatic species would be indirect and temporary, primarily during construction. Most stream crossings for the project are located on seasonal intermittent or ephemeral drainages where fish are not present. BMPs, including erosion and sediment control measures at structure and access road work areas, would prevent sediment from entering potential fish streams or habitat, avoiding impacts from construction activities. Project elements, including access roads, new culverts, and culvert repair or replacements would be in ephemeral, non-fish-bearing locations without the potential for direct impacts to fish. Culvert installation and repairs would maintain or improve hydrologic connectivity after construction; therefore, impacts would be **low**.

Resource	Potential Direct and Indirect Impacts
Wetlands	Impacts to wetlands would be **low** during construction. Two existing transmission line structures in a wetland would be permanently removed and relocated. No new line structures would be installed in wetlands. Minimization measures to avoid and minimize potential impacts to wetlands and waters were incorporated in early project design and planning. Minor and temporary impacts to wetland soils and vegetation could occur from the use of timber mats during construction. No wetlands would be permanently impacted by new access roads, new culverts, or culvert replacements.
Wildlife	Impacts to wildlife would be **low** and mostly indirect and temporary during construction. During construction, vegetation removal or heavy equipment use could result in some minor local disturbance to common wildlife and habitat, including nesting birds during nesting/breeding periods and natural wildlife routines and activities. Timing restrictions for vegetation removal and helicopter use would be used, as needed, to minimize disturbance and avoid potential direct and indirect impacts to wildlife during critical nesting, breeding, or spring calving periods. The rebuilt transmission line would have bird flight diverters installed on conductors and OHGW at high bird use sections along the line to reduce potential bird collisions. No impacts are anticipated to any Endangered Species Act-listed species or sensitive wildlife species.
Cultural Resources	Impacts to cultural resources would be **none to low**. Replacement structure types would be similar to existing, and the transmission line would retain its current alignment; the line's visual uniformity would remain, and its integrity would remain intact. Thus, no adverse effects would occur to the existing transmission line. The project design was refined to avoid physical impacts to the National Register of Historic Places (NRHP)-eligible Oregon Trail Corral Springs Segment, and no other NRHP-eligible built-environment historic properties have the potential to be adversely affected by the project. Project surveys did not identify any archaeological resources that would be affected. Unknown cultural resources could be inadvertently discovered during construction and adherence to appropriate minimization measures would ensure that any previously undiscovered resources found would be managed properly to minimize disturbance or destruction.
Noise, Public Health, and Safety	Impacts to noise, public health, and safety would be **low to moderate** during construction. Temporary noise disturbance from construction equipment and vehicles would be similar to typical agricultural and land-use activities in the area. Noise disturbance from helicopters or drones during stringing operation would be temporary and short-term, typically less than a few hours in any location. Potential temporary impacts to public health and safety during construction include potential to disturb hazardous materials, construction hazards from heavy equipment use, power outages, and property damage. Following construction, the potential for power-delivery interruptions and safety issues would be reduced during operations and maintenance of the rebuilt transmission line which would have fire-resistant pole wraps and OHGW along the entire line for lightning and grounding protection.

1.5 Best Management Practices and Minimization Measures

Best management practices (BMPs) and minimization measures have been identified for the Proposed Action (Section 1.2). Some of these measures are design features that BPA typically uses or that have been incorporated into the original design of this proposed project. Other measures were identified as a result of agency consultation and are intended to reduce or eliminate potential impacts from the Proposed Action on resources discussed in this resource report.

1.5.1 Soils and Geologic Hazards

- Stabilize permanent disturbance areas by applying a weed-free gravel top layer to the roadways.
- Conduct project construction, including tree removal, during the dry season when rainfall, runoff, and stream flow are low to minimize erosion, rutting, soil compaction, and sedimentation to the extent practicable.
- Contact geotechnical specialists if geotechnical issues such as new landslides arise during construction.
- Install appropriate erosion-control devices, such as silt fences and straw wattles, where needed to minimize soil transport.
- Retain vegetative buffers, where practicable, to prevent sediments from entering waterbodies.
- Include water control structures on reconstructed and improved access roads using low grades, water bars, and drain dips to help control runoff and prevent erosion.
- Properly space and size culverts on access roads.
- Apply water from water trucks on an as-needed basis to minimize dust and reduce erosion due to wind.
- For the identified area of alkali soils, contact the landowner before entry to review work areas. Perform work when the ground is dry to minimize damage to fragile soils. Minimize the disturbed footprint of work areas and vehicle traffic to further reduce impacts and keep vehicles on designated routes. Revegetate with native vegetation suitable for alkali soils.
- Revegetate disturbed areas to help stabilize soils as soon as work in that area is completed and appropriate environmental conditions exist, such as moderate temperatures and adequate soil moisture.
- Where vegetation is used for erosion control on slopes steeper than 2:1, use a tackifier seed and mulch so the seed does not wash away before germination and rooting.
- Inspect revegetated areas to verify adequate growth and implement contingency measures, as needed.

- Inspect and maintain access roads and cross-drains to ensure proper function and nominal erosion levels after construction.

- Use pole wraps for placement of any chemically treated poles in wetlands, near streams, or within the 100-year floodplain. Install pole wraps per the following requirements: Chemically treated transmission poles placed within 50-feet of a stream, in a wetland, or within the 100-year floodplain must be encapsulated or wrapped to at least 18 inches above the ground or channel surface with an appropriate material to prevent leaching of chemicals. In areas with a high likelihood of abrasion, poles must be equipped with a wear strip.

1.5.2 Vegetation

- Use the existing road system, as practicable, to access structure locations.

- Minimize the construction area and disturbance to vegetation to the extent practicable, especially in monarch butterfly habitat (avoidance of patches of milkweed), wetlands, and waterbody crossings.

- Locate materials storage and staging areas in previously disturbed areas, where feasible.

- Conduct as much work as possible, including tree removal, during the dry season to minimize erosion and soil compaction.

- Conduct tree removal in a manner that minimizes disruption to remaining plants and shrubs.

- Cut trees and leave existing root systems intact to help prevent erosion.

- Return temporarily disturbed areas to their original, pre-construction contours and conduct site restoration and revegetation measures before or at the beginning of the first growing season following construction. Revegetate disturbed areas with grasses, forbs, or shrubs to ensure appropriate vegetation coverage and soil stabilization during the optimal seeding window.

- Keep pulling/tensioning and construction equipment inside the transmission line ROW for pulling/tensioning sites located on ROW to minimize impacts to surrounding, previously undisturbed vegetation. Prior to construction, identify noxious weed infestation areas for avoidance (as practicable).

- Implement measures to avoid spreading noxious or undesirable weeds including inspecting equipment for mud or seeds and cleaning before entering work areas, driving on established roads, installing and using weed wash stations, and other appropriate equipment cleaning measures, such as using commercial carwashes.

- Avoid impacts to crops or agricultural production, when practicable, and minimize unavoidable impacts by developing and implementing a construction damage settlement plan. The plan would document standard fees for damage because of construction activities such as compaction, rutting, and crop damages based on commodity type.

1.5.3 Water Resources, Floodplains, and Fish

- Restrict construction vehicles and equipment to access roads and designated work areas.
- Use pole wraps and culvert footings on structures located within 50 feet of a stream, in a wetland, or within the 100-year floodplain, as outlined under soils and geologic hazards.
- Construction activities in or near potential water drainages should be done in the dry season when no water is present, including culvert modifications and road maintenance.
- Prepare and implement a storm water pollution prevention plan.
- Install erosion-control measures (e.g., silt fences, straw wattles, and other sediment control measures) prior to work in or near floodplains and streams. Inspect and maintain, as necessary, to ensure their continued effectiveness until soils become stabilized.
- Operate equipment from the top of a streambank and conduct work outside of the active stream channel, where possible.
- Limit the placement of fill for access road work in floodplains to the minimum required.
- Install cross-drains per BPA access road design specifications.
- Design culverts (non-fish drainages) for the 100-year storm event to minimize future maintenance needs.
- Return temporary disturbance areas for culvert and road work to pre-construction contours: mulch, seed, and plant as per plans and specifications.
- Dispose of excess material generated from access road work in a stable upland site (in gentle terrain more than 150 feet from waterbodies or wetlands) approved by the BPA environmental lead, smooth to match adjacent grades, and seed for stability. In steep terrain or near waterbodies or wetlands, haul excess material off site.
- Confirm that any vehicle or mechanized equipment to be operated within 150 feet of water resources is clean (e.g., power-washed) and does not have fluid leaks prior to contractor mobilization of heavy equipment to site; inspect equipment and tanks for drips or leaks daily and make necessary repairs within 24 hours.
- Store, fuel, and maintain all vehicles and other heavy equipment (when not in use) in a designated upland staging area located a minimum of 150 feet away from any stream, waterbody, or wetland, or where any spilled material cannot enter natural or manmade drainage conveyances.
- Maintain emergency spill control materials, such as oil booms and spill response kits, on-site always and ready for immediate deployment.

- Contain petroleum product spills immediately, eliminate the source, and deploy appropriate measures to clean and dispose of spilled materials in accordance with federal, state, and local regulations; and contact the BPA environmental lead.
- Revegetate disturbed areas using a slow-release fertilizer.
- Do not apply surface fertilizer within 50 feet of any wetland or water body.
- Remove all erosion control structures when the project is complete, and site is stabilized and vegetated.
- Obtain all necessary permits for water drafting sites (locations where the contractor may fill water trucks) and locate to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows.

1.5.4 Wetlands

- Use existing access roads as practicable to access structure locations.
- Use temporary equipment mats when working in wetlands and drive vehicles and equipment across wetlands only during the dry season.
- Unless they are part of authorized permanent fill, use removable pads or mats to prevent soil compaction at all construction access routes through or project work areas in wetland areas.
- Comply with the applicable Clean Water Act regulations and permit conditions for all work in wetlands.
- Install erosion control measures prior to work in or near wetlands (e.g., silt fences, straw wattles, and other sediment control measures). Inspect and maintain as necessary to ensure their continued effectiveness until soil becomes stabilized.
- Avoid mechanized equipment usage in wetlands except where no practicable alternative exists.
- Store fuel and maintain all vehicles and other heavy equipment (when not in use) in a designated upland staging area located a minimum of 150 feet away from any stream, waterbody, or wetland, or where any spilled material cannot enter natural or manmade drainage conveyances.
- Confirm that any vehicle or mechanized equipment operated within 150 feet of wetlands is clean (e.g., power-washed) and does not have fluid leaks prior to contractor mobilization of heavy equipment to site; inspect equipment and tanks for drips or leaks daily and make necessary repairs within 24 hours.
- Dispose of excess material generated from access road work in a stable upland site (in gentle terrain more than 150 feet from waterbodies or wetlands) approved by the BPA environmental lead, smooth to match adjacent grades, and seed for stability. In steep terrain or near waterbodies or wetlands, haul excess material off site. Remove any temporary equipment mats and revegetate.

- Remove all erosion control structures when the project is complete, and soils are stabilized and vegetated.
- Restore all temporary disturbance areas to original contours and de-compact, if necessary.
- Reseed all temporary disturbance areas in wetlands with a wetland specific seed mix and monitor revegetated wetland areas to ensure adequate cover.
- Do not apply surface fertilizer within 50 feet of any wetland or water body.
- Use pole wraps and culvert footings on structures located within wetlands.

1.5.5 Wildlife

- Install bird diverter devices in areas with potentially high avian use as determined in final design (Table 1-3).
- Restore areas disturbed by construction to pre-construction condition, as much as practicable.
- Remove or store inside secure containers food and food-related materials along with other trash generated during construction. Maintain project sites free of trash and remove food-related garbage regularly; do not feed wildlife or leave food or trash where wildlife can access it.
- Locate staging areas in previously disturbed or graveled areas to minimize soil and vegetation disturbance, where practicable.
- Conduct pre-construction nest surveys to determine the presence of any raptor or other bird nests in structures where work would occur. Remove nests outside of the nesting season if removal is needed.
- Avoid bald eagle disturbance during the breeding season from January 1 through August 31 from construction activities within 660 feet of active bald eagle nests if the activity is visible from the nest or 330 feet if the activity is not visible from the nest.
- Avoid bald eagle disturbance during the breeding season from January 1 through August 31 by avoiding helicopter use within a 1,000-foot buffer around bald eagle nest sites (occupied or unoccupied).
- Remove trees and clear vegetation during the non-breeding season to avoid disturbing or displacing nesting birds (for most birds, this is between August 15 and March 31). Restrict helicopter use and heavy equipment operation for construction during this period near nesting sites and buffers, as necessary.

1.5.6 Cultural Resources

- Avoid access road improvements and structure work areas within the boundary of the Oregon Trail Corral Springs Segment.

- Avoid adverse impacts to the two eligible sites (35UM00398 and 35UM0039) and four unevaluated sites (35UM00560, Site-A-2, Site-B-3, and Site-B-4) by marking buffered sensitive avoidance areas on project maps and implementing exclusion measures like lathe and flagging to prevent access to areas.

- Provide archaeological monitoring during Project-related ground-disturbing activities that occur within 200 feet of the four unevaluated sites (35UM00560, Site-A-2, Site-B-3, and Site-B-4).

- Follow BPA's Post-Review Discovery of Cultural Material Procedure, which requires immediately stopping all work within 150 feet of an inadvertent discovery of cultural resources and immediately notifying the BPA archaeologist and BPA Project Manager. The BPA archaeologist would work with the State Historic Preservation Office (SHPO) and affected Tribes to assess the cultural material and determine the appropriate course of action.

- Stop all operations immediately within 300 feet of the inadvertent discovery of human remains or suspected human remains, or if any items suspected to be related to a human burial are encountered during project construction; secure the area around the discovery and immediately contact the BPA Project Manager, BPA archaeologist, and local law enforcement. The BPA archaeologist would work with the SHPO and affected Tribes to determine the appropriate course of action.

- Provide cultural resources awareness training to explain cultural resource-related avoidance and minimization measures to the BPA transmission line maintenance crew, construction contractors, and inspectors during preconstruction meetings.

1.5.7 Noise, Public Health, and Safety

- Use sound-control devices on construction equipment with gasoline or diesel engines and limit construction noise to daylight hours (such as 7:00 a.m. to 7:00 p.m.) to reduce noise impacts.

- Use fire-retardant pole wraps on rebuilt structure wood poles to reduce potential damage or service interruptions from wildfires.

- Implement spill prevention and response BMPs to avoid, minimize, or mitigate impacts to public health and safety from the Proposed Action.

- Place plastic ground covers and concrete blocks to keep wood poles off the ground in material staging yards.

1.5.8 Other BMPs

- Provide a construction schedule to the potentially affected landowners and interested parties.

- Maintain existing access to residences and other areas during construction.

- Coordinate with landowners and residents to ensure that access road work, gates, and construction and maintenance activities would minimize disruptions to agricultural operations.

