

Boyer–Tillamook Access Road Improvement Project

Finding of No Significant Impact

Bonneville Power Administration
DOE/EA-1941
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SUMMARY

Bonneville Power Administration (BPA) announces its environmental findings on the Boyer–Tillamook Access Road Improvement Project. The project would improve about 13.5 miles of access roads at specific sites along an 18-mile portion of the existing 115-kilovolt (kV) Boyer-Tillamook transmission line in Tillamook and Yamhill counties, Oregon.

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

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

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

PUBLIC AVAILABILITY

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

PROPOSED ACTION

Under the Proposed Action, BPA would improve about 13.5 miles of road that help access BPA's Boyer-Tillamook transmission line. Access road improvements would consist of placing gravel, regrading, installing water bars, widening, placing riprap, constructing retaining walls, cleaning and replacing culverts and bridges, removing trees, and installing gates. The improvements are needed because the existing access roads are in poor condition or washed out, making regular maintenance and emergency

repairs to the transmission line difficult, time consuming, and dangerous. In addition, improvements to access road stream crossings would facilitate fish passage.

Construction is expected to last from 2 to 4 months, although work may need to be spread out over two to three seasons due to work timing restrictions protecting fish and wildlife. Details of the Proposed Action are presented in Chapter 2 of the EA.

NO ACTION ALTERNATIVE

Under the No Action Alternative, access road improvements for the Boyer-Tillamook transmission line would not be implemented and portions of the Boyer-Tillamook transmission line would continue to be inaccessible during inclement weather and much of the winter. Maintenance and right-of-way vegetation management activities would continue on an as-needed basis, stormwater improvements associated with the Proposed Action would not be made, and culverts that are currently fish barriers would remain impassable to aquatic species.

The No Action Alternative would likely hinder BPA's ability to conduct emergency line repairs during outages because maintenance and repairs needed to access the line, particularly during heavy precipitation, would not have been completed. This delay could lead to longer outages, affecting BPA's customers and reducing system reliability. Leaving the access road in its current condition could affect worker safety because the narrow and rutted roads would not be repaired, hazardous trees would not be removed, some slide areas would not be cleared and others might be more prone to develop due to ongoing water runoff and associated erosion along and in the roadbed. In the case of an emergency, obtaining access to the transmission line could result in impacts to natural resources if conditions make access roads impassable and alternate routes must be found quickly and without typical protective measures. Selected culverts would continue to be barriers to fish passage, including ESA species, and hinder the opportunity to increase fish populations.

SIGNIFICANCE OF POTENTIAL IMPACTS OF THE PROPOSED ACTION

To determine whether the Proposed Action has the potential to cause significant environmental effects, the potential impacts of this alternative on human and natural resources was evaluated and presented in Chapter 3 of the EA. The potential impacts associated with the Proposed Action are summarized below. To evaluate potential impacts, four impact levels were used – high, moderate, low, and no impact. These impact levels are based on the considerations of context and intensity defined in Council of Environmental Quality regulations (40 Code of Federal Regulations 1508.27). High impacts could be considered significant impacts, if not mitigated, while moderate and low impacts are not. The Proposed Action would have no significant impacts.

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

LAND USE, RECREATION, AND TRANSPORTATION

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

- Road construction, road improvement, and tree clearing would be consistent with existing land management plans and complementary to ongoing land uses.
- Long-term changes in land use or land ownership would be minimal (affecting a total of about 3 acres) and dispersed along existing project roads.
- Recreation impacts would be limited to short-term construction noise disruptions to the Castle Rock campground and noise and construction equipment disruptions to private landowners' recreational uses.
- Traffic delays on State Route 22 and U.S. Highway 101 from construction vehicles would be short-term and localized to areas where constructing would occur. Further, the traffic associated with annual or emergency maintenance activities along project roads would be similar to existing conditions.

GEOLOGY AND SOILS

There would be no impacts to geology, and impacts to soils would be low-to-moderate.

- Mitigation measures (use of sediment barriers, reseeding disturbed areas, etc.) would minimize the risk of soil erosion during construction and would aid in soil recovery.
- Improved roads would be more stable and better capable of handling stormwater, reducing soil erosion and risks of mass wasting, particularly during storm events.