- Compensate landowners for the value of any property damaged by construction activities, as appropriate.
- Use traffic safety signs and flaggers to inform motorists and manage traffic during construction activities on affected roads.
- Install permanent gates at selected locations to minimize unauthorized use of BPA access roads and unauthorized entry to BPA ROW.
- Provide traffic control where existing rural roadways are narrow to ensure traffic safety.
- Follow the applicable state, county, and city requirements for traffic control and lane closures.
- Use water trucks to control dust during construction, as needed.
- Keep all vehicles in good operating condition to minimize exhaust emissions.
- Turn off construction equipment during prolonged periods of non-use.
- Drive vehicles at low speeds (less than 15 miles per hour) on access roads and in the BPA ROW to minimize dust.
- Locate staging areas as close to construction sites as practicable to minimize driving distances between staging areas and construction sites.
- Locate staging areas in previously disturbed or graveled areas to minimize soil and vegetation disturbance, where practicable.
- Encourage the use of the proper size of equipment for the job to maximize energy efficiency.
- Recycle or salvage non-hazardous construction and demolition debris, where practicable.
- Dispose of wood poles at an appropriate waste-disposal facility in the local area, where practicable.
- Use local rock sources for road construction that meet road material and weed free standards, if possible.
- Focus security lighting at staging areas and the material storage yard inward to minimize spillover of light and glare.
- Maintain a clean construction site and remove all construction debris.

2 Affected Environment and Environmental Consequences

This chapter describes the affected environment, the resources that could be impacted, and the potential environmental consequences to these resources from the Proposed Action. It also describes the cumulative impacts that could result from implementing the Proposed Action. Field surveys were conducted in summer 2023 to identify cultural resources, wetlands, waters, and habitats, including potential habitat for Endangered Species Act (ESA)-listed species. These project planning surveys provided information about the project area necessary to evaluate the affected environment and potential environmental consequences.

Table 2-1 identifies resources initially considered for impact analysis. Not all of the resources that are present or may be present in the project area would be affected by the Proposed Action. Some resources would have no potential for impacts from the project or experience only an extremely small, insignificant impact. Because these resources are not issues for the proposed project, they are evaluated at a high level in Table 2-1 but are not evaluated further in this resource report. Resource effect summaries contained in the project's categorical exclusion evaluation are supported by information in this resource report.

Table 2-1. Resources Initially Considered for Impact Analysis

Resource	Resource Status	Evaluation
Soils and Geologic Hazards	Present, potentially affected by the Proposed Action	Impacts are further disclosed under Section 2.2.2 Environmental Consequences.
Vegetation	Present, potentially affected by the Proposed Action	Impacts are further disclosed under Section 2.3.2 Environmental Consequences.
Water Resources, Floodplains, and Fish	Present, potentially affected by the Proposed Action	Impacts are further disclosed under Section 2.4.2 Environmental Consequences.
Wetlands	Present, potentially affected by the Proposed Action	Impacts are further disclosed under Section 2.5.2 Environmental Consequences.
Wildlife	Present, potentially affected by the Proposed Action	Impacts are further disclosed under Section 2.6.2 Environmental Consequences.
Cultural Resources	Present, potentially affected by the Proposed Action	Impacts are further disclosed under Section 2.7.2 Environmental Consequences.
Noise, Public Health, and Safety	Present, potentially affected by the Proposed Action	Impacts are further disclosed under Section 2.8.2 Environmental Consequences.

Resource	Resource Status	Evaluation
Land Use	Present, minimally affected by the Proposed Action	The existing transmission line would be rebuilt or repaired in the same location as the existing line. Current or future land uses in the project corridor would not change from the Proposed Action. BPA has a crossing agreement with BOR for the parcels that intersect the Hermiston Irrigation District. Minimal, temporary disturbance to land use during construction may occur from impacts to crop production, grazing operations, or access road construction activities. These potential impacts would be short-term and infrequent, minimized through coordination with local landowners and businesses to avoid impacts (see Section 1.5). There are no Natural Resources Conservation Service (NRCS) conservation easement properties within the project corridor, but there is a Conservation Reserve Program property that borders the ROW but would not be impacted by the project. About 0.7 mile of the ROW in line miles 33 and 34 is located on land that has a BPA Deed of Conservation and Restoration Easement. The proposed rebuild and operation of the transmission line and associated access roads are allowable uses under the terms of the conservation easement and no change to the lands under the conservation easement would occur outside of the existing right-of-way for this project. Therefore, existing and future land uses would not substantially change in the project corridor or access road system.
Recreation	Present, minimally affected by the Proposed Action	The project line spans over the Umatilla River, but no other designated recreation areas, trails, or public recreation sites are crossed by the project corridor. The Proposed Action would have minimal potential disturbance to river users, spanning overhead above the Umatilla River. Short term visual and noise disturbance from construction equipment, guard structures, and pulling/tensioning activities may affect river users, if present. These potential impacts would be short-term, similar to activities and equipment for the ongoing land uses in the area and minimized with coordination with local residents and businesses to schedule construction activities to avoid potential conflicts with recreation (see Section 1.5).
Transportation	Present, minimally affected by the Proposed Action	Ongoing use of and access to private, county, or state roads would not substantially change in or near the project corridor. Short, temporary delays along access roads to the project line during construction could occur when moving large equipment between work areas, or where the transmission line construction crosses roads, highways, or railroads. The project corridor is primarily in low-density population areas, not in areas with substantial traffic or other transportation types. Similarly, construction vehicles and equipment would be similar in scope and scale to typical agricultural operations in most of the project area. Individual residences and communities would be notified of upcoming construction activities and potential disruptions that would be minor, short term, and temporary (see Section 1.5).

Resource	Resource Status	Evaluation
Visual Quality	Present, minimally affected by the Proposed Action	Existing views of the project corridor would not substantially change because the rebuilt line would be in the same transmission line ROW corridor that is actively maintained for operation and maintenance of the existing line and located within a largely agricultural landscape. Transmission line structures would be replaced with similar structures, but minor variations in structure components and sizes may be discernible to some viewers. Minor variations such as wood-pole structure heights, shifts in structure locations, and new components including guy lines, OHGW, and a different type (glass) of insulator would be the same general style and type as existing and, therefore, a minor long-term alteration to the baseline visual quality along the project. Access road maintenance may also cause noticeable but relatively minor changes to visual quality in certain areas where new gravel is placed, roads are reconstructed, or new roads are installed, although these changes would be visually consistent with the various farm roads and access roads in the project area. Views of construction equipment, laydown/staging areas, and work areas would be temporary, and equipment and removed and unused materials would be removed after construction and thus would not result in substantial impacts.
Air Quality	Present, minimally affected by the Proposed Action	Temporary, localized air quality impacts from ground-disturbing activities creating dust and construction equipment emissions would occur. With the dust minimization measures identified in Section 1.5, the impacts to local and regional air quality would be minor and consistent with air quality standards. Dust and emission generation would be similar in scope and scale to ongoing, recurring agricultural operations and land uses that contribute to overall air quality in the project area.
Greenhouse Gases	Present, minimally affected by the Proposed Action	Greenhouse gas (GHG) emissions from the Proposed Action would primarily occur during construction from equipment and vehicle emissions. They would include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The combined CO_2-equivalent GHG emissions from these gases from project construction activities are estimated to be between 3,000 and 4,500 metric tons. This is equivalent to approximately 650 to 970 gas-powered passenger vehicles driven for 1 year (USEPA 2022). GHG emissions from the project would be temporary and localized during construction activities only.
Socioeconomics and Public Services	Present, minimally affected by the Proposed Action	Public services and socioeconomics would not be substantially affected by the project activities on the existing line corridor and access road system. No public services would be interrupted by the rebuild project. Construction workers may be hired in the region, and this employment would have a positive but small impact on local and regional economies. No substantial impacts on socioeconomic conditions from the project are anticipated. Anyone affected by this project would experience the same low impacts. These impacts would be low because construction would be short-term with temporary inconveniences to the residences located near the project transmission line or access road system.

2.1 Project Corridor and Disturbance Areas

The project corridor includes the existing transmission line ROW (including access roads in the ROW), pulling and tensioning sites, substations, staging areas, and the area within 25 feet of the centerline (for a total width of 50 feet) of access roads that extend beyond the ROW. The entire 38.5-mile-long transmission line is in Umatilla County, Oregon. The transmission line begins at McNary Substation, adjacent to McNary Dam and about 1 mile east of the City of Umatilla. The transmission line travels southeast for 22 miles, including through the City of Hermiston, before traveling east for another 16.5 miles and terminating at the Roundup Substation. The Roundup Substation is located approximately 2 miles south of the City of Pendleton. Table 2-2 shows the overall project disturbance areas.

Table 2-2. Project Disturbance Areas by Activity

Project Component		Disturbance Area Assumption	Quantity	Total Temporary Disturbance	Total Permanent Disturbance
Replaced 230-kV H-frame structures, no guy wires		Temporary = 100 x 150 feet (ft) Permanent = 15 x 15 ft	240 (of 318)	82.6 acres	1.2 acres
Replaced 230-kV H-frame structures with guy anchors		Temporary = 100 x 150 ft Permanent = 30 x 50 ft	78 (of 318)	26.9 acres	2.7 acres
Removal-only structures (relocated)		50 x 50 ft	24	1.4 acres	-
New engineered structure landings		Permanent = 30 x 40 ft up to 40 x 80 ft	54	Included in structure areas	1.5 to 4 acres
Pulling/tensioning areas		250 x 250 ft	52	75 acres	-
Laydown areas		1 acre per yard	11	11 acres	-
Access roads	New construction	20 ft wide	4.0 miles	2.9 acres	6.8 acres
	Reconstruction	20 ft wide	12.0 miles	29.1 acres	-
	Improvement	20 ft wide	16.2 miles	39 acres	-
	Temporary	30 ft wide	3.4 miles	12.4 acres	-
	Direction of travel	No disturbance	32.5 miles	None	-
Culverts- Install new, replace, repair/improve		19.5 x 2 ft	11	0.01 acre	Included in access road area

2.2 Soils and Geologic Hazards

2.2.1 Affected Environment

Soils and Erosion Potential

Elevation along the transmission line corridor ranges from approximately 285 feet above sea level at McNary Substation to approximately 1,535 feet above sea level at various points along the corridor. Soils along the corridor are primarily silt to gravelly loams, with slopes typically ranging from 0 to 20

percent and up to 40 percent (NRCS 2023b). The project corridor crosses 447 acres of soils mapped as farmland of statewide importance,[1] but no areas are mapped with soils classified as prime farmland[2] (NRCS 2023a).

Alkaline soils are present in mile 38, on the west side of Tutuilla Creek. Soils at this location are silt loams and may also be classified as alkaline, if the pH is high and unique physical and chemical properties are observed. Alkaline soils can have weak soil structure and poor infiltration capacity. Alkaline soils are prone to swelling, ruts, and compaction when saturated.

On slopes less than 8 percent, soils are susceptible to slight-to-moderate levels of erosion when exposed to water or wind. Erosion hazard areas with slopes greater than 8 percent are susceptible to severe levels of erosion when exposed to water or wind. Approximately 18.4 percent of the project line ROW and access roads are in areas with a slight potential for erosion, 31.5 percent has moderate potential, and 49.4 percent of the project and roads have the potential for severe susceptibility to erosion (i.e., greater than 8 percent slope) when exposed to wind or water (NRCS 2023a).

Geologic Hazards

Potential geologic hazards include landslides, faults, earthquakes, and volcanic activity. The Oregon Department of Geology and Mineral Industries (OR DOGAMI) provides the publicly available Statewide Landslide Information Database for Oregon (SLIDO), which is a statewide geohazard map of known landslide deposits and estimated landslide risk. The project corridor does not cross any mapped landslide deposits[2] (OR DOGAMI 2023).

Landslide susceptibility risk is based on proximity to known landslides, estimated deep and shallow landslide susceptibility, geologic unit characteristics, and slope angles. The project corridor crosses a variety of terrain, including the Columbia River floodplain and river terrace, flat farmland, and rolling hills incised by gullies and ravines. Because of the variety of terrain between McNary Substation and Roundup Substation, the project line and roads are in a range of areas designated under all three categories of landslide risk (i.e., low, medium, and high). In general, the western half of the project corridor is in areas mapped as low landslide risk. The eastern half of the project corridor has rolling hills and steeper terrain with more areas mapped as either moderate or high landslide risk. High landslide risk areas are most prevalent on steep slopes above the Umatilla River between Nolin (project mile 23) and Rieth (project mile 36).

The closest active faults to the project area are approximately 5 miles southeast of Roundup Substation in eastern Umatilla County. In the event of an earthquake, the expected shaking along the project corridor varies between moderate to very strong, where stronger shaking is expected, the more structural damage is likely, including from liquefaction (OR DOGAMI 2023). Liquefaction is a process in

[1] The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) maintains an inventory of farmland quality areas. “Prime farmland,” is of major importance and has the best combination of physical and chemical characteristics for producing resources to meet the nation’s short- and long-range food and fiber needs. “Unique farmland” is suited for specific crops. Land that does not meet prime or unique farmland criteria may be identified by state agencies to be “farmland of statewide importance.”

[2] SLIDO landslide deposits are mapped polygons that outline the extent of past landslides identified in published references. The references used to map landslide deposits are available on SLIDO (OR DOGAMI 2023).

which loose, granular soils below the groundwater table temporarily lose strength during strong earthquake shaking. Areas with moderate liquefaction susceptibility are present between the McNary Substation to structure 14/8 and between structures 20/9 and 21/1, 34/4 and 34/5, and 36/5 and 36/8. Areas with high liquefaction-susceptibility are present between structures 15/1 and 15/8, 16/5 and 17/5, 17/7 and 19/1, and 20/4 (OR DOGAMI 2023).

No volcanic hazards are present in or near the project corridor.

2.2.2 Environmental Consequences

Soils and Erosion Potential

The Proposed Action would result in temporary and permanent impacts to soil, including erosion, compaction, potential contamination, and loss of productivity. Compaction by heavy equipment, and excavation and trenching required to replace tangent structures and counterpoise would also impact soil. The extent of impacts at each structure site would depend on the quality of existing vegetation, the size of the disturbance area, soil sensitivity (such as alkaline soils), and topography. The temporary disturbance at each structure would vary along the line depending on factors like terrain, structure size, and site conditions; however, work areas are not expected to exceed the disturbance assumptions for each project activity (Table 2-2). Impacts would occur from auguring structure holes; constructing landings; removing vegetation; temporary soil stockpiling; compacting or rutting from heavy equipment; spreading excess soils around the base of structures; burying guy wire anchors; constructing, reconstructing, or improving roads; compacting areas used as staging areas and pulling/tensioning sites; or potential contamination from wood-pole preservative or accidental equipment spills.

Ground that has been cleared of vegetation would be susceptible to erosion. The erosion potential for disturbed soils would be greatest during and immediately after construction before disturbance areas are revegetated. Ground compaction degrades the soil structure and reduces soil productivity and the soil's ability to absorb water. Reduced soil productivity in isolated project work areas located in farmland of statewide importance areas crossed by the project corridor likely occurred when the line and roads were originally constructed. Soil impacts from the existing line structures and access roads have likely recovered to the extent possible since the original transmission line construction. Similarly, soils would slowly recover from the Proposed Action as vegetation becomes reestablished, organic matter is naturally added over time, and the soils' capacity to absorb water is regained. Soil compaction may limit revegetation or increase the time vegetation would take to reestablish. Soils in active agricultural areas would recover more quickly as farming operations restore compacted soils to suitable conditions for crops.