WATER RESOURCES

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

- Although the addition of rock fill and a retaining wall would alter 8 square feet of stream channel, these features would help improve habitat and stormwater function by lessening turbidity and reducing the risk of mass wasting.
- Mitigation measures (stormwater pollution prevention plans and use of best management practices) would reduce the potential for erosion and runoff during construction activities, help stabilize disturbed areas, and reduce potential water turbidity impacts.
- Work areas would be isolated and de-watered at locations where culverts would be replaced with the arch pipe or bridges.
- The majority of trees removed would be away from stream edges and would have little effect on stream shading. Tree replanting mitigation at four stream crossings would provide streambank protection and restore riparian buffers.
- New and improved access roads would be constructed with compacted gravel surfaces, drainage dips, culverts, or water bars, as necessary, to prevent future surface erosion and road failures.
- Replacing undersized culverts with adequately sized crossing structures would accommodate a wider range of flows and prevent excess sediment accumulation.

WETLANDS AND FLOODPLAINS

Impacts to wetlands and floodplains would be low. There would be no impacts on the 100-year floodplains of any surface water resources in the project area.

- Of the 10 wetlands identified in the project area, only 2 palustrine scrub shrub wetlands would be directly impacted. These impacts would occur as a result of bridge and arch pipe installation at two streams and would result in a total of approximately 592 square feet of fill.
- Crossing improvements would provide overall benefit to the hydraulic function of the watershed, including wetlands, because they replace inferior stream crossings and would be more adequately sized to accommodate a wider range of flows and prevent excess sediment accumulation.
- The potential for sediment and erosion to affect wetlands in the project area would be mitigated through the use of appropriate erosion control measures during construction, as described in the project's stormwater pollution prevention plan.
- Implementation of the Proposed Action would benefit wetlands in the project area by reducing the potential for road, culvert, or bridge failure, or landslides—all of which could release large amounts of sediment into adjacent wetlands.
- No work would be conducted within the 100-year floodplain.

VEGETATION

Impacts to vegetation would be low, except near the location of the culvert replacement on the unnamed tributary to Sourgrass Creek, where they would be moderate.

- Although about 533 trees would be removed, most tree removal would be distributed throughout the project area, which has dense production forest tree coverage and the remaining canopy, understory trees, shrubs, and crown sprouts would be expected to regrow, and existing trees would continue to provide shade and stabilize soils.
- Near the unnamed tributary to Sourgrass Creek where about 176 of the trees would be removed, 350 trees would be replanted in the riparian area for streambank stabilization and riparian buffer.
- Approximately 3 acres of primarily forest vegetation would be removed. However, impacts would be distributed along the 13.5-mile project and would be reseeded using native seed mixes or plantings.
- Potential noxious weed infestations would be reduced or prevented with the use of mitigation measures and because the project is within existing corridors, no weeds would potentially be introduced into pristine habitats.

FISH AND WILDLIFE

Impacts to fish and wildlife would be low-to-moderate.

- Use of erosion control mitigation measures would minimize or eliminate the delivery of sediments from project activities into nearby streams.
- At stream crossing improvement locations, implementation of mitigation measures would minimize potential in-water work turbidity or soil erosion, and potential fish injury from workers, equipment, or accidental spills of hazardous materials.
- Stream crossing improvements would improve fish habitat in the long term through the re-establishment of naturally flowing streams, widening of channels and floodplains, and improvements in stream processes, drainage, and connectivity.
- The work area would be isolated and de-watered at the locations where culverts would be replaced with the arch pipe or bridges: the unnamed tributary to Sourgrass Creek, Hester Creek,

and the unnamed tributary to Louie Creek. A biologist would be on site during construction to capture, transport, and release any fish and invertebrates to the portion of the stream outside of work areas.