The potential temporary disturbance area, or work area, at each H-Frame structure site is 100 by 150 feet (0.3 acre). Soil compaction from the use of heavy machinery at each structure site would typically be much smaller, limited to the landing or base area of the new or replaced structure location. At each structure, an area approximately 15 by 15 feet (0.01 acre) at the immediate base of the structure would be permanently replaced by the structure footprint, increasing to approximately 30 by 50 feet (0.03 acre) at structures with guy wires. Excess soil removed during guy anchor plate installation would be spread and contoured around the structure site with a small excavator or bobcat and stabilized.

Gravel structure landings provide space for equipment and vehicles to safely maneuver around line structures during construction and future operations and maintenance. As part of the project design, gravel landings would be improved or established at line structures located in steep terrain and size would vary based on terrain. Landings would consist of permanent gravel pads adjacent to structures that permanently disturb an approximately 30 by 40 foot (0.03 acre) area, and up to 40 by 80 foot (0.1 acre) total area, at each landing site (Table 2-2). Prompt addition of rock on the landing, followed by mulching and seeding of exposed soils, would help reduce the potential for erosion from disturbed sites. Until vegetation becomes reestablished in the temporary work areas, soil erosion could occur; however, once vegetation is established, erosion would be unlikely.

The Proposed Action has the potential to impact an estimated 110 acres of structure work areas where soils would be subject to erosion and compaction, and an additional 5 acres total would be permanently compacted with gravel landings. By using BMPs (Section 1.5) and conducting peak construction work during the dry season, impacts to soil and erosion from structure replacement and landing construction would be **low** due to the relatively small acreage affected within the existing line corridor.

The wood preservative pentachlorophenol (PCP) would be used to treat the wood poles for the transmission structures to lessen wood rot and extend the life of the poles. PCP contains chlorinated dibenzodioxins and chlorinated dibenzofurans that have the potential to leach into adjacent soils or water (such as in a wetland). PCP can move through the pole and leach from the bottom of the pole into the soil near the underground portion of the pole (EPRI 1995; USEPA 2024a). PCP tends to move through the pole rapidly for the first few years of use and then becomes relatively constant with time (USEPA 2024a).

Approximately 35 to 40 acres of soils would be moved and compacted to improve approximately 16.2 miles of access roads, and to reconstruct approximately 12.0 miles of the existing access road system. Most work on existing roads would not result in new permanent soil compaction because the roads already exist, and soils are already compacted and/or covered with gravel. Soils on roadbed shoulders would be temporarily impacted by vegetation management, grading, shaping, adding gravel, and drainage features, creating a potential temporary disturbance area assumed to be 3 feet on either side of existing roads. In addition, the Proposed Action would construct 4.0 total miles of new roads totaling approximately 9 acres, mainly by placing new road rock and grading the soil surface through open areas. Where possible, access roads are designed in areas that have been previously disturbed to avoid impacts to non-disturbed areas.

Erosion associated with new road construction and future roadway usage would have the greatest potential impact in areas where roads are on erosive soils and slopes are greater than 8 percent, which are limited in the project area. Road design criteria would be implemented to construct stable roads that do not create soil erosion in the future, including with stormwater features like culverts and drain dips. Culvert installation and replacements could temporarily disturb bank soils, road shoulders, and vegetation along drainage features, which could result in temporary increases in erosion potential during construction. These areas would be mulched, seeded, and/or replanted, based on site conditions to minimize temporary impacts and facilitate site restoration. Access road work would occur during the dry season and would include installing water bars and drain dips as well as new gravel surfacing. These features are designed to reduce erosion and minimize impacts on soil. Additionally, erosion and sediment control measures would be installed prior to and used during road work, but there would still

be low risk of erosion on slopes of 8 percent or less and moderate risk of erosion on slopes greater than 8 percent.

Soil compaction could occur where staging areas and pulling and tensioning sites are located. At pulling and tensioning sites, vegetation would be crushed or removed to create work areas to safely operate equipment. Use of the puller, tensioner, and reel equipment would also disturb and compact soil. Each pulling and tensioning site disturbance area would be approximately 250 by 250 feet (approximately 1.43 acres). The project design includes an estimated 52 pulling and tensioning sites, which would temporarily impact up to 75 acres total.

Temporary laydown and staging areas could temporarily impact approximately 1 acre each and would not require grading or other substantial ground disturbance. Land cover in pulling and tensioning sites and staging areas is about 50 percent cultivated crops, 20 percent grassland (herbaceous), and 20 percent shrub steppe (shrub/scrub) (USGS 2016). Soil and erosion impacts to these areas would be **low** because while a small amount of vegetation would be disturbed, the activities would be temporary and occur close to previously disturbed areas such as substations and previously cleared areas. Use of BMPs prior to and after use of these temporary sites would result in **low** impacts.

Danger tree removal could cause soil erosion and generate dust. Stumps would be left in place to minimize soil impacts and erosion and sediment control BMPs would be used, as appropriate (see Section 1.5). Only minimal trees would be removed, so impacts would be **none to low,** especially with the use of erosion and sediment control BMPs. Impacts would be short-term and occur in a relatively small area, while adjacent vegetation would be left in place.

Geologic Hazards – Landslides and Earthquakes

The Proposed Action includes rebuilding a transmission line over a 38.5-mile-long corridor with 40 miles of access roads covering a variety of geologic terrain, slopes, and soil types. Based on statewide geohazard map of estimated landslide risk (i.e., SLIDO) analysis, the project would remove and replace 23 structures (7 percent) in high landslide risk areas, primarily where slopes are steepest along surface water drainage features (Table 2-3). One hundred forty-one structures (43 percent) are in moderate-risk areas and 158 structures (49 percent) are located in areas with low risk.

The Proposed Action would rebuild existing structures and improve access roads on a transmission line that has been operating for 70 years. The line structures would be replaced in the same locations as existing or close to current structures. Structures located in high landslide risk areas could be problematic if the structures move with the sliding earth. Wood-pole structures are relatively flexible and can withstand minor movement; however, if minor movement occurs over several years (or even decades), the cumulative movement may be enough to stress the structure(s) and components to a point that causes a structure to fail, potentially jeopardizing the functioning of the transmission line and public safety. Access roads located in steep terrain could increase the risk of landslide impacts, both during construction and during future operation or maintenance actions.

The Proposed Action would use design criteria based on site conditions and survey data to minimize and avoid potential impacts from geologic hazards during construction or future operation of the line. For example, some structures would have engineered, designed landings to establish or improve work areas at the structure bases in steeper terrain. At least one existing structure would be completely removed

from a steep, high landslide risk area and replaced with a guyed structure in terrain with less potential for soil erosion or geological hazards. The potential geologic impacts would be minimized by stabilizing slopes and repairing slumps during construction to avoid overburdening unstable areas.

The risk for project activities to cause landslides or be impacted from geological hazards is **low**. The potential for structures to be impacted by landslides is **low**.

Table 2-3. Project Features in High Landslide Risk Areas

Structure Work Areas in High Landslide Risk Areas			
2/3	23/8	29/4–29/9	34/1–34/3
15/4	24/1	30/1	34/5
17/3	24/2	30/5–30/8	35/4
19/3	24/5	31/3	35/6
20/1	24/6	31/4	36/2–36/4
20/3–20/5	25/7	31/7	36/9
20/9	26/1	31/8–32/1	37/1
21/1–21/3	26/2	32/4–32/7	37/3
21/6	26/5–26/8	32/9	37/7
21/8	27/1	33/1	39/3
22/1–22/5	27/4–27/8	33/2	40/3
23/4	28/1–28/10	33/6	40/4
23/5	29/1–29/2	33/8	

Source: OR DOGAMI (2023).

The project area is in a seismically active region. Structures 14/8, 20/9 through 21/1, 34/4, 34/5, and 36/5 through 36/8 are in moderate liquefaction hazard areas, and structures 15/1 through 15/8, 16/5 through 17/5, 17/7 through 19/1, and 20/4 are in high liquefaction hazard areas (OR DOGAMI 2023). Transmission line structures built on soils that are susceptible to liquefaction could settle differentially and/or displace laterally (side to side) during strong ground motion. Depending on the magnitude of movement, the structure could become unusable, or in extreme conditions, the structure could fail. Under these circumstances, additional maintenance or repairs would be required. Project construction would not affect the liquefaction susceptibility of the soil.

Minimization measures and BMPs listed in Section 1.5 would be used to reduce impacts to soils and geology. Impacts remaining after minimization would include small areas of soil compaction in work areas, reduced soil productivity around structures and along access roads, and increased potential for minor amounts of soil erosion in areas with steep slopes. Overall, impacts on soil and erosion from the Proposed Action would be **low**, and the potential impacts relating to geologic hazards would be **none to low**.

2.3 Vegetation

2.3.1 Affected Environment

The project lies within the Columbia Plateau level III ecoregion and the Umatilla Plateau and Pleistocene Lake Basins level IV ecoregions (Thorson *et al.* 2003). The Columbia Plateau is an arid,

sagebrush steppe and grassland that is flanked by moister, predominantly forested, mountainous ecoregions to the east and west. This ecoregion is relatively flat and covers much of central to southeast Washington, part of north-central Oregon, and reaches slightly into northwest Idaho and British Columbia. Rain shadow from the Cascades to the west causes this region to have an arid to semi-arid climate typical of mid-latitude deserts to mid-latitude steppes. The mountains also separate this region from the influence of the ocean, leading to more extreme and unpredictable weather characteristic of continental influence. Precipitation is seasonal over much of the region, with up to three times as much rainfall in winter. Rainfall tends to increase toward the east and to the south, forming the wet season, which persists later into spring than in the west. In parts of this region, temperature inversions are common in winter, leading to low clouds and dense fog, but this moisture rarely drops much precipitation.

Vegetation in the existing transmission line project corridor is maintained for low growing species and has been extensively modified by agriculture, road and transmission line construction and maintenance, rural residential development, and operation of the existing transmission line. Land cover types within the project corridor include about 20 to 25 percent sagebrush steppe (scrub/shrub), 25 to 30 percent grassland (herbaceous, which includes both native and non-native herbs), and 30 to 40 percent cultivated crops. About 15 percent of land cover is developed, mostly low intensity or with open space (USGS 2016). The most common native plants observed during field surveys along the project corridor include green and gray rabbitbrush (*Chrysothamnus viscidiflorus* and *Ericameria nauseosa*), bulbous bluegrass (*Poa bulbosa*), and big sagebrush (*Artemisia tridentata*).

Most of the surrounding region is covered in cultivated fields, arid sagebrush steppe or grasslands. Dominant grasses include bluebunch wheatgrass (*Pseudoroegneria spicata*), needle and thread (*Hesperostipa comata*), Sandberg bluegrass (*Poa secunda*), and Idaho fescue (*Festuca idahoensis*). Dominant sagebrush species include big sagebrush and Wyoming big sagebrush (*Artemisia tridentata subsp. wyomingensis*). Antelope bitterbrush (*Purshia tridentata*) is also common. A few of the highest hills and buttes in the east support forests on their north-facing slopes, and there are also some open forests along the steeper river ravines in the east. Outside of these areas, most of the region has sparse or no tree cover.

Non-native plants, including some noxious weeds, have displaced many of native plant species that occur in the project corridor. The Oregon Department of Agriculture (OR DOA) has mapped numerous populations of noxious weeds throughout the project corridor. Mapped populations include diffuse knapweed (*Centaurea diffuse*), yellow star thistle (*Centaurea solstitialis)*, rush skeletonweed (*Chondrilla juncea*), and purple loosestrife (*Lythrum salicaria*) (OR DOA 2023). Rush skeletonweed is designated as a “B” and a “T” species by the Oregon State Weed Board. “T” species are the priority species for prevention and control. The remaining species are “B-Listed” weeds, which are lower priority species based on distribution. During field surveys, the primary non-native plant species observed were cheatgrass (*Bromus tectorum*), yellow star thistle, and tall tumble mustard (*Sisymbrium altissimum*).

Desktop review determined that there is one state threatened species and several state listed candidate plant species that could occur in the project area: Lawrence’s milkvetch (A*stragalus collinus var. laurentii;* Oregon threatened), crenulate moonwort (*Botrychium crenulatum*; Oregon candidate), Columbia cress (*Rorippa columbiae*; Oregon candidate), Oregon bolandra (*Bolandra oregana*; Oregon

candidate), dwarf evening primrose (*Eremothera pygmaea;* Oregon candidate), hepatic monkeyflower (*Erythranthe jungemannioides*; Oregon candidate), and sessile mousetail (*Myosurus sessilis*; Oregon candidate). None of these state-listed species were observed in project work areas during field surveys.

No vegetation species currently listed as threatened or endangered under the ESA is listed in Umatilla County, Oregon. Milkweed (*Asclepias* spp.), the host plant for the monarch butterfly (*Danaus plexippus*), which is a proposed threatened species under the ESA, was observed within the project area. It was observed near structures 4/1 and 13/3.

2.3.2 Environmental Consequences

Transmission line structure replacement activities would require clearing and crushing vegetation, causing damage to plants, including some plant roots. Soil compaction by heavy equipment, and excavation and trenching required to replace structures and counterpoise, would also disturb plant roots. The extent of impacts at each structure site would depend on the quality of existing vegetation, the size of the disturbance area, soils, and topography. Temporary work areas were developed for each project activity and represent the maximum extent of potential impacts (Table 2-2). At structure replacement sites (318 total), approximately 110 acres of vegetation could be temporarily impacted in the 100-foot by 150-foot (0.3 acre) structure work disturbance areas with approximately 4 acres of permanent vegetation loss. Near sensitive sites such as wetlands, some disturbance areas could be reduced to a 0.1-acre footprint (25-foot radius from the structure center). Structure work constitutes about 80 to 85 percent of the total disturbance area. Predominant vegetation cover in structure work areas about 30 percent cultivated crops, 30 percent herbaceous, 20 percent scrub/shrub vegetation, and the remaining 15 percent is a mixture of disturbed, developed lands. Vegetation surveys in structure replacement work areas identified primarily cheatgrass, grey and green rabbitbrush, yellow star thistle, bulbous bluegrass, weedy herbaceous species, and agricultural crops.

Structure replacement vegetation impacts would be **low** and mostly temporary, as work areas are in the previously disturbed ROW, which is routinely maintained for low-growing vegetation, and vegetation would regrow after construction disturbance. Sagebrush recovery may require more time to recover; however, structure landings have been previously disturbed and are maintained free of larger sagebrush plants. Vegetation impacts would be minimized using the BMPs in Section 1.5. Soil compaction and spreading construction subsoils could impact the initial regrowth of native low-growing vegetation or agricultural crops, where present, and mechanized equipment may increase the spread of noxious weeds. Work would be done during dry periods to the extent practicable and roots of trees and large shrubs would be left in the ground after removal to reduce erosion. Crop damage would be avoided by performing work after harvest, limiting structure work areas around towers, and use of temporary access roads in agricultural fields. The Proposed Action would not permanently impact crops or agricultural field land-uses after construction.

At pulling and tensioning sites, up to approximately 75acres of vegetation would be temporarily impacted by crushing or removal to create an area to set up equipment. Land cover is similar to other work areas, predominantly agriculture land (40 to 45 percent), sagebrush steppe (30 percent) and grassland (20 to 25 percent). The disturbance area for pulling and tensioning sites, approximately 5 percent of the total work area, is approximately 250 feet by 250 feet (approximately 1.43 acres). The

project would require about 52 pulling and tensioning sites, temporarily disturbing up to approximately 75 acres (Table 2-2). Impacts from pulling and tensioning sites would be **low** because vegetation would eventually regrow and most project pulling and tensioning sites are within the existing, disturbed ROW corridor in areas where vegetation is maintained. At sites where noxious weeds are present, mechanized equipment could increase the spread of weeds to other locations, but BMPs such as wash stations and inspecting and cleaning equipment before moving to new work sites would be used to minimize and avoid the spread of weeds.

Access road improvements requiring adding gravel would occur along approximately 38.5 miles of roads, temporarily disturbing approximately 28 to 32 acres of vegetation. Of roadwork activities, most occur on existing roads or previously disturbed areas. Some roadside woody vegetation, mainly herbs and shrubs, would be trimmed or removed. Grading the road shoulder also would remove some herbaceous species. Gravelling and use of mechanized equipment may crush vegetation and compact soil. Impacts would be temporary and **low**, as species along the roadside would be allowed to regrow. Mechanized equipment could increase the spread of noxious weeds. **Low** impacts are anticipated, as access road improvement work would occur in existing access road prisms that have been previously disturbed.

Access road reconstruction requiring grading or more extensive upgrades would occur along 12.0 miles of roads, impacting up to 7 acres of vegetation in and along the roads. In addition, up to 9 acres of temporary vegetation impacts and 4.7 acres of permanent vegetation impacts would occur as a result of 4.0 miles of new road construction, which would permanently convert existing surface vegetation to gravel road surface. This more impactful roadwork occurs in about 50 percent sagebrush steppe, 30 percent grassland, and 20 percent agriculture land. The maximum depth of ground disturbance for new or reconstructed roads is about 5 feet. Cut and fill in areas with steep slopes or curves; graveling, trimming, and removing roadside vegetation; and the use of mechanized equipment would damage plants, compact soil, and could spread noxious weeds. Therefore, impacts would be permanent and **moderate** because vegetation would not be expected to reestablish in these areas.

The Proposed Action would install or replace three culverts and improve and repair eight existing culverts on project access roads. These streams are ephemeral drainages in open, upland areas, without riparian vegetation. Culvert and drainage maintenance would restore functionality that could provide a beneficial impact to vegetative communities downstream that depend on the intermittent, ephemeral runoff. Culvert replacement and installation in wetter areas along access roads would cause temporary, **low to moderate** impacts on vegetation, with most impacts being short term during construction activities.

The use of 11 temporary laydown areas and the installation or repair of 31 gates could disturb native soils or vegetation in those areas. Staging areas would be approximately 1 acre each and sited in locations that do not require permanent ground disturbance (e.g., no significant site improvements, grading, or excavation). These impacts would be **low** because while a small amount of vegetation would be disturbed, the activities would be temporary and occur close to previously cleared areas and previously disturbed areas, such as substations.

Special-status Plant Species

No Oregon state sensitive plant populations were identified during project planning surveys. During the construction season, either in vegetative form, blooming, or fruiting, special-status plant species would be vulnerable to disturbance, if present. Showy milkweed (*Asclepias speciosa*), an obligate host plant for monarch butterflies, was documented in two locations in work areas at structures 4/1 and 13/3. To minimize potential impacts to milkweed, these two locations would be shown on project maps and avoided during construction to the extent practicable (Section 1.5). Vegetation in project work areas would typically be crushed in place and able to regrow after construction, apart from permanent access road improvements and the immediate area around bases of structures that are maintained free of vegetation. Therefore, impacts to special-status plants, if present, are anticipated to be temporary and **none to low**.

Weeds

During and after construction, existing noxious and undesirable weed populations could spread and colonize disturbed areas. Construction equipment, vehicles, workers, and materials contaminated with seeds, roots, and other weed parts could spread weeds from one work area to another. Bare, disturbed, and compacted soils are vulnerable to weed invasion through natural dispersal such as wind-blown seeds. If allowed to establish, weeds could displace native plants, reducing biodiversity and degrading vegetative communities, whether natural or managed.

Minimization measures and BMPs listed in Section 1.5 would be used to reduce or avoid impacts on vegetation in work areas and would also limit potential spread or proliferation of weeds. BMPs include inspecting vehicles before entering construction areas, remaining on established roads, and using weed wash stations or other appropriate equipment cleaning measures for construction equipment. Impacts to noxious and undesirable weeds from construction activities and disturbance areas would be **low** with use of BMPs. Temporary and long-term soil compaction would reduce soil productivity around structures, landings, and along access roads and could make it difficult for native species to recover in those areas, if present. Minimization measures and BMPs listed in Section 1.5 would be used to reduce or avoid impacts on vegetation. Overall, the Proposed Action result in **low-to-moderate** impacts to vegetation.

2.4 Water Resources, Floodplains, and Fish

2.4.1 Affected Environment

Water Resources

The project spans the Umatilla River and a few of its tributaries, including Birch Creek, McKay Creek, and Tutuilla Creek, as well as several other named and unnamed tributaries, ditches, and canals (Umatilla Drain, R-3 Pipe, N Canal, Hermiston Ditch, Maxwell Canal, A Line Canal, Feed Canal, Stanfield Branch Furnish Ditch, Feed Canal, Stanfield Drain, and Furnish Ditch). Most water resources within the survey area occur as ephemeral streams that generally flow perpendicular to the project area and eventually discharge to the Umatilla River or one of its tributaries. The few perennial streams and rivers located in proximity to the project corridor (i.e., the Umatilla River, Birch Creek, McKay Creek, and Tutuilla Creek) originate in adjacent mountainous areas and are spanned by the overhead line.

The Oregon Department of Environmental Quality (OR DEQ) 303(d) list includes the Umatilla River for *E. coli*, fecal coliform, arsenic, temperature, and methylmercury; and the Hermiston Ditch for ammonia (OR DEQ 2023a).

An OR DEQ groundwater management area is located within the project corridor, the Lower Umatilla Basin Groundwater Management Area, from McNary Substation to structure 20/9 (OR DEQ 2023b). Proximity to wells was assessed by well placement within the ROW or within 100 feet of the centerline of the transmission line. There are 21 water wells, 3 monitoring wells, and 13 geotechnical holes near the transmission line (OR DEQ 2023c). Most of these are located toward the west end of the project (Table 2-4).

Table 2-4. Structures on the McNary-Roundup Lines that are near Wells

Transmission Line	Structure Work Areas near Water Wells		Structure Work Areas near Monitoring Wells	Structure Work Areas near Geotechnical Holes
McNary-Roundup	0/1 2/4 2/6 2/9 5/3 6/7	6/8 8/1 11/4 34/7 36/5 36/8	9/8 10/3 10/4	0/1 2/2 2/6

Floodplains

Along the project corridor in Umatilla County, there are Federal Emergency Management Agency (FEMA)-designated 100-year floodplains along the Columbia and Umatilla rivers. Two temporary guard structures would be placed within a 100-year floodplain (FEMA 2023), but would be removed following construction.

Fish

The Umatilla River is the only major waterbody that the project corridor crosses. The Umatilla River is home to several resident fish species, including Chinook salmon (*Oncorhynchus tshawytscha*) and rainbow trout, as well as two fish species listed under the ESA: bull trout (*Salvelinus confluentus*) and Middle Columbia River summer steelhead (*O. mykiss)*.

Bull trout are typically found in snowmelt-dominated streams that maintain cold water temperatures in headwater tributaries year-round. Bull trout are documented to occur in the Umatilla River within the reaches that are crossed by the project overhead transmission lines (PSMFC 2019; StreamNet 2023). The Umatilla River provides foraging, migration, and overwintering habitat for bull trout and is considered essential for maintaining connectivity for amphidromous and fluvial life histories (U.S. Fish and Wildlife Service [USFWS] 2010). There is no documentation that bull trout use small tributaries or ephemeral drainages in the project area, and no headwater spawning or rearing habitat is present.

The Middle Columbia River summer steelhead distinct population segment (DPS) is a listed threatened species under ESA and an Oregon state-listed sensitive species in the project area. The Umatilla River, Birch Creek, Tutuilla Creek, and McKay Creek are designated critical habitat for summer steelhead. Steelhead are anadromous, occupying freshwater streams or lakes during spawning, migrating back

through brackish water to the open ocean to live during the adult non-spawning phase of their life cycle, and return to fresh water only to spawn.

2.4.2 Environmental Consequences

Water Resources

Under the Proposed Action, 14 structure work areas would be located within 100 feet of a water resource such as a creek, ditch, or canal. Most of which are ephemeral and dry most of the year (Table 2-5).

Table 2-5. Project Activities near Water Resources

Structures within 100 Feet of Water Resources	Pulling and Tensioning Sites within 100 Feet of Water Resources	Staging Areas within 150 Feet of Water Resources
13/7 – 13/8 20/1 21/7 – 21/8 35/6 39/4	03-2A 03-2B 07-4B 08-7B 12-4A 36-9B	Laydown yard 14-1 Laydown yard 30-1

New poles would be installed in new pre-drilled holes or re-drilled existing holes. Excavated material and gravel would be used to backfill the holes once the poles are installed. The size of disturbance areas would be minimized to the greatest extent practicable and would employ BMPs such as installing erosion-control measures (e.g., silt fences, straw wattles, and other sediment control measures) prior to work in or near floodplains and streams, and inspecting and maintaining, as necessary, to ensure their continued effectiveness to minimize sediment discharge into waterways and wetlands. For structures planned within 100 feet of waterways and wetlands, excess excavated material would be removed from the site and disposed of at an upland disposal area.

Each structure would have a small area of exposed soils, temporarily, that is unlikely to be a substantial source of sediment to nearby streams. Vegetative buffers between the structures and the structure work areas would help absorb and retain sediments dispersed from work areas. Most construction work would occur during the dry season, which would reduce the potential for runoff and erosion. Temporary structure work areas near water resources were reduced to the maximum extent practicable to minimize impacts.

H-frame, wood-pole structures would be replaced with new H-frame, wood-pole structures. PCP from wood poles could reach receiving surface streams, although PCP concentrations decrease rapidly with distance and none of the structures would intersect surface water in the project corridor. As described in Section 1.5, pole wraps would be used on structures located within 50 feet of streams or within wetlands and the 100-year floodplain; however, there are no structures located in these areas and no pole wraps are proposed. Such poles would be wrapped or encapsulated with an appropriate material to prevent leaching of chemicals at least to 18 inches above the ground surface, and the old wood poles would be removed from the project area.

BMPs described in Section 1.5 would be used for structure replacement, including pole wraps, working during the dry season, and implementing erosion control measures. Potential impacts from structure replacement to water resources would be temporary and **low**.

There are six pulling and tensioning sites within 100 feet of water resources. Each of the pulling and tensioning sites would cause temporary disturbance within an area of 250 feet by 250 feet (1.43 acres); however, pulling and tensioning sites were reduced in area to the extent practicable to avoid impacting water resources. Most construction work would occur during the dry season, which would reduce the potential for runoff and erosion. Further, use of these areas would not result in the removal of riparian trees and shrubs. Placement of timber mats could also be required if ground surfaces are not dry. Additional erosion-control measures would be implemented in accordance with the BMPs and minimization measures provided in Section 1.5. Because water functions are expected to return to pre-construction conditions after construction and restoration, impacts would be **low**.

Mobile guard structures, which can be temporarily positioned on existing developed road surfaces, would be used instead of temporary wood-pole guard structures in and adjacent to water resources. There would be **no** impacts on water resources from guard structures.

A total of three culverts would be installed at existing streams or drainage crossings: two new culverts would be installed and one existing culvert would be replaced. Additionally, eight existing culverts would be improved or repaired. The Proposed Action also includes 22 fords and 12 drain dips that would be installed or repaired, some at existing ephemeral stream or drainage crossings. None of the work areas are located on fish-bearing streams or have downstream connections in proximity to rivers or streams where fish occur. These are all ephemeral drainages that contain water from storm events only occasionally.

In general, fords are designed to allow natural water flow to pass over roads and ground disturbance from ford installation work would occur within existing access road prisms. The temporary disturbance areas for fords would be regraded to pre-construction contours and would be mulched, seeded, and planted per plans and specifications. Ground-disturbing activities would comply with BPA BMPs and minimization measures (Section 1.5) to reduce sediment entering ephemeral drainages.

Work in these crossings would occur when these features are dry. Additionally, standard measures for controlling sediment transport and runoff in the event of rainfall would be installed and maintained during construction at these crossings to reduce impacts to downstream water quality, per project permits. The work would occur in the road width at the crossing and would not impact the stream bed or drainage contours upstream and downstream of the crossing. The culvert slope would not exceed stream gradient, and adjacent temporary and permanent sediment-control structures such as silt fences, check dams, rock armoring, or riprap would be used to prevent erosion or sedimentation. Because erosion and sediment control BMPs would be used during all road work, including near or in streams, stream gradients would be maintained, and disturbed areas would be mulched and seeded to facilitate restoration, impacts on water resources would be **low**.

Groundwater

Soil compaction during structure and access road work could temporarily impact groundwater recharge by reducing infiltration capacity and increasing surface runoff to streams. However, these impacts are

expected to be temporary and in small construction areas spread over a wide geographic area. Impacts on groundwater quality during construction and over the long term could occur from the accidental release of hazardous chemicals used during construction (e.g., fuels, lubricants, solvents), the removal of existing creosote-treated wood poles and creosote-contaminated soil excavated from existing structure holes, and the leaching of PCP from new PCP-treated wood poles into groundwater. Minimization measures would be used to minimize the spread of PCPs and petroleum products, including proper handling and disposal of creosote-treated wood poles and creosote-contaminated soils; spill prevention, containment, and cleanup; and wood-pole storage methods to minimize the risk to groundwater from the accidental release of hazardous chemicals. However, any spills would likely be small and localized. BPA would immediately contain and clean up spills and dispose of regulated materials in accordance with federal and state laws. Since groundwater recharge would not be affected due to the small, localized nature of the impact areas, and BMPs and minimization measures would be used to minimize the risk to groundwater quality from the accidental release of PCPs and petroleum products, impacts would be **low**.

Floodplains

The work areas for one structure replacement and two temporary guard structures would be located within a 100-year floodplain. One tower is currently located in the existing floodplain of Birch Creek but would be relocated outside of the 100-year floodplain area during construction. The existing transmission line ROW is already cleared and maintained in these locations and existing access routes to structures currently exist. Access to the new structure would be through an existing driveway and would not require improvements within a floodplain. The guard structures would be temporary and no additional fill would be added to the floodplain. Removal of the tower in the Birch Creek floodplain would remove material and disturbance from the floodplain. Overall, the project would have **none to low** impact.

Fish

The Proposed Action would replace and install three new culverts and improve and repair eight existing culverts on stream channels that intersect the project. None of these crossings have fish use; therefore, fish passage designs for these culverts are not required. The culverts on the project access roads are generally in ephemeral drainages in upland areas that do not provide habitat for fish. The culverts would be designed and sized to meet flow requirements for these ephemeral drainages during storm events or other periods of flow.

BMPs (Section 1.5), including erosion and sediment control measures at these work areas, would contain overland flow and typically prevent sediment from entering fish habitat, minimizing temporary impacts from construction activities. In the unexpected event that any sediments reach potential fish habitat, sediment inputs are expected to be small pulses and temporary in duration. There are no project construction activities within proximity of a fish bearing stream with the potential to cause noise or vibration disturbance that ambient underwater noise levels. BMPs and minimization measures would be used, including setback distances for fueling and staging areas from water bodies, to minimize potential for spills.