- Construction during ODFW in-water work windows would help avoid potential impacts to migrating juvenile and adult salmonids. Young salmonids that remain in streams during the in-water work window would be captured, transported, and released outside of the work area. BPA would follow any additional mitigation measures required by National Marine Fisheries Service (NMFS) and the Oregon Department of Fish and Wildlife (ODFW) for Oregon Coast coho salmon once consultation with these agencies for Endangered Species Act compliance (NMFS) and fish passage design approval (ODFW) has been completed.
- Any incidental mortality to wildlife from construction activities and temporary displacement of wildlife near work areas would be limited because of the short amount of time impacts would occur (generally from one day to a few weeks in any one area), and because impact areas are small and distributed along roads and at stream crossings. Removal and recovery of aquatic species would be carried out at in-water work areas, and more mobile wildlife species would be expected to avoid work areas during construction. Tree removal would be restricted to occur outside of the bird nesting season.
- The approximately 3 acres of primarily forest habitat that would be permanently removed for road improvements would be dispersed along the 13.5-mile project area in previously disturbed transmission line and road corridors.
- Noise and activity associated with construction would displace wildlife, but impacts would be temporary and localized. Tree removal activities would be completed quickly (i.e., generally within 1 to 2 days) in any one area, and high noise producing activities would be scheduled to protect potential marbled murrelet and northern spotted owl nesting. Also, tree clearing activities would take place outside of the nesting period for birds protected under the Migratory Bird Treaty Act, so no active nests would be impacted.
- Although individual marbled murrelet or northern spotted owl birds could be present within the project area, their presences would be limited to dispersal habitat and possible roosting habitat and there are no known nests or suitable nesting habitat within 0.25 mile (marbled murrelet) or 1 mile (northern spotted owl) of proposed construction activities. Construction timing restrictions, as agreed upon with the US Fish and Wildlife Service would minimize possible disturbances.

CULTURAL RESOURCES

The Proposed Action would likely have no effect on any known cultural resources.

- No historic or archaeological resources were found during project surveys. Mitigation measures to stop work would lessen potential impacts if cultural materials are revealed during construction.
- Potential impacts to wild hazelnut ethnobotanical resources would be avoided and mitigated by minimizing construction footprints where resources are likely and including wild hazelnut in seed mixes at these locations.

SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND PUBLIC SERVICES

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

- There would be no-to-few temporary employment opportunities during construction and no additional employment following completion of the Proposed Action.
- Since existing local lodging is expected to be sufficient to accommodate non-local workers during construction, there would be a low impact on housing during construction.
- Some local procurement of equipment and spending by construction workers would have a low, positive impact on the regional economy during construction.
- Construction of the Proposed Action would have no adverse or disproportionate impacts on environmental justice (minority or low-income) populations.
- Any short-term traffic delays from approximately three to four construction vehicles would not disrupt the ability of emergency services personnel to respond to emergencies.

VISUAL QUALITY

Impacts to visual quality would be low.

- The improvements would occur in areas where the landscape is already altered. The access roads are an existing element of the viewshed and the improvements would occur in previously altered views, reducing any long-term impacts.
- The project area is remote; visual impacts during construction would be temporary and localized, primarily affecting adjacent landowners.

AIR QUALITY AND GREENHOUSE GASSES

Impacts to air quality and greenhouse gasses would be low.

- Air quality impacts would occur near the construction site, would be temporary in nature, and would not result in a change in air quality that would likely create any risk to human health.
- Greenhouse gas emissions would be far below the EPA mandatory reporting threshold and would not represent a substantial change from current conditions.

NOISE, PUBLIC HEALTH, AND SAFETY

Impacts to noise, public health, and safety would be low-to-moderate.

- Noise from construction vehicles would temporarily contribute to existing traffic noise on local roads, but would not likely result in a substantial increase in average traffic noise levels. Because of the temporary and intermittent noise from construction equipment and traffic, noise impacts would depend on the proximity to construction activities.
- Potential safety impacts during construction would be mitigated with the construction safety practices identified in the EA and Mitigation Action Plan.

DETERMINATION

Based on the information in the EA, as summarized here, BPA determines that the Proposed Action is not a major federal action significantly affecting the quality of the human environment within the meaning of NEPA (42 USC 4321 *et seq.*). Therefore, an EIS will not be prepared and BPA is issuing this FONSI for the Proposed Action.

Issued in Portland, Oregon

/s/ F. Lorraine Bodi

F. Lorraine Bodi
Vice President
Environment, Fish and Wildlife

1/13/14

Date

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Boyer–Tillamook Access Road Improvement Project

Mitigation Action Plan

MITIGATION ACTION PLAN

This Mitigation Action Plan (MAP) is part of the Finding of No Significant Impact (FONSI) for the Boyer–Tillamook Access Road Improvement Project. The project would improve about 13.5 miles of access roads at specific sites along an 18-mile portion of the existing 115-kilovolt (kV) Boyer–Tillamook transmission line in Tillamook and Yamhill counties, Oregon.

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

The Bonneville Power Administration (BPA) and its contractor are responsible for implementing the mitigation measures during various phases of project construction. Relevant portions of this MAP will be included in the construction contract specifications. This will obligate the contractor to implement the mitigation measures identified in the MAP that relate to contractor responsibilities during construction and post-construction.

If you have any general questions about the project, contact the Project Manager, Jim Semrau: toll-free telephone 800-282-3713, direct telephone 360-619-6629, or e-mail jesemrau@bpa.gov.

If you have questions about the MAP, contact the BPA lead for the environmental review, Kara Hempy-Mayer: toll-free telephone 800-282-3713, direct telephone 503-230-4982, or e-mail klhempymayer@bpa.gov.

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

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

MITIGATION MEASURES

Minimization and mitigation measures have been identified to reduce potential impacts associated with the Proposed Action, and are provided below in Table 1. Timing restrictions for project construction are provided in Table 2.

Table 1. Mitigation Action Plan

Environmental Resource	Mitigation
Land Use, Recreation, and Transportation	<ul style="list-style-type: none">• Distribute, post, and publicize the construction schedule so landowners and recreational users know when potential construction-related disruptions might occur.• Employ traffic-control flaggers and post warning signs of construction activities and merging traffic, when necessary, for short interruptions of traffic.

Environmental Resource	Mitigation
	<ul style="list-style-type: none"> • Maintain access to residences, farms, and businesses during construction. • Limit access road widths to 14-foot wide except where topography and/or curves necessitate a wider roadbed, and reduce tree removal to the extent possible. • Repair any damage to non-project roads caused during project construction. • Passenger vehicles would be kept at a minimum due to restricted work space.
Geology and Soils	<ul style="list-style-type: none"> • Minimize the ground disturbance footprint, particularly in areas prone to erosion, such as along steep slopes. • Limit soil exposure times by using stabilization and revegetation measures (also see Vegetation). • Reseed all disturbed areas, including the roadbed. • Design roads to limit water accumulation and install appropriate access road drainage (e.g., ditches, water bars, cross drainage, or roadside berms) to control and disperse runoff and reduce the risk of mass wasting.
Water Resources	<ul style="list-style-type: none"> • Construct, widen, and resurface access roads during the dry season when stream flow, rainfall, and runoff are low. • Replace culverts and install bridges during the dry season when stream flow, rainfall, and runoff are low or if flows are present, temporarily divert streams around the construction site (see Table 2). • Prepare a Stormwater Pollution Prevention Plan to reduce erosion and runoff and stabilize disturbed areas. • Minimize the ground disturbances near waterbodies during construction, particularly in areas prone to erosion. • Retain vegetative buffers, where possible, to prevent runoff into waterbodies. • Install sediment barriers and other suitable erosion- and runoff-control devices, prior to ground-disturbing activities at construction sites to minimize offsite sediment movement. • Park construction vehicles or equipment at least 50 feet from any stream or wetland unless authorized by a permit or on an existing roadway. • Stabilize approaches to streams and stream crossings with clean rock or steel plates during construction to minimize erosion and sedimentation. • Plant a total of 547 trees across four stream crossing improvement locations to provide streambank stability and riparian buffer establishment. • Prepare and implement a Spill Prevention and Response Plan and Procedures to prevent, contain, and report accidental spills. • Place refueling and servicing operations away from waterbodies so that spilled material could not enter through natural or manmade drainages (e.g., ditches or streams). • Use pumps, funnels, absorbent pads, and drip pans to avoid or minimize spills during fueling or servicing of vehicles. • Use herbicides in accordance with BPA's <i>Transmission System Vegetation Management Program Final EIS/Record of Decision</i> (BPA 2000).
Wetlands and Floodplains	<ul style="list-style-type: none"> • Design construction activities to minimize impacts to wetlands, and obtain the appropriate permits. • Complete work below ordinary high water during the ODFW recommended in-water work period between July 1 and September 15 (see Table 2).