Overall, because there is no work proposed in fish-bearing streams, the Proposed Action would not permanently remove, degrade, or impact fish or aquatic habitat. With implementation of BMPs and

minimization measures, the Proposed Action would not harm any fish or degrade fish habitat, if present, and impacts would be **none to low**.

ESA-listed Fish Species

The Umatilla River is home to two ESA-listed fish species, bull trout and Middle Columbia River summer steelhead, and is designated critical habitat for steelhead (StreamNet 2023). Birch Creek, Tutuilla Creek, and McKay Creek are all designated critical habitat for steelhead, and have documented presence of coho salmon, Chinook salmon, and steelhead. Stanfield Drain provides habitat for coho salmon and steelhead (StreamNet 2023). These ESA-bearing waterbodies are crossed by the existing overhead transmission line that would be replaced by the rebuild project.

The project would not require any in-water work activities. Temporary ground disturbance from some project activities could increase potential for erosion or turbid stormwater runoff from work areas, activities like culvert and ford repairs, replacements, or installations, or transmission line work areas uphill from the Umatilla River. As described above, conducting work when areas are dry and using BMPs during project activities, including culvert installation and maintenance, would result in **no** impacts on ESA-listed fish species, including steelhead and bull trout, and their designated critical habitat. Although no impacts to fish are anticipated, BPA submitted a project notification form under SLOPES due to work that is proposed near streams and rivers with ESA-listed fish populations. The notification form was submitted as a preventative measure in case flooding or other extreme weather events during construction occur, which have the potential to impact fish.

Minimization measures and BMPs listed in Section 1.5 would be used to avoid potential for indirect, downstream impacts from project activities, such as minimizing the potential for sediment movement to streams that could result in temporary impacts to water quality.

2.5 Wetlands

2.5.1 Affected Environment

Sixteen wetland areas were delineated in the project corridor (HDR 2023) and characterized according to the hydrogeomorphic and Cowardin (Cowardin 1979; FGDC 2013) classification systems. Most wetlands in the project corridor occur on the western portion of the project and are primarily associated with the alteration of hydrology for the purpose of irrigation. These wetlands were characterized as depressional (11), riverine (1), sloped (2), and slope/depressional (2), fed by irrigation ditches and canals spread over the landscape distributing water from the Umatilla River and reservoirs.

Due to the native sagebrush steppe environment, historic and continued transmission line vegetation management, and surrounding agricultural practices, tall woody vegetation is sparse within the transmission line ROW (Cowardin 1979; FGDC 2013). Most delineated wetlands within the ROW are entirely palustrine emergent and palustrine scrub-shrub, with only six wetlands containing palustrine forested components. Riparian areas are the primary locations with tall woody vegetation. Where wetlands extend outside the survey area and beyond the ROW, there was typically minimal change in vegetation communities as these areas are either sagebrush steep and grasslands or areas managed for agriculture.

Typical wetland and riparian areas within the project corridor are vegetated with a mixture of native plants, including common rush *(Juncus effusus*), soft stemmed bullrush *(Schoenoplectus tabernaemontani*), giant goldenrod *(Solidago canadensis*), a mixture of pasture grasses (e.g., *Holcus lanatus, Lolium perenne, Agrostis capillaris,* and *Poa pratensis),* and invasive reed canary grass *(Phalaris arundinacea*). Depressional wetlands encountered in the project corridor were primarily associated with the large wetland complex to the east, dominated by dense growth of reed canary grass and poison hemlock *(Conium maculatum*), common rush, soft stemmed bullrush, cattail, (*Typha latifolia*), along with pasture grasses and invasive Himalayan blackberry (*Rubus armeniacus*). Additionally, many of these wetlands were heavily grazed by livestock.

2.5.2 Environmental Consequences

The Proposed Action could result in impacts on wetlands by adding fill materials where project activities would occur within or adjacent to wetland boundaries, disturbing vegetation and water conveyance through equipment use in wetlands, or if the project changes drainage and wetland hydrology. Impacts on wetlands could reduce wetland functions such as filtering pollutants, providing habitat, and water conveyance abilities. In addition, the Proposed Action has the potential to impact a wetland's condition, stressors to the wetland, and wetland sensitivity. Project planning surveys included background review and field surveys for wetlands and water resources within potential project work areas and access roads.

Based on existing data and project field surveys, no new transmission line structures would be built within wetlands. Two structures (2/5 and 8/3) would be removed from their existing locations in a wetland and replaced in new locations outside of the associated wetland boundaries. Structure 2/5 would be replaced approximately 350 feet from its current location and structure 8/2 would be moved 20 feet. Replacement structures would be moved outside of the impacted wetlands and the holes would be backfilled with native soil and rock, which would eventually be permanently reclaimed by the associated wetlands. There would be temporary impacts around both existing structures for construction crews to remove existing wood poles and to backfill the holes. The remaining holes left from structure removal would be backfilled with native soil and the Proposed Action would ultimately improve wetland function by removing the structures that currently impede wetland function.

A limited number of structures would be replaced near wetlands (i.e., 100 feet or less; see Table 2-6); however, impacts to wetlands from these structure replacements would be avoided. In general, project structures would be replaced in kind with similar wood poles in the same general locations in already-disturbed structure landing areas. Temporary wetland impacts for pole replacements and other project work areas would be limited, using wetland mats and implementing minimization measures described in Section 1.5. Overall impacts to wetlands from project activities would be **low**.

Table 2-6. Project Activities near Wetlands

Structure Removals from Wetlands (Re-located)	Structure Replacements within 100 feet Wetlands	Pulling and Tensioning sites within Wetlands	Pulling and Tensioning sites within 100 feet of Wetlands	Staging Areas in Wetlands	Staging Areas within 100 feet of Wetlands
2/5 8/2	2/6 2/8 4/1 8/2–8/3 8/5–8/6 13/1 13/3 13/7–13/8 14/3	02-5A	03-2B 03-2A	None	Laydown Yard 14-1

Pulling and tensioning sites are selected based on transmission line design, conductor lengths, topography, and the ability to accommodate equipment, may need to be cleared of interfering vegetation to position the equipment. Locations in or near wetlands were avoided during planning and design to reduce potential impacts, but there is one pulling and tensioning site required within a wetland boundary and two additional areas sited within 100 feet of wetlands. Use of the pulling and tensioning site would be a temporary impact, and mats would be used to minimize impacts on wetland vegetation. Most construction work would occur during the dry season, which would reduce the potential for runoff and erosion. A mobile guard structure would be used during pulling and tensioning activities, which use typical construction vehicles and can be positioned outside of wetlands, typically on existing road surfaces or shoulders. No poles need to be installed in the ground. There would be no temporary or permanent wetland impacts from mobile guard structures.

All temporary disturbance areas in wetlands would be reseeded with an appropriate native seed mix, and BPA would monitor these areas for adequate growth and implement contingency measures, as necessary (see Section 1.5). BPA would monitor revegetation until uniform perennial vegetation provides 70 percent or more of the density of coverage that was present prior to earth-disturbing activities. Because wetland functions are expected to return to pre-construction conditions after construction and restoration, impacts from these construction activities would be **low**.

There are no laydown and staging areas within wetlands, and no hazardous materials storage or service equipment storage/maintenance would be allowed within 150 feet of wetlands, if practicable. The staging areas are generally developed or previously disturbed, in open areas that do not require site development or clearing before use. BMPs, such as erosion control measures, described in Section 1.5 would be implemented, and impacts to wetlands from staging and laydown areas would be **none**.

There would be no new, improved, or reconstructed roads in wetlands. Access road work would occur on existing, disturbed roadbeds or travel routes, and new access roads have been designed during project planning to avoid wetlands. Access road work adjacent to or near drainages could disturb existing buffer vegetation ground cover, potentially increasing construction-related runoff and erosion. If construction extends into the wet season, traffic on gravel roads would have the largest potential to

deliver sediment to stream channels. Because BMPs would be used to minimize sediment runoff to wetlands, access road improvement and travel on roads would result in **low** impacts on wetlands.

Potential temporary wetland impacts for direction of travel routes with no existing roads would be limited by using wetland mats, working during the dry season, and using erosion control measures prior to work, described in Section 1.5. Two wetlands would be temporarily impacted as a result of temporary direction of travel roads, covering an area up to 0.02 acre for temporary impacts. Because BMPs, such as matting and erosion and sediment control measures, would be used and road plans were designed to avoid and minimize impacts to sensitive resources, temporary roads would result in **low** impacts on wetlands.

No wetlands would be permanently or temporarily impacted by culvert, ford, or drainage dip replacement and repair. In general, fords are designed to allow natural water flow to pass over roads. The ground disturbance from ford and culvert installation, replacement, and repair work would primarily occur within previously disturbed areas in the existing access road prisms, although culvert work could result in temporary vegetation clearing near the inlets and outlets of the culverts. The temporary disturbance areas for culverts and fords would be regraded to pre-construction contours and would be mulched, seeded, and planted. Minimization measures and BMPs listed in Section 1.5 would be used. Because no impacts to wetlands are proposed and BMPs would be used to minimize sediment runoff to wetlands, wetland impacts from culvert and ford activities would be **low**.

The Proposed Action would result in a calculated total of less than 0.01 acre of unavoidable permanent impact to wetlands from structure replacement and access road work. A portion of the unavoidable permanent impact area is for the removal and relocation of two existing structures (2/3 and 8/2) to new locations outside of the wetlands, which would result in a net benefit to the subject wetlands.

2.6 Wildlife

2.6.1 Affected Environment

A large portion of the project corridor, approximately 30 to 40 percent of the 38.5-mile length of the line, is in active agricultural lands or other areas with low species diversity and limited habitat structural complexity (i.e., developed properties or pastureland). The dominant vegetation categories, besides agricultural or developed land cover, consist primarily of arid sagebrush steppe (about 35 percent) and grassland (about 20 to 25 percent).

A variety of animals and animal signs were observed throughout the project area during habitat surveys, including small mammals, raptors, and songbirds. Common wildlife that may occur in the project area includes mule deer (*Odocoileus hemionus*), bobcats (*Lynx rufus*), and black-tailed jackrabbits (*Lepus californicus*). Burrows for small mammals, including coyotes (*Canis latrans*) and American badgers (*Taxidea taxus*), were observed in a few locations on the east end of the project corridor. Several other burrows of unidentified mammals were observed between miles 19 and 40.

Incidental observations of birds along the project corridor during habitat surveys included bald eagles (*Haliaeetus leucocephalus*), golden eagles (*Aquila chrysaetos*), red-tailed hawks (*Buteo jamaicensis*), ospreys (*Pandion haliaetus*), long-eared owls (*Asio otus*) with chicks, great horned owls (*Bubo*

virginianus), northern harriers (*Circus hudsonius*), and prairie falcons (*Falco mexicanus*). Most of these observations were of birds flying over, calling, or perching in proximity to the project corridor. In eastern Oregon, bald eagles typically live close to water along rivers and large lakes, and in open dry country where prey is abundant (Audubon 2023a). Bald eagle nesting habitat in the project corridor is limited, but one bald eagle nest was observed during project surveys in a dead snag among riparian trees 0.75 miles north of structure 30/6, relatively close to the Umatilla River. Golden eagle nesting habitat in eastern Oregon includes cliffs, rugged terrain, and steep slopes and large trees at or near the edge of clear-cuts and open fields (WDFW 2023a). Incidental observations of eagles during habitat surveys included one golden eagle flying over agriculture fields and the transmission line near structure 39/1. Additional incidental observations of individual birds during habitat surveys were not associated with known nests in the project corridor; however, nests observed during survey efforts included an active bald eagle nest near structure 30/6; an active long-eared owl nest near structure 26/6; a raven (*Corvus corax*) nest near structure 19/4; an osprey nest near structure 31/2; red-tailed hawk nests at structures 19/8, 22/3, 23/6, 25/4, and 34/1; and an inactive red-tailed hawk nest near structure 26/4 where a pair of burrowing owls (*Athene cunicularia*) were observed.

Ferruginous hawks (*Buteo regalis*) are an Oregon state-listed sensitive species (ODFW 2024) with the potential to occur in the project area. The largest of buteo hawks, ferruginous hawks can be found during all seasons in plains and prairies in open and dry habitats. They inhabit dry grassland, sagebrush plains, saltbush and greasewood flats, rangeland, and deserts (Audubon 2023b). No ferruginous hawks were observed during surveys for the project.

ESA-Listed Species

Yellow-billed Cuckoo

The yellow-billed cuckoo (*Coccyzus americanus*), a federally listed threatened species under the ESA, has the potential to occur in the project vicinity. Yellow-billed cuckoo nest in deciduous habitats with clearings and dense, shrubby vegetation, especially those near rivers, streams, and wetlands (Wiles and Kalasz 2017). The species displays a strong preference for large (greater than 40 hectares), wide (over 100 meters), continuous riparian zones dominated by cottonwoods (*Populus* spp.) and willows (*Salix* spp.) (Wiles and Kalasz 2017; WDFW 2023b). Although potentially suitable riparian habitat occurs along the Columbia River, the project corridor is comprised primarily of weedy shrubs and grasses, agricultural development, and rural residential development, and does not contain suitable habitat for yellow-billed cuckoos. Therefore, the potentially suitable habitat in the project corridor is limited to riparian areas within and adjacent to the floodplain of the Columbia River.

Monarch Butterfly

The monarch butterfly is a proposed threatened species for federal ESA listing with the potential to occur in the project area. The only proposed critical habitat is in California. Monarch butterflies occur in two main populations throughout North America: the larger eastern population breeds east of the Rocky Mountains and migrates to central Mexico, while the smaller western population breeds west of the Rockies and migrates to the California coast (WAFWA 2019). Monarch butterfly reproduction is dependent on the presence of milkweed; as a result, habitat use is driven primarily by the presence of milkweed species. Milkweeds serve as the primary food source for caterpillars and provide protective cardenolides, toxic compounds that render the caterpillars unpalatable to many predators (WAFWA

2019). Although monarch breeding is associated with milkweed, the *Western Monarch Butterfly Conservation Plan* (WAFWA 2019) notes that the presence of milkweeds is not synonymous with monarch presence. Breeding monarchs select habitat based on a range of characteristics needed for successful reproduction (e.g., roosting habitat, vertical structure for shade, distance to water).

Suitable breeding and migratory habitats often contain the same key components, including milkweed, nectar sources for adult monarchs, and roosting structures (i.e., trees or shrubs) that sustain monarch reproduction and migration (WAFWA 2019). Although little is known regarding the specific migration routes of western monarchs, historical records indicate that fall migrants often followed riparian corridors due to the reliable distribution of water, nectar sources, and roosting structures (WAFWA 2019). A study in Idaho and Washington (Waterbury *et al.* 2019) found that highly productive monarch breeding habitat typically includes moist-soil sites within a matrix of grasslands, wetlands, deciduous forest, and shrub-steppe habitats supporting large, contiguous, and high-density milkweed stands. The project area overlaps a range of areas with high (60 to 80 percent), moderate (30 to 50 percent), and low (0 to 20 percent) potential to support monarch breeding habitat (WAFWA 2019). The areas with the highest potential to support monarch breeding habitat are located on the easternmost portions of the corridor in the Columbia Plateau ecoregion.