Environmental Resource	Mitigation
	<ul style="list-style-type: none"> • Flag wetland boundaries in the vicinity of construction areas to ensure these areas are avoided during construction. • Park construction vehicles or equipment at least 50 feet from any wetland, unless authorized by a permit or on an existing road. • Place geotextile fabric around work areas at stream crossings with associated wetlands within 25 feet of wetlands to avoid depositing excavated material into the wetlands. • Plant a total of 547 trees across four stream crossing improvement locations to provide streambank stability and riparian buffer establishment. • Store fuel and refuel machinery at least 150 feet from wetlands and waterways, and inspect regularly for leaks. • Require a BPA environmental specialist to meet with contractors in the field, and visit wetlands near or within construction areas to review mitigation measures and any permit requirements. • Install sediment barriers along with other suitable erosion- and runoff-control Best Management Practices (BMPs), where needed, prior to ground-disturbing activities at construction sites to minimize off-site sediment movement near wetlands. • Revegetate disturbed wetland and buffer areas with appropriate native plant species following specific revegetation guidelines in any applicable permits.
Vegetation	<ul style="list-style-type: none"> • Cut or crush vegetation rather than blade in areas that would remain vegetated, to maximize the ability of native plants to resprout and maintain soil integrity. • Prior to seeding, prepare soils through decompaction, if needed. • Implement noxious weed control measures in coordination with the county weed board and landowners if state-listed noxious weeds are found in the project area. • Treat identified noxious weed infestations where possible prior to construction manually, mechanically, and/or chemically. • Clean vehicles and other equipment that have been in weed infested areas at established blow or wash stations upon leaving the infested areas, to prevent spreading weeds to uninfested areas during construction. • Monitor and treat existing and new infestations during construction annually for at least three years after construction. • Use weed-free mulch, if mulch is used for erosion control. • Equip all vehicles with basic fire-fighting equipment, including extinguishers and shovels, to potentially put out small fires. • Plant a total of 547 trees across four stream crossing improvement locations to provide streambank stability and riparian buffer establishment. • Implement restoration or stabilization actions as soon as possible after ground disturbing activities. • Reseed all disturbed areas as soon as possible after construction with an appropriate seed mix. Native seed mixes would be used where appropriate and effective.
Fish and Wildlife	<p>Fish</p> <ul style="list-style-type: none"> • Complete in-water construction work by the ODFW recommended work period between July 1 and September 15, the period below ordinary high water (see Table 2). • Isolate work areas at the unnamed tributary to Sourgrass Creek, Hester Creek, unnamed tributary to Louie Creek, and the unnamed tributary to Alder Creek crossings and utilize

Environmental Resource	Mitigation
	<p>a biologist to capture, transport, and release any fish found in the work area.</p> <ul style="list-style-type: none"> • Determine the depth and gradient of the streambed, channel dimensions, and streambed material sizing consistent with Standard Local Operating Procedures for Endangered Species design criteria and ODFW fish passage requirements. • Screen any pumping of surface waters to re-route downstream discharges according to NMFS guidelines (NMFS 2011)¹. • Limit diversions of surface water to 10 percent of the available streamflow at the time of construction. • Treat water generated during construction activities prior to its discharge to prevent the release of contaminated or sediment-laden water into the streams. • Prevent equipment from fording the stream sections during construction. • Implement pollution and erosion control measures prior to construction and maintain them throughout the duration of the Proposed Action. • Replant disturbed woody riparian areas at four stream crossing improvement areas with woody plants for channel stability and to provide riparian cover. • Leave any removed large trees or existing pieces of large woody debris in or near the stream channel impact areas on site when feasible. <p>Wildlife</p> <ul style="list-style-type: none"> • Design the Proposed Action to minimize impacts to sensitive natural resources in the affected area. • Seed all temporarily disturbed areas with a native seed mix and plant with native woody vegetation where appropriate to restore natural habitats. Seeding should be done at the appropriate time for germination. • Utilize fire prevention and control training and equipment to protect habitats. • Continue to advise transmission maintenance crews annually about the occurrence (general and/or specific locations), seasons of use, and sensitivity of nesting migratory birds, raptors, and other special-status species that could be adversely affected by maintenance activities. Incorporate this information into maintenance planning and schedules to minimize adverse impacts to sensitive species. • Prohibit work March 1 through August 5 in designated areas to protect migratory birds, including marbled murrelets and Northern spotted owls. Additionally, work will be conducted from 2 hours after sunrise to 2 hours before sunset from August 6 through September 15 in these designated areas (see Table 2). • Complete additional mitigation measures to minimize impacts to marbled murrelets and northern spotted owls recommended by the USFWS as appropriate.
Cultural Resources	<ul style="list-style-type: none"> • Implement BPA's Inadvertent Discovery Procedure. Under this procedure, should ground-disturbing activities reveal any cultural materials (e.g., structural remains, Euro-American artifacts, or Indian artifacts), all activities in the vicinity of the find would cease. The BPA archaeologist, the Oregon State Historic Preservation Officer (SHPO), and affected tribes would be notified immediately.

¹ See Chapter 7 (*References*) of the Boyer Tillamook Access Road Improvement Project Preliminary Environmental Assessment for citations used in the Mitigation Action Plan.

Environmental Resource	Mitigation
	<ul style="list-style-type: none"> • Require, under the Inadvertent Discovery Procedure, that crews cease construction immediately within 200 feet of any human remains, suspected human remains, or any items suspected to be related to a human burial (i.e., funerary items, sacred objects, or objects of cultural patrimony) encountered during Proposed Action construction. The area around the discovery would be secured and the Tillamook and/or Yamhill county sheriffs, the BPA archaeologist, the Oregon State SHPO, and the affected tribes would be contacted immediately. • Minimize construction footprints if any areas contain wild hazelnut as an ethnobotanical species. Include wild hazelnut in seed mixes where the species would naturally occur. • Potential impacts to wild hazelnut ethnobotanical resources would be mitigated by including wild hazelnut in seed mixes or plantings where potential habitat is impacted.
Socioeconomics, Environmental Justice, and Public Services	<ul style="list-style-type: none"> • Distribute a schedule of construction activities to all potentially affected landowners and businesses. • Coordinate construction activities with the Oregon Department of Transportation, county public works and transportation staff, the Siuslaw National Forest, and private landowners to minimize construction-related disturbances. • Compensate landowners at fair market value for any new land rights required for new, temporary, or permanent access roads on private lands. • Maintain access to residences, farms, and businesses during construction. • Use traffic safety signs and flaggers if needed to inform motorists and manage traffic when transporting equipment and construction materials on State Route 22 and U.S. Highway 101. • Repair any damage to non-project roads caused during project construction. • Maintain access to residential and business driveways during construction to the extent possible.
Visual Quality	<ul style="list-style-type: none"> • Schedule all construction work during daylight hours to avoid the use of nighttime illumination of work areas. • Avoid storing construction equipment and supplies on residential streets or access roads directly adjacent to residential or business property to the greatest extent possible. • Incorporate erosion control BMPs into the construction of access roads to minimize permanent visual impacts. • Reseed disturbed, non-farmed areas, including the roadbed, once construction is completed using a predominantly native seed mix or a seed mix agreed upon with landowners. • Inspect reseeded sites periodically over a 3-year period to verify adequate growth has occurred. If necessary, contingency measures, such as reseeded, would be implemented to ensure development of adequate growth and vegetation cover. Areas replanted with woody species would be monitored until a 70 percent establishment rate is met. • Require contractors to maintain clean construction sites to minimize the visual impacts of the temporary use of these areas.
Air Quality and Greenhouse Gasses	<ul style="list-style-type: none"> • Encourage use of carpooling and shuttle vans among construction workers to minimize construction-related traffic and associated emissions.