Due to the known presence of milkweed in the project ROW, breeding habitat for monarchs is present in the project area. However, critical habitat has not been proposed or designated for the monarch butterfly. Incidental observations during surveys included a monarch butterfly near tower 13/3. This observation was noted near a milkweed patch (Section).

Suckley's Cuckoo Bumble bee

Suckley's cuckoo bumble bee (*Bombus suckleyi*) is a federally proposed endangered insect with no proposed critical habitat. Historically, its range in the United States extends from the Midwest to the Pacific Northwest, including northern California and parts of the southwest (89 Federal Register [FR] 102076). It prefers forests, shrublands, urban parks and gardens, and grasslands (Williams *et al.* 2014). The number of observations has declined steadily since the 1950s, and the species has not been observed within the United States since 2016 (USFWS 2024a).

They are generalist pollinators and have been reported on a wide variety of flowers, including Russian knapweed (*Centaurea repens*) and species from the following genera: *Aster, Chrysothamnus, Cirsium, Solidago*, and *Trifolium* (CBD 2020). They are also obligate parasites, as they require the worker caste and pollen collection baskets of social bumble bees (primarily the western bumble bee) to provide for their offspring, as they cannot provide food for their own. They invade social bee nests, kill the host queen, destroy host eggs, and take control of the worker caste to provide pollen for the new queen's offspring (Lhomme and Hines 2019). Due to this unique life history strategy, Suckley's cuckoo bumble bees are at a particular risk of decline and potential extinction as their host species are also declining in abundance and range in recent years (CBD 2020). They require abundant and diverse floral resources in both spring and fall for colony fitness, female development, and sustaining females during overwintering (Hatfield and LeBuhn 2007; Lhomme and Hines 2019; Ogilvie and CaraDonna 2022). Overwintering sites are either under mulch, in rotting logs, or below ground, away from nests (89 FR 102076). While the project area is vegetated with species listed above, the ROW itself is disturbed and does not have high floral diversity that the bee prefers.

California Condor

The California condor (*Gymnogyps californianus*) is a federally listed endangered species with designated critical habitat in southern California and California's central valley (USFWS 2024b). However, the potential range of the species outside of these areas has been designated under section 10(j) of the ESA as non-essential, experimental populations (NEPs). The 10(j) status for California condor was established by two separate rulemakings by the USFWS to facilitate reintroduction of California condors to promote recovery and conservation of the species. USFWS established the first California condor 10(j) NEP based on a reintroduction site north of the Grand Canyon in Arizona (USFWS 1996). The second 10(j) NEP population was established by a rulemaking in 2021, called the Pacific Northwest (PNW) NEP boundary. The PNW NEP boundary includes areas of its historic range where it is now extirpated, including northern California, northwest Nevada, and all of Oregon. Critical habitat is not designated for experimental populations (USFWS 2021).

The current range of California condors in the wild includes the reintroduction sites in Baja California, California's central coast, southern California, and near the Grand Canyon in Arizona. While currently reintroduced in mountainous areas, they use a variety of other habitats, including grasslands, forests, shorelines, and rural environments. They typically use forested and mountainous areas for roosting, such as large snags, rocky outcrops, or cliffs. Forests and mountains may also be used for nesting, where caves, steep rocky cliffs, and cavities of old growth conifers, such as coastal redwoods and giant sequoias, are used. Condors used grasslands, shorelines, foothills, and savannas for foraging. They are carrion eaters, and therefore forage for carcasses of animals, which may include deer and cows (USFWS 2024b). While there is potential foraging habitat within the project area, it is not mountainous or forested and thus is not suitable roosting or nesting habitat for the California condor. Therefore, the project area has minimal to no suitable habitat for this species.

Gray Wolf

The gray wolf (*Canis lupus*) is not federally protected in the project area in eastern Oregon and is not state listed in Oregon; however, the gray wolf is a federally listed endangered species under the ESA in western Oregon west of highways 395, 78, and 95 (ODFW 2024). The gray wolf is a carnivorous, opportunistic feeder, whose primary prey are elk, deer, and moose, and smaller animals such as rabbits, beavers, coyotes, and fish when those prey are not available (ODFW 2023a). Wolves are highly social and typically live in packs of 5 to 10 members. Packs establish territories, usually approximately 200 to 400 square miles in size, and defend these territories from other wolves. The Ukiah wolf pack in the Columbia Plateau is the closest pack to the project area, located approximately 11 miles south of the transmission line ROW near Pilot Rock, Oregon. According to the annual population survey completed in December 2022, the pack had a minimum count of six wolves and has been considered a successful breeding pair since 2002 (ODFW 2023b). The total population count for 2022 in Oregon was at least 178 known wolves in 21 known packs, including at least 17 breeding pairs (ODFW 2023a). Although denning is not known to occur in the project area, transient individuals, including those associated with the Ukiah pack, may enter the project area.

State-Listed Species

Washington ground squirrels (WAGS; *Urocitellus washingtoni*) are an Oregon state-listed endangered species that may occur in the project area (ODFW 2024). WAGS occur only in the Columbia Basin region

of eastern Washington and north-central Oregon. WAGS are found in open, shrub-steppe or grassland habitats with low-growing vegetation. Much of the project area consists of agriculture and rangelands of degraded shrub-step habitat and grasslands. The presence and dominance of tall grasses and shrub-steppe shrub species were found along most of the project area, which is heavily vegetated by invasive weed species (e.g., cheatgrass). These conditions degrade and alter natural habitat, making it unsuitable for WAGS. Minimal, large, flat, open habitat was found. Sandy and rocky soil conditions were also observed, which are not optimal for supporting wildlife burrows. There were a few areas of potentially suitable habitat scattered between structures 17/4 and 17/7, 18/7 and 20/9, 21/6 and 22/8, and 23/6 and 28/1. However, these areas were considered marginally suitable habitat, as they were often weedy and/or grazed. Near tower 22/8, several small, active burrows were recorded. They were revisited and determined not to be used by WAGS, as common burrow identifiers (scat and tail-drag) were not present. Overall, little suitable habitat was found within or near the project corridor and no potential WAGS burrows were observed during field surveys.

Burrowing owls have the potential to occur in the project area and are an Oregon state-listed sensitive species (ODFW 2024) and a Conservation Strategy species in the Columbia Plateau ecoregion (Oregon Conservation Strategy 2016). They live in burrows in flat open habitat with sparse vegetation, short grass, and bare soil, such as prairies, grasslands, desert, and sagebrush steppe environments. One pair of burrowing owls were observed during field surveys.

2.6.2 Environmental Consequences

Degradation of wildlife habitat would occur temporarily where vegetation is removed and if invasive plants establish themselves in areas disturbed by construction activities. Non-native plants provide poor forage for grazing animals, and impenetrable thickets of weed species can impede wildlife movement. As described in the Section 2.3, vegetation in the project corridor that may provide wildlife habitat has been extensively modified and previously disturbed. Impacts on important wildlife habitats, such as wetlands and riparian corridors, would be largely avoided by the project, but some vegetation removal in riparian areas next to access roads would result in temporary impacts during construction at the culvert crossings. It is anticipated that impact areas for these crossings would be confined to 25 feet upstream and downstream of the culverts. These impacts would be predominantly within previously disturbed areas in the ROW. Therefore, impacts on riparian habitats and wetland species would be localized and **low**.

Impacts from vegetation clearing or disturbance could cause incidental injury or mortality to terrestrial wildlife species or temporarily displace them from habitat areas. Habitat impacts would be temporary and relatively insignificant compared to the current land uses in the habitat adjacent to the transmission ROW and access roads. Displacement or disturbance to terrestrial wildlife species and birds from noise and construction activities would vary depending on the proximity and duration of the noise and activity. Most wildlife species sensitive to human disturbance and noise, including birds and mammals, are highly mobile and would avoid temporary construction disturbance.

There are many common existing sources of ambient and recurring noise along the project corridor from agricultural operations, as well as from traffic on roads, highways, and railroads. Increased noise from heavy equipment during construction, helicopters during stringing operations, and the transportation of equipment to and between sites would temporarily exceed typical ambient noise levels, potentially

displacing wildlife. Project construction activities would be conducted during daylight hours, and noise disturbance would vary in duration and be temporary. Nighttime work might be required to construct the crossing over I-84 in mile 14. Nighttime work would last for 3 nights and would be conducted from 8pm to 6am. Typical light plants would be used to perform work, and lights would be towed by vehicles and removed from site daily. Nighttime work would generate noise and lighting impacts, which could result in behavior modification in wildlife species.

Bald eagles are common along portions of the project corridor, concentrated within the areas along the Columbia River and associated islands. These bald eagle populations are active in this area year-round, including during the nesting season, as they typically inhabit and nest in mature forested areas adjacent to large bodies of water. One incidental observation of a single golden eagle occurred on the eastern portion of the project corridor, and one bald eagle nest was observed near structure 30/6 during habitat surveys. Additionally, two incidental observations of bald eagles flying were observed near structure 29/3.

BPA would avoid construction activities and any danger tree removal within 0.5 miles of an active bald eagle nest during the breeding season (Section 1.5). The Proposed Action includes removal of two danger trees, but no other clearing of potential nesting habitat such as snags or large trees (see Section 1.5). Noise and activity levels would be temporary during construction, and wildlife would be expected to return after construction is complete. Implementing timing restrictions for construction activities in proximity of nests, avoiding vegetation clearing during bird nesting season, restoring work areas, and other minimization measures described in Sections 1.2.3 and 1.5 would minimize and avoid impacts to wildlife. Therefore, the impacts to terrestrial wildlife species, birds, and wildlife from construction activities, vegetation disturbance, and noise would be temporary and **low**.

After construction on the project is complete, impacts on terrestrial wildlife species would no longer occur, and the area would return to pre-project conditions. Bird collisions with conductors and ground wires could occur; however, the conductor spacing on a 230-kV transmission line is wide enough that electrocution of raptors and large birds is rare. Bird-wire collisions are more likely in areas where the line crosses rivers or ridges that can be flyways for birds and other high bird-use areas. Bird flight diverters would be added on the OHGW in these locations, along with bird flight diverters on both the conductors and OHGW on the spans in areas with the highest expected potential for avian collisions. Since the existing line does not have bird diverters, placement of the diverters would help reduce the current potential for avian collisions—a beneficial impact.

ESA-Listed Species

Yellow-billed Cuckoo

Breeding yellow-billed cuckoos have not been confirmed for many decades in Oregon, Washington, or British Columbia, no suitable riparian habitat for yellow-billed cuckoo would be removed as part of the project, and yellow-billed cuckoos are extremely rare visitors to the region. BPA determined during Section 7 Consultation that the project may affect but is not likely to adversely affect the yellow-billed cuckoo due to noise and rotor wash from helicopter use during construction, in the unlikely event that any are present in the project area during construction. Overall, there would be **low to no** impact to the species.

Monarch Butterfly

Potential project impacts to milkweed include clearing or crushing individual plants. Removal or destruction of milkweed could have potential negative impacts on habitat for monarch butterfly use within the project area. Therefore, areas where milkweed is present in the ROW corridor and near work areas would be noted in construction documents to avoid impacts to native milkweed species and potential monarch butterfly habitat (Section 1.5). As milkweed would be avoided, there would be **no** impacts to potential habitat for the proposed ESA threatened monarch butterfly and **no** potential impacts to its habitat or its proposed designated critical habitat.

Suckley's Cuckoo Bumble Bee

Suckley's cuckoo bumble bee can be found in a variety of habitats, so the possibility exists that individual bees and suitable habitat for foraging, nesting sites for host colonies, and overwintering habitat could potentially occur in the project area. However, due to a lack of recent detections within the region, coupled with the fact that the Suckley's cuckoo bumble bee has not been observed in the United States since 2016, potential use of the area is highly unlikely. Based on lack of suitable habitat and no individuals observed during surveys, there would be **no** impacts to the Suckley's cuckoo bumble bee.

California Condor

No California condor individuals are known to occur in the project area, and none were observed during surveys for the project. The distance from known populations combined with minimal roosting and nesting habitat makes it unlikely that the California condor is present in the project area. BPA determined during Section 7 Consultation that the project may affect but is not likely to adversely affect the California condor due to noise and rotor wash from helicopter use during construction, in the unlikely event that any are present in the project area during construction. Based on lack of suitable habitat and no individuals observed during surveys, there would be **low to no** potential impact to the California condor.

State-Listed Species

All construction work would occur in the cleared transmission line ROW and along existing roads to avoid impacts to sensitive habitats, including riparian and wetlands, to the extent feasible.

WAGS surveys were performed for the project and minimal, large, flat, open habitat was found. The transmission line between structures 16/4 and 34/3 was targeted for WAGS surveys, as it had the highest potential for suitable habitat, due to distance from industrial settings and the presence of shrub and grasslands. However, no suitable habitat was found. Some sections of the line had tall, weedy vegetation that precludes WAGS from occupying sites as they require short-stature vegetation to communicate with other individuals and detect predators. Areas where vegetation was shorter were typically dominated by agricultural activities that precluded the presence of WAGS by compacting soil that prevents the formation of burrows. This segment of the line also had sandy and rocky soil conditions, which are not optimal for supporting wildlife burrows. Based on lack of suitable habitat and no burrows or WAGS identified during species-specific surveys in the project areas where WAGs may occur, impacts to WAGS would be **none to low**.

Gray wolf denning is not known to occur in the project area; however, transient wolf individuals, including those associated with the Ukiah pack, could enter the project area during implementation of

the Proposed Action. The existing transmission line ROW and surrounding areas are generally disturbed with active or prior transmission line maintenance operations and rural residential and agriculture activities; therefore, the area provides only marginal habitat for gray wolves, and the potential impacts to the gray wolf would be **none to low**.

2.7 Cultural Resources

2.7.1 Affected Environment

A cultural resources inventory consisting of background research and field surveys for both archaeological and historic built-environment resources was conducted within the project's Area of Potential Effects (APE), which comprised the project area (Payne *et al.* 2025). The archaeological field survey was completed in all areas of the APE except for the portion of the APE that is within off-reservation tribal lands held in trust for the CTUIR. This portion comprises four access roads that will be surveyed following additional consultation with the CTUIR.

Based on the results of the background research in the Oregon Archaeological Records Remote Access (OARRA), nine archaeological resources were previously recorded within the APE, including one precontact and eight historic archaeological sites. Eight of the nine previously recorded archaeological sites were observed during field survey, and one site (O-BK-UM-3) was not observed because it was likely destroyed by agricultural activity. Of the eight previously recorded archaeological sites that were observed, two historic sites are recommended eligible for the National Register of Historic Places (NRHP),[3] four historic sites are recommended not eligible for the NRHP, and one precontact site is considered unevaluated for NRHP eligibility. Lastly, one historic site was previously determined not eligible for the NRHP by SHPO, and BPA did not recommend any changes to that eligibility determination. The archaeological field survey newly documented an additional nine archaeological sites, including six historic sites and three sites that may be either precontact or historic in age. Of these newly documented sites, the six historic sites were recommended not eligible for the NRHP, and the three precontact/historic sites are considered unevaluated for the NRHP.