Environmental Resource	Mitigation
	<ul style="list-style-type: none"> • Utilize alternative fuels for generators at construction sites, such as propane or solar, or use electrical power where practicable. • Reduce electricity usage in the construction office by using compact fluorescent bulbs and turning off computers and other electronic equipment every night. • Recycle or salvage non-hazardous construction and demolition debris where practicable. • 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. • Use local rock sources for road construction where practicable.
Noise, Public Health, and Safety	<ul style="list-style-type: none"> • Distribute the construction schedule to all landowners within 500 feet of the Proposed Action to inform the landowners of when they might experience construction-related noise. • Limit construction noise to daylight hours (7:00 a.m. to 5:00 p.m.). • Locate equipment as far away as is practical from noise-sensitive uses. • Turn off construction equipment during prolonged periods of non-use. • Operate and maintain all equipment so as to minimize noise generation. • Muffle all gasoline or diesel engines exhausts. • Conduct crew safety meetings at the start of each workday to review potential safety issues and concerns. • Conduct monthly meetings between BPA and the contractor to discuss safety concerns. • Secure the site at the end of each workday to protect equipment and the general public.

Table 2. Construction Timing Restrictions and Locations

Underlying Landowner	Location/ Structures	Category of Restriction	Work Description	Timing Restriction Description
All	All	Marbled murrelet and northern spotted owl and migratory bird protection	All tree removal	<ul style="list-style-type: none"> Tree removal to occur between August 6 and February 29
USFS Forest	From 4/1 to 5/7	Marbled murrelet and northern spotted owl protection in critical habitat	All work	<ul style="list-style-type: none"> Work to be performed between August 6 and February 29 Conduct work from 2 hours after sunrise to 2 hours before sunset, from August 6 through September 15
USFS Forest	Between 5/4 and 5/5	Timing of in-water work to protect fish	Access Road (AR) 6 (unnamed tributary to Sourgrass Creek) culvert removal, replacement with bottomless arch culvert	<ul style="list-style-type: none"> Work to be performed between August 6 through September 15
Private Forest and Rural Houses	Between 7/2 and 7/3	Timing of in-water work to protect fish	AR 40-2 (unnamed tributary to Louie Creek) culvert removal, replace with bridge	<ul style="list-style-type: none"> Work to be performed from July 1 through September 15
USFS Forest	From 7/3 to 7/5	Marbled murrelet and northern spotted owl protection in critical habitat	All work	<ul style="list-style-type: none"> Work to be performed between August 6 and February 29 Conduct work from 2 hours after sunrise to 2 hours before sunset, from August 6 through September 15
Private Forest	Between 8/6 and 8/7	Timing of in-water work to protect fish	AR 41-2 (unnamed tributary to Alder Creek), culvert removal replace with bridge	<ul style="list-style-type: none"> Work to be performed between July 1 through September 15
USFS Forest	From 8/6 to 9/1	Marbled murrelet and northern spotted owl in critical habitat	All work	<ul style="list-style-type: none"> Work to be performed between August 6 and February 29 Conduct work from 2 hours after sunrise to 2 hours before sunset, from August 6 through September 15
USFS Forest	From 9/5 to 10/5	Marbled murrelet and northern spotted owl and migratory bird protection in critical habitat	All work	<ul style="list-style-type: none"> Work to be performed between August 6 and February 29 Conduct work from 2 hours after sunrise to 2 hours

Underlying Landowner	Location/ Structures	Category of Restriction	Work Description	Timing Restriction Description
				before sunset, from August 6 through September 15
Private Forest and Rural Houses	Between 11/3 and 11/4	Timing of in-water work to protect fish	AR 44-1 and 44-4 (Lawrence Creek) bridge replacements	<ul style="list-style-type: none"> • Work to be performed from July 1 through September 15
Private Forest and Farm	Between 20/2 and 20/3	Timing of in-water work to protect fish	AR-27 (Hester Creek) culvert removal, replace with bridge	<ul style="list-style-type: none"> • Work to be performed from July 1 through September 15