In-person research was conducted at the CTUIR Cultural Resource Protection Program office to identify previously recorded Historic Properties of Cultural and Religious Significance to Indian Tribes (HPRCSIT) and Traditional Cultural Places (TCPs). Cultural resources specialists reviewed sensitive cultural information literature provided by the CTUIR. One HPRCSIT and five TCPs were identified within approximately 1 mile (1.6 km) of the APE or intersecting the APE. The HPRCSIT consists of 15 traditional use areas, 10 of which are within 1 mile of the APE or intersect the APE. Additionally, there are seven unnamed, traditional trails that cross the APE at various locations.

Six historic built-environment resources were previously documented in the APE, all of which were previously determined eligible for listing in the NRHP (Oregon State Parks 2024). The historic built-environment survey was completed within the APE, during which a total of 46 historic-age built-environment resources were identified (i.e., the 6 documented in the Oregon Historic Sites Database

[3] NRHP-recommended eligible sites 35UM00398 (Stanfield Branch Furnish Ditch) and 35UM00399 (Furnish Ditch) are still in use and were documented as historic built-environment resources.

[OHSD] and 40 additional resources). Twenty-nine of those resources were determined eligible for listing in the NRHP by BPA, and 17 were determined not eligible by BPA.

The NRHP-eligible BPA historic properties within the Project APE include the McNary Substation Historic District (1954), the McNary-Roundup No. 1 Transmission Line (1952), and the Roundup Substation Historic District (1954).

Non-BPA historic properties recommended NRHP-eligible include the Oregon Trail Corral Springs Segment, two linear railroad segments, and eight linear irrigation resources that contribute to the Umatilla Project Linear District. Three additional historic properties are assumed NRHP-eligible: the Cunningham Sheep Company Ranch, the Taylor Lane Ranch, and a segment of the Stage Gulch Drain.

2.7.2 Environmental Consequences

BPA determined that all eligible and unevaluated resources would be avoided by project effects. Sites recommended not eligible were not assessed for project effects.

The Proposed Action would avoid the two archaeological sites recommended eligible for the NRHP (35UM00398 and 35UM00399), both of which are in use and were also documented as historic built-environment resources (Stanfield Branch Furnish Ditch and Furnish Ditch, respectively). The Proposed Action would also avoid four unevaluated archaeological sites (35UM00560, Site-A-2, Site-B-3, and Site-B-4) within the APE. As such, the Proposed Action would have no adverse effects on these NRHP-eligible or unevaluated sites.

The changes in the viewshed from the Proposed Action would not result in adverse effects on the TCPs and HPRCSITs.

Rebuilding the McNary-Roundup No. 1 Transmission Line with in-kind material, using existing BPA designs, would not adversely affect the characteristics that make the transmission line eligible for listing in the NRHP. In addition, the three other BPA transmission lines within the APE for the Proposed Action would not be physically affected and would receive only temporary, less-than-adverse effects due to access road use and improvements in their vicinity. Therefore, it is anticipated that the Proposed Action would have no adverse effect on any of the BPA transmission lines located in the APE.

To support line work, the Proposed Action would also include minor additions and modifications to equipment at the McNary and Roundup Substations; however, these alterations would include in-kind replacement of less than 40 percent of the switchyard equipment. Therefore, the Proposed Action would have no adverse effect on any of the BPA substations located in the APE.

The project design was revised based on field surveys to avoid impacts to the Oregon Trail Corral Springs Segment, including the removal of roadway improvements and structure and guy wire work areas where they would overlap with the eligible trail segment. Effects to the resource stemming from project-related construction activities were determined to be short term, minor, and not creating adverse visual changes to the setting. Therefore, the Proposed Action would have no adverse effect on the Oregon Trail Corral Springs Segment located in the APE.

The project would not physically impact any of the additional eligible linear resources located within the APE (including the two railroad segments, eight linear resources associated with the Umatilla project, and the Stage Gulch Drain) or the two additional assumed-eligible properties (Cunningham Sheep Company and Taylor Lane Ranches), and effects to those resources stemming from project-related construction activities were determined to be short-term, minor, and not creating adverse visual changes to the setting. Therefore, the Proposed Action would have no adverse effect on 13 eligible and assumed-eligible non-BPA resources that overlap with the APE.

Construction activities could result in disturbance to unknown cultural resources through accidental discovery, depending on the extent of the resources and their proximity to structures and access roads. Use of minimization measures (Section 1.5) would ensure that any previously undiscovered resources found would be managed properly and would minimize any inadvertent disturbance or destruction of cultural resources from the Proposed Action. Overall, the proposed project is anticipated to have **no**-to-**low** effect on cultural resources.

2.8 Noise, Public Health, and Safety

2.8.1 Affected Environment

Transmission lines provide electricity for heating, lighting, and other services essential for public health and safety, but can also pose a risk to public health and safety. Contact with transmission lines or any electrical line can kill or seriously injure people and damage or destroy equipment. This section describes public health and safety concerns such as noise, hazardous materials, and electric and magnetic fields (EMFs) related to transmission lines or construction activities associated with the Proposed Action.

Noise

Existing noise levels in the project area are characteristic of rural lands with limited areas influenced by urban activities near the towns of Hermiston, Umatilla, and Pendleton, and localized areas where I-84, state highways, and/or local roads cross the project area. The predominant noise sources in the project area are agricultural equipment and vehicular traffic, with periodic noise from transmission line maintenance. Much of the project area is in rural, agricultural, or low-population areas characterized by low ambient noise levels.

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 can hear. Typical A-weighted sound levels from various sources are presented in Table 2-7.

Table 2-7. Typical A-weighted Sound Levels

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
Soft whisper (at 15 feet)	30

Source: USEPA 1971, 1974.

The main sources of noise associated with the transmission line include maintenance of the equipment, transmission line corona, and the hum generated by electrical transformers at substations. Transmission line corona-generated noise occurs when atmospheric moisture causes the partial breakdown of the insulating properties around transmission conductors. Corona-generated noise is typically noticeable from transmission lines operating at voltages of 230 kV or greater, like the project line, and is loudest during wet weather conditions, such as during fog or rain events.

Public Health and Safety

Public health and safety resources for communities and individuals in the project area are provided by state, city, and county agencies. Emergency 911 calls and dispatch for fire districts, police, and emergency medical services are coordinated by local law enforcement and the appropriate city or county agency is dispatched. Existing health and safety concerns in the project area include the aging, deteriorating condition of the transmission line that leaves the area power distribution system vulnerable to more frequent power outages and loss of electrical service from extreme weather events, high winds, birds or wildlife, wildfires, or equipment failure. Natural hazards such as wildfires, wildlife, winter weather, extreme heat, flooding, landslides, and earthquakes pose a threat to public health and safety in the project area, in general. The Hermiston Municipal Airport is the nearest airport to the project transmission line.

Hazardous materials, if present in the project area, could be disturbed during construction. Government and Oregon state environmental databases that record the handling, storage, and release of hazardous materials to the environment were reviewed for existing conditions in the project area (OR DEQ 2023c, NDa, NDb, NDc; USEPA 2024a, 2025a, 2025b, NDa, NDb). No areas of hazardous material contamination within the project area were identified during the reviews of U.S. Environmental Protection Agency (USEPA) and OR DEQ databases reviews along the project line. No areas of obvious hazardous material contamination were observed during project planning or identified during public outreach. Both existing and any new wood poles used for transmission line structures are treated with chemical preservatives (e.g., creosote-treated wood poles).

Transmission and power lines produce an EMF. Voltage, the force that drives the current, is the source of the electric field. Current, the flow of electric charge in a wire, produces the magnetic (or electromagnetic) field. EMFs are found around any electrical wiring, including household wiring or

electrical appliances, devices, and equipment. Electric fields are measured in units of volts per meter (V/m) or kilovolts per meter (kV/m). Magnetic fields are measured in units of gauss (G) or milligauss (mG), which are thousandths of a gauss.

Throughout a home, the electric field strength from wiring and appliances is usually less than 0.01 kV/m; however, fields of 0.1 kV/m and higher can be found very close to electrical appliances. Average magnetic field strength in most homes (away from electrical appliances and home wiring) is typically less than 2 mG. Fields of tens or hundreds of mG are present very close to appliances carrying high current. The combined EMF strengths (in mG) from typical household sources are shown in Table 2-8.

Table 2-8. Typical Household Sources of EMF

Household Source	EMF Strength (mG) at 6 Inches from Source	EMF Strength (mG) at 2 Feet from Source
Can opener	500–1,500	3–30
Vacuum cleaner	100–700	4–50
Microwave oven	100–300	1–30
Drill	100–200	3–6
Blender	30–100	2–3
Electric range	20–200	2–9
Fluorescent lights	20–100	2–8
Computer	7–20	1–3
Washing machine	4–100	1-6
Coffee maker	4–10	—
Television	NA	7–20
Hairdryer	1–700	0.1–10

Source: USEPA 1992.
Notes: Applies to plug-in devices. A dash (—) indicates that the measurement at this distance could not be distinguished from background measurements taken before the appliance was turned on. NA indicates no data at this measurement distance.

The strength of EMF produced from an overhead transmission line depends on the design of the line, operating voltage, and the distance from the line; both electric and magnetic field strength decreases rapidly with distance. However, unlike electric fields, magnetic fields from transmission lines are not reduced in strength by trees and building material. Transmission lines and distribution lines (the lines feeding a neighborhood or home) can be a source of magnetic field exposure throughout a home located close to the line.

There are no federal standards for occupational or residential exposure to EMF, including EMF from transmission lines. BPA designs transmission lines to not exceed 9 kV/m maximum electric field within the transmission line ROW and 5 kV/m maximum electric field at the edge of a transmission line ROW. For context, the Oregon Energy Facility Siting Council (EFSC) has a similar standard and requires that transmission lines subject to its jurisdiction be designed and operated with electric fields that do not exceed 9 kV/m at roughly 3 feet above ground surface in areas accessible to the public (Oregon

Administrative Rule 345-024-0090). The existing transmission line operates in accordance with these field levels. BPA does not have a design criterion for the magnetic fields from transmission lines, and Oregon EFSC similarly has no standards. The magnetic field is generated by the flow of electrical current, so its strength is proportional to the electric field, in general (USEPA 2024b).

Decades of scientific studies and research are inconclusive whether exposure to EMF can affect human health. There is no conclusive evidence that EMF exposures have direct health effects, such as adult cancer, neurodegenerative diseases (such as Alzheimer's or Lou Gehrig's disease), or adverse effects on reproduction, pregnancy, or growth and development of an embryo. Uncertainty remains for a possible association with risk for childhood leukemia and exposure to EMF; however, the research is inconclusive for a scientific explanation that links EMF with risk for childhood leukemia (NIEHS 2002).

2.8.2 Environmental Consequences

Noise

Construction activities would result in short-term and intermittently higher noise levels as construction progresses through the project area. Noise would result from construction equipment and vehicles used for road work, culvert replacement, vegetation removal, and structure removal and replacement. Helicopters would be used for various construction activities, including stringing a sock line through the structures, installing marker balls, and installing bird diverters. In areas of steep terrain inaccessible to construction vehicles or near sensitive resources, helicopters would also be used for removal of existing structures. Helicopter noise varies depending on the type of aircraft used. A heavy-duty helicopter will produce noise as high as 117 dB at 50 feet from the source, while a light-duty helicopter will produce noise similar to that of a jackhammer (95 dB at 50 feet). Where helicopter use is needed, the flight paths would be limited to areas within and near the BPA ROW as much as practicable to minimize the extent of noise disturbance. Table 2-9 contains examples of typical construction vehicles and equipment used for the Proposed Action and the maximum noise levels, in dBA, that they might generate.

Table 2-9. Typical Construction Noise Levels

Type of Equipment	Maximum Noise Level (dBA) at 50 feet
Road grader	80–92
Bulldozer	80–92
Heavy truck	78–90
Backhoe	72–92
Pneumatic tools	82–87
Concrete pump	81–83
Crane	85–88

Source: USEPA 1971.

Construction noise may be bothersome to those in the immediate vicinity of the Proposed Action. Construction noise levels at 50 feet from a construction site would range from 72 to 92 dBA with higher temporary-intermittent levels associated with a helicopter used to string a sock line through the structures. Noise produced by construction equipment would decrease with distance at a rate of

about 6 dBA per doubling of distance from the site. Based on that assumed attenuation rate, noise-sensitive properties within 400 feet of construction sites could be exposed to daytime noise levels of 74 dBA (less than a truck at 50 feet). Noise-sensitive properties within 800 feet of construction sites could be exposed to daytime noise levels of 68 dBA (less than a gas lawnmower at 100 feet), which would have a **moderate** impact. Noise levels would be further attenuated due to the areas of open space within the project area.

Use of helicopters for stringing operations and removal of existing poles would result in noise levels that may exceed 100 dBA for a brief time. Helicopter noise levels are often highest at takeoff when noise could be up to 108 dBA. The Federal Aviation Administration describes aircraft impacts based on the effective perceived noise level (EPNL) in units of effective perceived noise in decibels (EPNdB), which is a single-number evaluator of the subjective effects of airplane noise on human beings (14 CFR 36-Appendix A). The Federal Aviation Administration has established noise limits for regulating aircraft based on EPNdB, and helicopters typically operate between 80 to 90 EPNdb and do not exceed 110 EPNdb at takeoff (14 CFR 36-Appendix H). Noise associated with helicopter use would depend on proximity to the activity and would be temporary and intermittent. It would generally take less than 10 minutes to string the sock line through each structure, and it is estimated that helicopters would not be in any given line mile for more than 3 hours. Other construction activities at any given location are also expected to be relatively short in duration (approximately 1 to 2 days). In addition, implementation of the minimization measures described in Section 1.5 would reduce noise impacts, such as having sound-control devices on construction equipment with gasoline or diesel engines and limiting construction noise to daylight hours (7:00 a.m. to 5:00 p.m.). Although temporary, noise impacts to nearby properties from construction equipment and helicopter use at and between structures could be **low to moderate**.

Construction noise associated with new, reconstructed, improved, and temporary access roads would be temporary. Like construction noise for structure replacements, noise from access road work would be similar to noise from machinery used for agricultural purposes, and nearby residents regularly experience machinery noises from agricultural activities. Similarly, noise from vehicles and increased traffic on project access roads would temporarily contribute to the frequency of traffic on local roads and highways but is not expected to result in a substantial increase in average traffic noise levels. Noise impacts to nearby properties from construction equipment on access roads would be **low to moderate**.

Transmission lines generate an audible corona-generated noise during operation. The audible noise produced by the existing transmission line would not change significantly from the Proposed Action. Table 2-10 provides the calculated corona noise levels (in dBA) experienced during wet atmospheric conditions, when corona effects are highest, to compare the existing line with the Proposed Action on two separate ROW sections with different conditions.

Table 2-10. Transmission Line ROW Audible Noise (dBA, wet conditions)

Existing or Proposed Action	ROW and Line Details	Northeast Edge of ROW	Maximum in ROW	Southwest Edge of ROW
ROW Section 1: Mile 1 to 14				
Existing Line	250-ft-wide ROW Shared ROW with BPA 500-kV line (to north)	63.3 dBA	64.1 dBA	57.2 dBA
Proposed Action	250-ft-wide shared ROW with BPA 500-kV line	63.3 dBA (no change)	64.1 dBA (no change)	57.2 dBA (no change)
ROW Section 2: Mile 14 to 40				
Existing Line	250-ft-wide ROW 230-kV project line only	40.5 dBA	45.4 dBA	40.5 dBA
Proposed Action	250-ft-wide ROW 230-kV project line only	40.5 dBA (no change)	45.1 dBA	40.5 dBA (no change)

Note: Values developed from BPA models using operational data for the existing line and the design data for the proposed project.

On the first section of ROW, the project 230-kV line is co-located in a shared 250-foot-wide ROW with another BPA transmission line operating at 500 kV. The 500-kV transmission line has a louder audible noise from the corona, creating higher combined audible noise levels in ROW and at the edge of ROW. The 230-kV project line is located on the southwest edge of the ROW, where the audible noise is less than the northeast edge of ROW, closest to the 500-kV line. On the second section of ROW, the design of the Proposed Action would result in a calculated reduction in the maximum level of transmission line noise in ROW, with no change to audible noise from corona on either edge of the 250-foot-wide ROW. Under the Proposed Action, corona noise from the 230-kV transmission line would not increase and may decrease slightly on sections of the project line ROW; therefore, impacts would be **none to low**.

Public Health and Safety

BPA would dispose of creosote-treated wood poles in accordance with federal and state laws, so impacts would be **low**. Unknown hazardous materials could potentially be disturbed during construction of the Proposed Action, resulting in an unexpected release to the environment and likely a temporary impact to public health and safety of nearby residents. Construction activities associated with the Proposed Action could involve the use of small amounts of solvents, pesticides, paint products, motor and lubricating oils, and cleaners, which could be released into the environment. If any of these materials are spilled, BPA would immediately contain and clean up the spill and dispose of all regulated materials in accordance with federal and state laws. The potential impacts from hazardous materials to soil or groundwater during construction would be low, including implementation of minimization measures described in Section 1.5.

During nighttime work related to transmission line crossing (if determined necessary), temporary public safety measures would be implemented to protect motorists, pedestrians, and workers in accordance with ODOT and local (city/county) permitting. These measures include approved traffic

control plans, certified flaggers as required, advance warning and reflective signage, cones, and barricades to clearly define work zones and detours, as well as temporary lighting to ensure adequate visibility while minimizing glare. Nearby residents and businesses would receive advance notification of nighttime activities, including expected schedule (hours and duration), and traffic control areas would be monitored and adjusted as necessary throughout the night.

The primary parameters that affect the strength of EMF from a transmission line are the operating voltage (e.g., 230 kV), current loading, line configuration, and line routing. The Proposed Action would not appreciably change any of these parameters, as the rebuilt transmission line would continue to operate at 230 kV. The strength of electric fields generated by the project transmission line were calculated based on the existing line design and the design details for the Proposed Action (Table 2-11).

Table 2-11. Transmission Line ROW Electric Field Values (kV/m)

Existing or Proposed Action	ROW Width and Line Details	Northeast Edge of ROW	Maximum In ROW	Southwest Edge of ROW
ROW Section 1: Mile 1 to 14				
Existing Line (Before)	250-ft-wide ROW Shared ROW with BPA 500-kV line (to north)	1.97 kV/m	3.51 kV/m	0.13 kV/m
Proposed Action (After)	250-ft-wide shared ROW with BPA 500-kV line	1.97 kV/m (no change)	3.53 kV/m	0.13 kV/m (no change)
ROW Section 2: Mile 14 to 40				
Existing Line (Before)	250-ft-wide ROW 230-kV project line only	0.20 kV/m	1.05 kV/m	0.20 kV/m
Proposed Action (After)	250-ft-wide ROW 230-kV project line only	0.20 kV/m (no change)	0.88 kV/m	0.20 kV/m (no change)

As shown in Table 2-11, the Proposed Action would result in little or no measurable change to the average strength of electric fields either in ROW or at the edge of ROW on either side. Based on project design and previous BPA line models, the Proposed Action would not generate a measurable change in the corresponding magnetic field values on any sections of the project ROW.

A section of the project transmission line corridor runs east-northeast of the Hermiston Municipal Airport, about 0.25 mile at the closest point to the edge of airport property. The Proposed Action would not change the line ROW location or proximity to the airport, but the rebuilt line would have increased wood pole structure heights, added OHGW, and new marker balls that could impact airport operations. BPA has provided the required notification with project design and construction details to the Federal Aviation Administration for review and approval of alterations to the line in proximity to the Hermiston Municipal Airport. BPA would comply with any requirements for line design, structure heights, marking requirements, and construction activities to avoid impacts to the airport.

Insignificant changes to average or maximum EMF in different sections or areas along the project ROW could result from minor changes to structure heights, locations, and components from the Proposed Action. The Proposed Action would not measurably change EMF compared to the existing line and would not result in a significant change to the EMF environment along the project ROW. BPA is coordinating with the Federal Aviation Administration for the Proposed Action design and construction activities to avoid impacts to current or future airport operations, therefore, impacts to public safety would be **none to low**.

High-voltage power lines like the 230-kV project line can cause radio and television interference from two basic sources: conductor corona activity and spark-discharge activity on connecting hardware. Conductor corona activity is primarily a function of the operating line voltage, while spark-discharge activity on connecting hardware is usually associated with the aging condition of hardware (e.g., over time, hardware connections can become loose and corroded causing small spark-gaps). However, BPA rarely receives public complaints of radio and television interference from BPA transmission lines operating at this voltage.

The operating voltage of the Proposed Action would be the same as the existing line. Additionally, the Proposed Action would add new connecting hardware that would reduce any risk associated with aging hardware spark-discharge activity. Thus, the Proposed Action would either not change or possibly reduce the potential for radio and television interference along the transmission line, so the impact would be **none to low**; nevertheless, BPA would investigate any radio or television interference complaint. If BPA facilities are determined to be the cause of the interference, BPA would take corrective action to eliminate the interference.

3 Environmental Consultation, Review, and Permit Requirements

Several federal and state statutes, implementing regulations, Executive Orders, other consultations, reviews, and permit requirements are potentially applicable to this project (Table 3-1). In Table 3-1, similar resources (e.g., vegetation and wildlife) have been combined when statutes or regulations overlap multiple resource areas.

Table 3-1. Applicable Statutory, Regulatory, and Other Requirements

Requirement	Applicability
All Resources	
NEPA (42 U.S.C. § 4321 et seq.)	BPA has prepared a Categorical Exclusion pursuant to regulations implementing NEPA, which requires federal agencies to assess, consider, and disclose the impacts that their actions may have on the environment before major federal actions are taken.
Council on Environmental Quality Guidance for Federal Departments and Agencies on Indigenous Knowledge (November 30, 2022)	Consistent with the Council on Environmental Quality guidance on November 30, 2022, Guidance for Federal Departments and Agencies on Indigenous Knowledge, BPA has engaged affected communities, tribes, and Indigenous peoples, including the Confederated Tribes of the Umatilla Indian Reservation to inform the assessment of environmental effects.
Vegetation, Fish, and Wildlife	
ESA (16 U.S.C. § 1531 et seq.)	Project planning surveys for fish and wildlife habitat were completed to document the potential for ESA-listed species, designated critical habitat, or potential habitats within the project area. BPA submitted a biological assessment to USFWS with a determination that the project would not likely adversely affect ESA-listed and candidate species including yellow-billed cuckoo and monarch butterfly. USFWS responded with a Letter of Concurrence on September 17, 2025. BPA received comments from USFWS on the proposed project that were incorporated into the Proposed Action BMPs, including seasonal nesting timing restrictions. Project actions would be within the scope of BPA's existing programmatic consultation, *National Oceanic Atmospheric Administration (NOAA) National Marine Fisheries Service's (NMFS) 2016 Programmatic Biological Opinion for Standard Local Operating Procedures for Endangered Species for BPA's transmission line and access road actions in Oregon, Washington, and Idaho* (SLOPES PBO) to address potential effects on listed anadromous species. The BPA SLOPES PBO provides take coverage for ESA-listed anadromous fish species for most BPA maintenance activities, including transmission line rebuild projects.

Requirement	Applicability
Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) of 1976 (16 U.S.C. 1801 et seq.)	Pacific salmon essential fish habitat (EFH) is administered under the amended Magnuson-Stevens Act; EFH for the Pacific salmon fishery, including Chinook salmon and coho salmon, may be found in tributaries crossed by the project corridor. BPA consulted with NMFS on effects to EFH under the Magnuson-Stevens Act as part of the programmatic ESA consultation. BPA's SLOPES PBO contains the analysis of the action's effects on EFH, and the project would be consistent with that analysis.
Bald and Golden Eagle Protection Act (Eagle Act) of 1940 (16 U.S.C. § 668–668d)	Bald eagles may be present along portions of the project corridor including near the Columbia River and Umatilla River. One bald eagle nest was observed near structure 30/6 during habitat surveys. There are no known occurrences of golden eagles in the project corridor. If a nest is identified in proximity to the project corridor, BPA would avoid construction activities within 0.5 mile of an active bald eagle nest during the breeding season and avoid snag and large tree removal to the extent possible (Section 1.5).
Migratory Bird Treaty Act of 1918 (16 U.S.C. § 703–712) Responsibilities to Federal Agencies to Protect Migratory Birds (Executive Order 13186)	Bird species present in the project corridor and some undoubtedly nest in the general vicinity or the corridor. Potential impacts on nesting birds are described in Section 2.6 of this resource report. Minimization measures, such as using seasonal timing restrictions during the breeding season and removing inactive bird nests at an approved time prior to construction (Section 1.5) would minimize impacts to birds who may be in the project area. Bird diverters would be installed on conductors and OHGW in high bird-use areas. BPA received a comment from USFWS to minimize vegetation clearing during nesting season which has been added to the BMPs (Section 1.5).
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 received comments from ODFW and USFWS and has incorporated the suggested surveys, minimization measures and BMPs to avoid and minimize potential impacts on fish and wildlife resources. ODFW suggested performing pre-construction WAGS surveys in the project areas where WAGS may occur and performing raptor nest surveys within 0.5 mile of the project corridor, which were completed. Project-related impacts on WAGS are discussed in Section 2.6.

Requirement	Applicability
Waters, Wetlands, and Floodplain Protection	
Clean Water Act (33 U.S.C. § 1251 et seq.) Oregon's Removal-Fill Law (ORS 196.795-990) Floodplain/Wetlands Environmental Review Requirements (10 CFR 1022.12) Floodplain Management Executive Order 11988 Protection of Wetlands Executive Order 11990	BPA would obtain the necessary permits for this project as regulated under Clean Water Act Sections 401, 402, 404, and 408, as needed. Potential impacts on wetlands, waters, and floodplains from the Proposed Action and minimization for these impacts are described in detail in Sections 2.4 and 0. Applicants receiving a Section 404 permit from the U.S. Army Corps of Engineers (USACE) are required to obtain a Section 401 water quality certification from the OR DEQ through a joint application process. BPA anticipates submitting the joint permit application (JPA) and receiving permits before the first construction season. Oregon's Removal-Fill Law, as administered by the Oregon Department of State Lands (OR DSL), requires a permit for removal of material or placement of fill in waters of the state, which includes waterways and wetlands. BPA is coordinating with OR DSL, as part of the JPA described in the preceding paragraph, to determine which project activities are subject to the Removal-Fill law. In the state of Oregon, an Erosion Sediment Control Plan (ESCP) in accordance with OR DEQ 1200-CA National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Construction Activities is required for this project. Prepare and submit a project-specific ESCP, following the 1200-CA template to BPA for OR DEQ approval. This permit authorizes BPA or BPA's contractor to construct, install, modify, or operate erosion and sediment control measures and stormwater treatment and control facilities, and to discharge stormwater to public waters in conformance with all the requirements, limitations, and conditions set forth in the NPDES permit.
Air Quality and Greenhouse Gases	
The Clean Air Act, as revised in 1990 (42 U.S.C. § 4701)	Air quality impacts of the Proposed Action would be low, localized, and temporary, as described in Table 2-2. The project would comply with any air quality standards set by USEPA's National Ambient Air Quality Standards.
Final Mandatory Reporting of Greenhouse Gases Rule (40 CFR 98)	GHG emissions would be low, localized, and temporary, as described in Table 2-2.

Requirement	Applicability
Cultural Resources	
Antiquities Act of 1906 (16 U.S.C. § 431–433) Historic Sites Act of 1935 (16 U.S.C. § 461–467) National Historic Preservation Act (NHPA), as amended, inclusive of Section 106 (54 U.S.C. § 306108 et seq.) Archaeological Data Preservation Act of 1974 (16 U.S.C. § 469–469-1) Archaeological Resources Protection Act of 1979, as amended (16 U.S.C. § 469(a)–(c) Native American Graves Protection and Repatriation Act (25 U.S.C. § 3001 et seq.) Indian Sacred Sites Executive Order 13007 American Indian Religious Freedom Act of 1978 (42 U.S.C. § 1996)	BPA identified and documented cultural resources in the project corridor and evaluated them for eligibility for listing in the NRHP. BPA initiated consultation with Oregon SHPO on August 4, 2025. On December 22, 2025, BPA determined that the project would have no adverse effect to historic resources. Oregon SHPO concurred with this determination on December 22, 2025. No other responses from consulting parties were received. If previously unidentified cultural resources that would be adversely affected by the Proposed Action are found during construction, BPA would follow the procedures set out in Section 1.5 and in compliance with applicable regulations.
Noise, Public Health, and Safety	
Noise Control Act of 1972 (42 U.S.C. § 4901 et seq.)	Noise disturbance would be short in duration and would primarily occur during daylight hours, as described in Section 2.8. Nighttime work might be required to construct the crossing over I-84 in mile 14. Nighttime work would last for 3 nights and would be conducted from 8 p.m. to 6 a.m.
Federal Aviation Administration (FAA), (14 CFR 77) Safe, Efficient Use and Preservation of the Navigable Airspace	BPA has submitted notice to the FAA for the proposed alterations to the existing transmission line in proximity to the Hermiston Municipal Airport for FAA review and approval. BPA would comply with FAA requirements for line design criteria, structure heights, marker balls, and construction.
Spill Prevention Control and Countermeasures Rule (40 CFR 112) Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. § 9601 et seq.) Resource Conservation and Recovery Act (RCRA) (42 U.S.C. § 6901 et seq.)	Small amounts of hazardous chemicals such as PCPs, fuels, motor and lubricating oils, and solvents could be released into the environment by the Proposed Action or used during construction work. Use of chemicals would be controlled via use of a spill prevention plan. Any waste material generated by the project would be disposed of according to state law and the RCRA at a landfill, recycling, or other acceptable location.
The Toxic Substances Control Act (15 U.S.C. § 2601 et seq.)	BPA adopted guidelines to ensure that polychlorinated biphenyls (PCBs) are not introduced into the environment. Equipment used for the Proposed Action would not contain PCBs. Any equipment removed that may have PCBs would be handled according to the disposal provisions of the Toxic Substances Control Act.
Federal Communications Commission (FCC)	There would be no interference with radio, television, or other reception as a result of the Proposed Action. BPA would comply with FCC requirements relating to radio and television interference from the Proposed Action if any such interference occurs.

Requirement	Applicability
State, County, or Local Plan Consistency	
Land Use Consistency Statements	BPA strives to meet or exceed the substantive standards and policies of state and local plans, codes, and programs to the maximum extent practicable. BPA has reviewed the project for consistency with local land use planning for Umatilla County and the cities of McNary, Hermiston, Stanfield, Umatilla, Echo and Pendleton. The project is not expected to have any impact or change to land use.

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